ENERGY RELATED INVENTIONS PROGRAM
A JOINT PROGRAM OF THE DEPARTMENT OF ENERGY AND THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
STATUS REPORT FOR RECOMMENDATIONS 251 THROUGH 523

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Office of Energy-Related Inventions
Gaithersburg, MD 20899

U.S. DEPARTMENT OF COMMERCE
Robert A. Mosbacher, Secretary
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
John W. Lyons, Director
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251 THROUGH 523

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March 1991

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section 1 Introduction</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Background</td>
<td>1-1</td>
</tr>
<tr>
<td>1.1 Overview of Program Operation</td>
<td>1-1</td>
</tr>
<tr>
<td>1.2 Evaluation Procedures (NIST)</td>
<td>1-2</td>
</tr>
<tr>
<td>1.3 Support Procedures (DOE)</td>
<td>1-2</td>
</tr>
<tr>
<td>1.4 Supplementary Activities</td>
<td>1-3</td>
</tr>
<tr>
<td>1.5 Nature of This Report</td>
<td>1-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 2.0 ERIP Progress Reports</th>
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</tr>
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<tbody>
<tr>
<td>2.0 Introduction</td>
<td>2-1</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Section 3 Status of Recommended Inventions</th>
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</tr>
</thead>
<tbody>
<tr>
<td>3.0 Introduction</td>
<td>3-1</td>
</tr>
<tr>
<td>3.1 Index to Recommended Inventions</td>
<td>3-1</td>
</tr>
<tr>
<td>3.2 Brief Descriptions and Status of Recommended Inventions</td>
<td>3-8</td>
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<tr>
<th>Section 4 Recommended Inventions Cross-reference Lists</th>
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<td>4.0 Introduction</td>
<td>4-1</td>
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<tr>
<th>Appendix A Invention Classifications</th>
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<td>1 Invention Classifications</td>
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<th>Appendix B Technical Categories</th>
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## LIST OF TABLES

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<th>Number</th>
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<tr>
<td>2-1</td>
<td>Progress Report by State</td>
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<tr>
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<td>Progress Report by Technical Category</td>
<td>2-3</td>
</tr>
<tr>
<td>2-3</td>
<td>Progress Report by Invention Stage of Development</td>
<td>2-4</td>
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<td>4-1</td>
<td>Recommended Inventions by Inventor Name</td>
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<td>4-2</td>
<td>Recommended Inventions by Contact Name</td>
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<td>Recommended Inventions by Inventor State</td>
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<td>4-4</td>
<td>Recommended Inventions by Invention Classification</td>
<td>4-23</td>
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PREFACE

The Energy-Related Inventions Program was established in 1975. Since its inception over 27,000 inventions have been evaluated. As of the printing of this report 523 have been recommended to the Department of Energy. This report supercedes NISTIR 4313 and summarizes the status of Inventions 251 through 523. A companion report (NISTIR 4533) summarizes recommended inventions 1 through 250.
Section 1 Introduction

1.0 BACKGROUND

The Office of Energy-Related Inventions (OERI) was established within the National Bureau of Standards (now known as the National Institute of Standards and Technology (NIST)) under the terms of Section 14 of the Federal Nonnuclear Energy Research and Development Act of 1974. Section 14 directs NIST to "give particular attention to the evaluation of all promising energy-related inventions particularly those submitted by individual inventors and small companies for the purpose of obtaining direct grants" from the Department of Energy (DOE).

A separate office was established within DOE to coordinate financial and other DOE support to be provided for inventions recommended by NIST. The NIST and DOE offices together constitute the Energy-Related Inventions Program.

1.1 OVERVIEW OF PROGRAM OPERATION

The Energy-Related Inventions Program is jointly operated by NIST and the DOE. Funding is provided through the DOE budget (Conservation and Renewable Energy, Conservation, Energy Conversion and Utilization Technology).

Under the law NIST (OERI) is responsible for evaluation of inventions, whether submitted directly to OERI or submitted to DOE or other agencies and forwarded to OERI. OERI is also responsible for outreach activities aimed at bringing the Program to the attention of inventors and small businesses.

OERI reviews and processes all evaluation requests. Evaluation is based on three general criteria: technical feasibility, potential energy-conservation or energy-supply impact, and commercial feasibility. All inventors are informed of the results of the evaluation of their invention. An invention which meets the NIST criteria for recommendation is forwarded to DOE for possible support action.

Inventions forwarded by the OERI to DOE are recommended as "technically valid and worthy of consideration for Government support" under the NIST/DOE Inventions Program. An OERI report is furnished with the recommendation to explain in detail the advantages of the technology as well as any qualifications of the recommendations, such as required testing. It also provides guidance to DOE and the inventor for deciding on the nature and extent of support to be given.

Inventions may be recommended by OERI at any stage of their development; some may be conceptual, others at the laboratory testing stage, while others may be in production or in the process of being marketed. How much support will be furnished will depend largely on what is required to move invention development forward or to resolve the question of whether development should continue; the latter question is of particular interest if the NIST evaluation is based on data furnished by the inventor and the recommendation is qualified by an expressed need for data validation under controlled testing conditions.

In general, DOE accepts the NIST recommendation and provides the appropriate support. However, there have been and will continue to be cases in which DOE cannot or will not provide support. DOE attempts to reach agreement with the inventor on the nature and extent of support within constraints. Constraints include the capabilities of the inventor and/or the company involved, possible duplication of prior or on-going DOE-funded efforts, availability of private sector support, and DOE fund limitations.

It should be noted that DOE performs no technical evaluation beyond that done by NIST. DOE does reserve the right to question and reject the NIST recommendation and to restrict support because of policy and/or funding considerations.
Each case is decided on the basis of its own merit and need. If DOE decides to support the invention, support can include: a grant, a contract, or direct assistance of a technical or business nature. DOE's objective is that, at the completion of this support, the inventor will be in a position to do one or more of the following:

- Compete effectively in obtaining contracts from other sources (including existing government programs) to permit further development of the invention.

- Assemble, with confidence of success, the people and capital necessary to produce and market products derived from the invention through a business enterprise in which the inventor is a major participant.

- Negotiate arrangements with an existing company that will develop the inventor's product for commercialization.

1.2 EVALUATION PROCEDURES (NIST)

There are three principal steps in the evaluation process used by the NIST Office of Energy-Related Inventions. In the first step, Disclosure Review and Analysis, invention disclosures are either accepted or rejected for evaluation, depending upon whether or not the invention is within program scope and the disclosure is sufficiently well-prepared to enable evaluation. If accepted, a formal evaluation is initiated.

First-Stage Evaluation is a technical screening in which brief opinions are obtained from OERI staff evaluators, other government scientists or engineers, or consultants or contractors. If the invention is rated as "promising" in this First-Stage, Second-Stage Evaluation is initiated. ("Promising" means the invention seems to be technically feasible, has significant energy conservation or supply potential, and is deemed to be economically and commercially practical.)

In Second-Stage Evaluation an analysis is conducted in greater depth, resulting in a formal report. If Second-Stage Evaluation confirms the finding of "promising," the disclosure and evaluation results are forwarded to DOE with a recommendation for Government support.

Throughout the process, the inventor is kept informed of the status of the evaluation. The inventor is sent a letter notifying him of the results of First- or Second-Stage evaluations as they are completed. If Second-Stage Evaluation has been conducted, a copy of the Second-Stage invention review is also sent to the inventor. Statistics on NIST evaluations since the inception of the program are presented in Section 2.

1.3 SUPPORT PROCEDURES (DOE)

Upon receipt of a recommendation from NIST, DOE contacts the inventor, provides details of the support procedures, and requests a statement as to the nature and extent of support desired, generally in the form of a proposal or grant application. The DOE invention coordinator works with the inventor in proposal preparation to ensure effective review of support options and to develop a satisfactory statement of work and support plan. DOE then decides whether or not to provide support as well as the nature and extent of support.
If financial support is to be provided, DOE initiates procurement action, monitors progress of the procurement action, and helps to expedite processing of the paperwork until the award is made. As of September 1989 DOE has awarded a total of $24,270,612 to 329 of the inventions recommended by NIST. During the period that financial or other support is provided, the DOE invention coordinator monitors and assists the inventor's efforts, maintaining a status report for use by both DOE and NIST.

1.4 SUPPLEMENTARY ACTIVITIES

1.4.1 National Innovation Workshops (NIW)

This project was initiated in early 1980 as a means of informing inventors about the Program and increasing the percentage of higher-quality inventions submitted to OERI. Another objective of the Workshop series is to assist inventors (thus to stimulate innovation in general) by putting them in touch with their community resources and by providing practical instruction in the various elements of the innovation process.

Workshops are conducted in a standard format as two-day seminars. On each day a plenary session and a luncheon session feature national-level speakers on invention and innovation. Three 1-1/2 hour periods each day then are designated for the conduct of 8 to 10 concurrent Workshop sessions.

The Workshops are organized as regional activities by a committee composed of representatives from such regional organizations as universities, venture or other financing groups, private sector institutions concerned with technological innovation, state and local government agencies, patent law associations, etc. Federal involvement is restricted to providing guidance and financial support. The federal role is catalytic in nature in that Workshop feasibility is demonstrated with the expectation that the regional committee will continue Workshops and similar activities in the future without federal involvement.

Fifty-nine NIWs have been held to date, including five in calendar year 1990. Five NIWs are tentatively scheduled for calendar year 1991. Attendance has averaged about 250 inventors and small businesses.

1.4.2 Commercialization Planning Workshops (CPW)

This series of workshops, managed entirely by DOE, was initiated in June 1984 as a mechanism for providing direct and immediate assistance to inventors whose inventions have been recommended by NIST. Each workshop brings together a group of 10-14 such inventors for a three-day meeting with a "faculty" of six workshop leaders who are selected by DOE on the basis of their expertise in at least one aspect of innovation (business planning, marketing, finance, licensing, etc.). Workshop attendance is limited to inventors invited by DOE and the faculty.

The three-day meeting is devised to provide a concentrated educational/informative experience for each recommended inventor; travel and other meeting expenses are paid for by the Government. The objective in each case is for the recommended inventor to develop, with the aid of the faculty, a detailed plan for commercialization of his invention. The plan then serves as the principal basis for the DOE office to conduct their initial review of the recommendation (Analysis).

1.5 NATURE OF THIS REPORT

This report comprises an introductory section (Section 1), followed by two report sections (Sections 2 and 3), a cross reference listings section (Section 4), and two appendices.
Section 2 presents progress reports of ERIP activities. These reports summarize the results of invention evaluations by state, technical category, and invention stage of development.

Section 3 is the main body of the report and contains a brief description of each of the invention, a summary of its status, the identity of the DOE staff coordinator for that invention, the date the invention was submitted to NIST and the date recommended to DOE. The name and address of the person to contact regarding the invention are also included whenever they are available, as are the patent numbers and DOE grant numbers. The inventions are presented in chronological order of their recommendation by NIST.

Section 4 of the report contains four cross reference listings for use in finding specific recommended inventions. The first listing is ordered by inventor name, the second listing is ordered by contact name, and the third by invention classification, the fourth listing is ordered by home state of the inventor.

The appendices at the end of the report include: a listing of the detailed invention classifications (Appendix A) and a listing of the technical categories (Appendix B). Each invention received for evaluation is assigned an invention classification. The invention classifications are grouped to form the technical categories.
SECTION 2 ERIP PROGRESS REPORTS

2.0 Introduction

This section presents reports of the results of the ERIP evaluations through September 30, 1990. As described in section 1, each evaluation is conducted in several stages. The following reports summarize the results of the evaluations across each of the stages. Table 2-1 presents the distribution of invention evaluation requests across stages by State. Table 2-2 presents the distribution of invention evaluation requests across stages by Technical Category. Each evaluation request received is classified into one of 184 technical areas for evaluation purposes. These areas are combined to form nine technical categories for reporting purposes. Appendix A lists the technical area codes and titles; Appendix B lists technical categories and associated technical area codes. Table 2-3 presents the distribution of invention evaluation requests across stages by stage of development at the time of submission.
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EVALUATION PROGRESS REPORT BY STATE
(AS OF SEP 30, 1990)

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|                      | 27590      | 27590     | 13994    | 13719     | 1412     | 1363   | 523   |

PAGE 2-2
30 SEPTEMBER 1990
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<th>EVALUATION REQUESTS RECEIVED</th>
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<th>ACCEPTED FOR SECOND STAGE</th>
<th>COMPLETED SECOND STAGE</th>
<th>RECOMMENDED RECEIVED</th>
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*EXCLUDES 4 NOT YET CLASSIFIED. (DISCLOSURE REVIEW NOT COMPLETED).

**FOR EXAMPLE:

FOSSILE FUEL PRODUCTION: \( \frac{497}{639} \cdot \frac{138}{482} \cdot \frac{63}{135} \cdot 100\% = 10.4\% \)
TABLE 2-3
PROGRESS REPORT BY INVENTION STAGE OF DEVELOPMENT
(As of 30 September, 1989)

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Note: Percentages shown reflect only those inventions assigned a stage of development.

* Stage of Development assignment did not begin until 1978.
Stage of Development assignments shown in Section 3 for inventions not classified were assigned at the time of recommendation.
SECTION 3

STATUS OF RECOMMENDED INVENTIONS

3.0 Introduction

This section contains an index and brief descriptions of inventions 251 through 523 recommended by the Office of Energy-Related Inventions at NIST to the Energy-Related Inventions Program office at DOE. Each description includes a brief description of the invention, a summary of the invention status, significant dates, status, and summary of development. The name of the inventor, primary contact for information, and DOE staff coordinator are also provided. The address of the contact is provided if an award has been made. At the time of receipt, DOE assigns a number (DOE No.) to each recommended invention. These numbers are used for tracking purposes and are also the key for sequencing the descriptions presented in this section. Section 4 presents four cross reference lists for locating specific invention descriptions. These lists provide cross reference between DOE No. and Inventor name, Contact name, invention classification, and inventor state.

3.1 Index to Recommended Inventions

The following is an index to the recommended inventions showing invention DOE No., invention status and title. Status is described in terms of the following steps in the DOE support process.

| Analysis | DOE review of recommendation. Inventor has submitted description of proposed work. Options for support are investigated. |
| Decision Phase | Final Statement of Work derived from above options. Inventor requested to submit supporting documents for procurement action. Prepare purchase request. |
| Other Assistance | Federal Laboratory testing, or business planning assistance, often leading to a grant award outside of ERIP. |
| Procurement | Request for grant or contract in the procurement process. |
| Award | Inventor awarded grant or contract. Work commences. Final report due at end of work period. |
| No Basis For Support | Sources of support within DOE have been investigated, but recommendation will not be supported, e.g., inventor not interested, no area of DOE support could be identified, conflict with other DOE awardees being supported. |
| Complete | Inventor has complied with all the requirements of the Statement of Work or ERIP assistance is terminated. |
## INDEX TO RECOMMENDED INVENTIONS

<table>
<thead>
<tr>
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<th>TITLE</th>
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<td>Thermal Bank</td>
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<td>High Performance Heat Pump</td>
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<td>&quot;Turbo-Glo&quot; Immersion Furnace</td>
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<td>Method and Apparatus for Scrubbing Gas - Scrubbing Apparatus</td>
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<td>Method and Apparatus for Irrigating Container-Grown Plants</td>
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<td>Method and Apparatus for Melting Snow</td>
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<td>Corrosion Protection Process for Bore Hole Tool</td>
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<td>0344</td>
<td>Complete</td>
<td>Machine for Separating Concrete from Steel</td>
</tr>
</tbody>
</table>

**DATE:** 30 SEPTEMBER 1990  
**PAGE:** 3-3
# INDEX TO RECOMMENDED INVENTIONS (cont.)

<table>
<thead>
<tr>
<th>DOE No.</th>
<th>STATUS</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0345</td>
<td>Complete</td>
<td>Tulleners Wave Piercer</td>
</tr>
<tr>
<td>0346</td>
<td>Complete</td>
<td>Ultra-Pure Water System for Hospitals</td>
</tr>
<tr>
<td>0347</td>
<td>Complete</td>
<td>Oxide Dispersion Strengthened Aluminum Alloys</td>
</tr>
<tr>
<td>0348</td>
<td>Complete</td>
<td>Hydrogen Sulfide Removal for Natural Gas</td>
</tr>
<tr>
<td>0349</td>
<td>Analysis</td>
<td>Three Roll Tension Stand</td>
</tr>
<tr>
<td>0350</td>
<td>Complete</td>
<td>Method and Apparatus for Testing Soil</td>
</tr>
<tr>
<td>0351</td>
<td>Complete</td>
<td>Flash Gate Board</td>
</tr>
<tr>
<td>0352</td>
<td>Award</td>
<td>A Waterjet Mining Machine</td>
</tr>
<tr>
<td>0353</td>
<td>Decision Phase</td>
<td>Compu-Turbo-Aligner</td>
</tr>
<tr>
<td>0354</td>
<td>Award</td>
<td>Preparation of Biliquid Foam Compositions</td>
</tr>
<tr>
<td>0355</td>
<td>Award</td>
<td>Energy-Efficient Ice Cube Making Machine</td>
</tr>
<tr>
<td>0356</td>
<td>Complete</td>
<td>Portable Automatic Firewood Processor</td>
</tr>
<tr>
<td>0357</td>
<td>Complete</td>
<td>TUBEXPRESS Pneumatic Capsule Pipeline Transport System</td>
</tr>
<tr>
<td>0358</td>
<td>Award</td>
<td>Device for Well Site Monitoring and Control of Rod- Pumped Wells</td>
</tr>
<tr>
<td>0359</td>
<td>Award</td>
<td>Solid Fuel Hot Air Furnace</td>
</tr>
<tr>
<td>0360</td>
<td>Analysis</td>
<td>Temperature Controllable Heat Valve</td>
</tr>
<tr>
<td>0361</td>
<td>Award</td>
<td>Measurement of Liquid Volumes with Compensation for Temperature Induced Variations</td>
</tr>
<tr>
<td>0362</td>
<td>Award</td>
<td>Improved Solvents for the Puras Seawater Desalination Process</td>
</tr>
<tr>
<td>0363</td>
<td>Complete</td>
<td>Impactor Separator</td>
</tr>
<tr>
<td>0364</td>
<td>Complete</td>
<td>Intermittant Solar Ammonia Absorption Cycle (ISAAC)</td>
</tr>
<tr>
<td>0365</td>
<td>Decision Phase</td>
<td>Safety Stovepipe Damper Assembly</td>
</tr>
<tr>
<td>0366</td>
<td>Award</td>
<td>High Energy Semiconductor Switch</td>
</tr>
<tr>
<td>0367</td>
<td>Award</td>
<td>Disintegration of Wood</td>
</tr>
<tr>
<td>0368</td>
<td>Analysis</td>
<td>Aircraft Minimum Drag Speed System</td>
</tr>
<tr>
<td>0369</td>
<td>Award</td>
<td>&quot;Fire Jet&quot; Automatic Anthracite Burner</td>
</tr>
<tr>
<td>0370</td>
<td>Award</td>
<td>Dehumidification System for Indoor Pools and Other High Humidity Areas</td>
</tr>
<tr>
<td>0372</td>
<td>No DOE Support</td>
<td>FS 630 Heat Pump Thermostat Control</td>
</tr>
<tr>
<td>0373</td>
<td>No DOE Support</td>
<td>Tobacco Harvesting Machine</td>
</tr>
<tr>
<td>0374</td>
<td>No DOE Support</td>
<td>Expansion Compression System for Efficient Power Output</td>
</tr>
<tr>
<td>0375</td>
<td>Decision Phase</td>
<td>Regulation of Internal Combustion Engines</td>
</tr>
<tr>
<td>0376</td>
<td>Award</td>
<td>MDT Twister</td>
</tr>
<tr>
<td>0377</td>
<td>Complete</td>
<td>Machine and Method for Producing Energy-Saving Transformers Incorporating Amorphous Metal Cores</td>
</tr>
<tr>
<td>0378</td>
<td>No DOE Support</td>
<td>A Novel Method of Producing Ice-Water Slurries</td>
</tr>
<tr>
<td>0379</td>
<td>Award</td>
<td>An Improved Cutter for Plaster Board and the Like</td>
</tr>
<tr>
<td>0380</td>
<td>Analysis</td>
<td>Inner Roof Solar System</td>
</tr>
<tr>
<td>0381</td>
<td>Analysis</td>
<td>Blow-In Blanket System</td>
</tr>
<tr>
<td>0382</td>
<td>Award</td>
<td>Multiple Heat-Range Spark Plug</td>
</tr>
<tr>
<td>0383</td>
<td>Complete</td>
<td>System for Recovery of Waste Hot Water Heat Energy</td>
</tr>
<tr>
<td>0384</td>
<td>Award</td>
<td>Electro-Optic Inspection of Heat Exchangers</td>
</tr>
<tr>
<td>0385</td>
<td>No DOE Support</td>
<td>Process for Treating Humus Materials</td>
</tr>
<tr>
<td>0386</td>
<td>Complete</td>
<td>Device and Method to Enable Detection and Measurement of Deformities in Well Components</td>
</tr>
<tr>
<td>0387</td>
<td>Award</td>
<td>Quiet Operating Internal Combustion Engine with Complete Highly Efficient Expansion Cycle</td>
</tr>
<tr>
<td>0388</td>
<td>Analysis</td>
<td>Preparation of Extremely Fine, Superalloy Powders and Their Fabrication into Dense, Sintered, Net Shape Superalloy Parts</td>
</tr>
<tr>
<td>0389</td>
<td>No DOE Support</td>
<td>Reduced Size Heating Assembly for an Electric Stove</td>
</tr>
<tr>
<td>0390</td>
<td>Complete</td>
<td>Wicks Efficient Fuel Utilization System</td>
</tr>
<tr>
<td>0391</td>
<td>Analysis</td>
<td>Compressed Gas Energy Storage</td>
</tr>
<tr>
<td>0392</td>
<td>Analysis</td>
<td>Method and Apparatus for Drilling Horizontal Holes in Geological Structures from a Vertical Bore</td>
</tr>
<tr>
<td>DOE No.</td>
<td>STATUS</td>
<td>TITLE</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>0393</td>
<td>Award</td>
<td>Method and Apparatus for Ultrasonic Testing of Tubular Goods</td>
</tr>
<tr>
<td>0394</td>
<td>Decision Phase</td>
<td>Variable Wall Mining Machine</td>
</tr>
<tr>
<td>0395</td>
<td>Award</td>
<td>Holland Oil Well Pumping System</td>
</tr>
<tr>
<td>0396</td>
<td>Award</td>
<td>Dyna Flow</td>
</tr>
<tr>
<td>0397</td>
<td>Award</td>
<td>In Service Tank Bottom Leak Detection and Repair System</td>
</tr>
<tr>
<td>0398</td>
<td>Analysis</td>
<td>Hydraulic Test Unit - Test Plugs - Mechanical Seal Plugs</td>
</tr>
<tr>
<td>0399</td>
<td>Award</td>
<td>Hydrodynamic/Multi Deflection Pad Bearing</td>
</tr>
<tr>
<td>0400</td>
<td>Decision Phase</td>
<td>Continuous Casting and Inside Rolling of Hollow Rounds</td>
</tr>
<tr>
<td>0401</td>
<td>Award</td>
<td>A Miniature, Inexpensive Oxygen-Sensing Element</td>
</tr>
<tr>
<td>0402</td>
<td>No DOE Support</td>
<td>KTM Logger</td>
</tr>
<tr>
<td>0403</td>
<td>Award</td>
<td>Enterprise Lubricator</td>
</tr>
<tr>
<td>0404</td>
<td>Analysis</td>
<td>Steam-Methane Reforming in Molten Carbonate Salt</td>
</tr>
<tr>
<td>0405</td>
<td>Analysis</td>
<td>Prehydrolysis and Digestion of Plant Material</td>
</tr>
<tr>
<td>0406</td>
<td>Award</td>
<td>Aluminum Reduction Cell Spent Potlining Fluid Bed Incinerator</td>
</tr>
<tr>
<td>0407</td>
<td>Analysis</td>
<td>An Extended Range Tankless Water Heater</td>
</tr>
<tr>
<td>0408</td>
<td>No DOE Support</td>
<td>Floodshield System</td>
</tr>
<tr>
<td>0409</td>
<td>Award</td>
<td>Self-Dressing Resistance Welding Electrode</td>
</tr>
<tr>
<td>0410</td>
<td>Award</td>
<td>The World's First Gas Fired, Forced Air, High Efficiency, Furnace</td>
</tr>
<tr>
<td>0411</td>
<td>Award</td>
<td>That Requires No Electricity</td>
</tr>
<tr>
<td>0412</td>
<td>Award</td>
<td>The Wide-Open-Throttle Approach to Greater Automotive Fuel Efficiency</td>
</tr>
<tr>
<td>0413</td>
<td>Award</td>
<td>Meta-Lax Stress Relief for Almost any Size Metal Structure</td>
</tr>
<tr>
<td>0414</td>
<td>Award</td>
<td>Non Metallic Railroad Switch Covers</td>
</tr>
<tr>
<td>0415</td>
<td>Award</td>
<td>Low Profile Fluid Catalytic Cracker</td>
</tr>
<tr>
<td>0416</td>
<td>Analysis</td>
<td>Oil Recovery by Modified Steam Drive Employing High Velocity</td>
</tr>
<tr>
<td>0417</td>
<td>Analysis</td>
<td>Non-Condensible Gas</td>
</tr>
<tr>
<td>0418</td>
<td>Analysis</td>
<td>Self-Contained Pipe Freezing Unit</td>
</tr>
<tr>
<td>0419</td>
<td>Award</td>
<td>Rotary Drill Bit</td>
</tr>
<tr>
<td>0420</td>
<td>Analysis</td>
<td>Use of Chemical Vapor Deposition to Coat Metal Surfaces with High</td>
</tr>
<tr>
<td>0421</td>
<td>Award</td>
<td>Temperature Superconducting Materials</td>
</tr>
<tr>
<td>0422</td>
<td>Award</td>
<td>Flexible Drill Pipe</td>
</tr>
<tr>
<td>0423</td>
<td>Award</td>
<td>A Planing Machine to Produce Ultra-Fine Coal</td>
</tr>
<tr>
<td>0424</td>
<td>Analysis</td>
<td>The Utah Transmission/Continuously Variable Speed Wind Generator</td>
</tr>
<tr>
<td>0425</td>
<td>Award</td>
<td>High Efficiency Ozone Generating System</td>
</tr>
<tr>
<td>0426</td>
<td>Award</td>
<td>High Temperature Condensing Biomass Combustion System</td>
</tr>
<tr>
<td>0427</td>
<td>Award</td>
<td>Eddy Current Transducing System</td>
</tr>
<tr>
<td>0428</td>
<td>Award</td>
<td>Non-Catalytic Steam Hydrolysis of Fats</td>
</tr>
<tr>
<td>0429</td>
<td>Award</td>
<td>Uni-Frac Column and T-By Tray</td>
</tr>
<tr>
<td>0430</td>
<td>Award</td>
<td>A Low Cost Galloping Indicator</td>
</tr>
<tr>
<td>0431</td>
<td>Award</td>
<td>Whitten Dugas Mud Pump Enhancer</td>
</tr>
<tr>
<td>0432</td>
<td>Award</td>
<td>Method and Apparatus for Removing Excess Water from Subterranean</td>
</tr>
<tr>
<td>0433</td>
<td>Award</td>
<td>Wells.</td>
</tr>
<tr>
<td>0434</td>
<td>Analysis</td>
<td>Water Hammer Pile Driver</td>
</tr>
<tr>
<td>0435</td>
<td>Analysis</td>
<td>Improved Methods to Manufacture and Use Carbon- Alumina Composite</td>
</tr>
<tr>
<td>0436</td>
<td>Award</td>
<td>Anodes for Aluminum Reduction</td>
</tr>
<tr>
<td>0437</td>
<td>Award</td>
<td>Modular Apparatus for Laundry Dryer Heat Recovery</td>
</tr>
<tr>
<td>0438</td>
<td>Analysis</td>
<td>A New Thermodynamic Process of Actual Approach to the Carnot Cycle</td>
</tr>
<tr>
<td>0439</td>
<td>Analysis</td>
<td>The Russell Self-Piloted Check Valve</td>
</tr>
<tr>
<td>0440</td>
<td>Analysis</td>
<td>Steam Generator With Integral Down-Draft Dryer</td>
</tr>
<tr>
<td>0441</td>
<td>Analysis</td>
<td>Microwave Reflection by Synthetic Metals</td>
</tr>
<tr>
<td>0442</td>
<td>Analysis</td>
<td>Project Twenty-One Rapid Transit System</td>
</tr>
<tr>
<td>0443</td>
<td>Analysis</td>
<td>Microwave Strip Heat Exchanger</td>
</tr>
<tr>
<td>0444</td>
<td>Analysis</td>
<td>Method and Apparatus for Applying Metal Cladding of Surfaces and</td>
</tr>
<tr>
<td>0445</td>
<td>Analysis</td>
<td>Products Formed Therby</td>
</tr>
</tbody>
</table>

DATE: 30 SEPTEMBER 1990  PAGE 3-5
<table>
<thead>
<tr>
<th>DOE No.</th>
<th>STATUS</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0442</td>
<td>Award</td>
<td>Long Life &quot;PC&quot; Drill Bit</td>
</tr>
<tr>
<td>0443</td>
<td>Award</td>
<td>A Method for the Use of Oxygen Ion Vacancies in Lanthanide Oxides to Increase their Utilization</td>
</tr>
<tr>
<td>0444</td>
<td>Award</td>
<td>Apparatus and Method for Using Microwave Radiation to Measure Water Content of a Fluid</td>
</tr>
<tr>
<td>0445</td>
<td>Analysis</td>
<td>Condenser Tube Insertion Device</td>
</tr>
<tr>
<td>0446</td>
<td>Award</td>
<td>Heavy Oil Recovery Process</td>
</tr>
<tr>
<td>0447</td>
<td>Award</td>
<td>Hot Control of Unit Volume Energy of Grinding</td>
</tr>
<tr>
<td>0448</td>
<td>Award</td>
<td>New Automatic Transmission for Road Vehicles</td>
</tr>
<tr>
<td>0449</td>
<td>Award</td>
<td>Fuel Savings in the Heavy Trucking Industry Through Cool Storage</td>
</tr>
<tr>
<td>0450</td>
<td>Analysis</td>
<td>Portable Ultrasonic Inspection System for Oil Country Tubulars</td>
</tr>
<tr>
<td>0451</td>
<td>Analysis</td>
<td>In-Place Asphalt Pavement Restoration, via Recycling of the Existing Materials</td>
</tr>
<tr>
<td>0452</td>
<td>Decision Phase</td>
<td>Magnetic Thin Films Formed in a Glow Discharge</td>
</tr>
<tr>
<td>0453</td>
<td>Award</td>
<td>Particle Densitometer Based on the Acoustical Resonance Measurement</td>
</tr>
<tr>
<td>0454</td>
<td>Decision Phase</td>
<td>Mercury-Free PVT Apparatus for Thermophysical Property Analyses of Hydrocarbon Reservoir Fluids</td>
</tr>
<tr>
<td>0455</td>
<td>Award</td>
<td>Thermoelectric Generator for Diesel Engines</td>
</tr>
<tr>
<td>0456</td>
<td>Analysis</td>
<td>A Large, Balanced Compounded, Hydraulic Stirling Engine with Rotary Shaft Output</td>
</tr>
<tr>
<td>0457</td>
<td>Decision Phase</td>
<td>Continuous Saccharification of Ligno-Cellulistic Biomass in Two Stages</td>
</tr>
<tr>
<td>0458</td>
<td>Decision Phase</td>
<td>Continuous Casting by Float Process of Thin Sheet Carbon Steel</td>
</tr>
<tr>
<td>0459</td>
<td>Decision Phase</td>
<td>Natural Gas Conversion Process</td>
</tr>
<tr>
<td>0460</td>
<td>Procurement</td>
<td>Automatic Whole &amp; Multiple Tree Firewood/Hog Fuel Processor</td>
</tr>
<tr>
<td>0461</td>
<td>Analysis</td>
<td>Thermally Stable Polynaminonitriles Which Cure Without Evolution of Volatiles</td>
</tr>
<tr>
<td>0462</td>
<td>Decision Phase</td>
<td>Energy Efficient Asymmetric Pre-Swirl Vane and Twisted Propeller Propulsion System</td>
</tr>
<tr>
<td>0463</td>
<td>Analysis</td>
<td>Carburetor Fuel Feed System with Bidirectional Passages</td>
</tr>
<tr>
<td>0464</td>
<td>Analysis</td>
<td>Chain Saw Tip Stabilizing Device for Use with an Anti-Kickback Device</td>
</tr>
<tr>
<td>0465</td>
<td>Analysis</td>
<td>Multiconductive Base Form Microchip Carrier/Connector</td>
</tr>
<tr>
<td>0466</td>
<td>Analysis</td>
<td>Coal Log Fuel Pipeline Transportation System</td>
</tr>
<tr>
<td>0467</td>
<td>Analysis</td>
<td>High Pressure Lubricoolant Jet for Supporting Metal Machining</td>
</tr>
<tr>
<td>0468</td>
<td>Analysis</td>
<td>Constant-Torque System for Beam Pumps</td>
</tr>
<tr>
<td>0469</td>
<td>Analysis</td>
<td>Recuperator of Flu Gas Heat</td>
</tr>
<tr>
<td>0470</td>
<td>Analysis</td>
<td>Flat Belt Continuously Variable High Speed Drive</td>
</tr>
<tr>
<td>0471</td>
<td>Decision Phase</td>
<td>Method and Tool for Logging-While-Drilling</td>
</tr>
<tr>
<td>0472</td>
<td>Analysis</td>
<td>Method and Apparatus for Maximizing Refrigeration Capacity</td>
</tr>
<tr>
<td>0473</td>
<td>Analysis</td>
<td>Energy Saving Head Pressure Control System for Air Cooled Condensers</td>
</tr>
<tr>
<td>0474</td>
<td>Analysis</td>
<td>Sweep-Spike Combination Tillage Tool</td>
</tr>
<tr>
<td>0475</td>
<td>Decision Phase</td>
<td>Auxiliary A-C, Heating and Engine Warming System for Trucks</td>
</tr>
<tr>
<td>0476</td>
<td>Analysis</td>
<td>Pickard Line-up Boom</td>
</tr>
<tr>
<td>0477</td>
<td>Analysis</td>
<td>&quot;Ultra Design Method&quot; - Method for Designing Apparel by Computer</td>
</tr>
<tr>
<td>0478</td>
<td>Analysis</td>
<td>The &quot;Triple Design Cycle&quot; Cogeneration Program</td>
</tr>
<tr>
<td>0479</td>
<td>Analysis</td>
<td>Solar Cooker</td>
</tr>
<tr>
<td>0480</td>
<td>Analysis</td>
<td>AlasCan Composting Toilet and Greywater Treatment Systems</td>
</tr>
<tr>
<td>0481</td>
<td>Other Assistance</td>
<td>Refrigerant Mixture of R-11 and R-216 to Provide Ice Making Abilities in Centrifugal Compressors</td>
</tr>
<tr>
<td>0482</td>
<td>Analysis</td>
<td>Improved Fluid Pumping Device and Liquid Sensor</td>
</tr>
<tr>
<td>0483</td>
<td>Analysis</td>
<td>Downhole Neutron Flux Monitor</td>
</tr>
<tr>
<td>0484</td>
<td>Analysis</td>
<td>MUD DEVIL - Deaerator Mixer</td>
</tr>
<tr>
<td>0485</td>
<td>Analysis</td>
<td>Method and Apparatus for Placing Cement Plugs in Wells</td>
</tr>
<tr>
<td>0486</td>
<td>Analysis</td>
<td>Cotton Stalk and Shredder with Re-Bedder</td>
</tr>
<tr>
<td>ID</td>
<td>Analysis</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>0487</td>
<td>Analysis</td>
<td>Direct Fired Steam Generator</td>
</tr>
<tr>
<td>0488</td>
<td>Analysis</td>
<td>A System for Recovering Sulfur from Gases, Especially Natural Gas</td>
</tr>
<tr>
<td>0489</td>
<td>Analysis</td>
<td>Optimized Control System for Ultra-Efficient Surface Coating Operations</td>
</tr>
<tr>
<td>0490</td>
<td>Analysis</td>
<td>Laney Belt Terracer</td>
</tr>
<tr>
<td>0491</td>
<td>Analysis</td>
<td>QUBUS III Technology for Producing Ethanol</td>
</tr>
<tr>
<td>0492</td>
<td>Analysis</td>
<td>Reactive Sintered Nickel Aluminide</td>
</tr>
<tr>
<td>0493</td>
<td>Analysis</td>
<td>Airfoil Design with Improved Aerodynamic Characteristics</td>
</tr>
<tr>
<td>0494</td>
<td>Analysis</td>
<td>Recovery of Dilute Butanol by Adsorption on Lignin</td>
</tr>
<tr>
<td>0495</td>
<td>Analysis</td>
<td>Method for Monitoring Thinning of Pipe Wall</td>
</tr>
<tr>
<td>0496</td>
<td>Analysis</td>
<td>Spiral Track Oven</td>
</tr>
<tr>
<td>0497</td>
<td>Analysis</td>
<td>Downhole Casing Repair System</td>
</tr>
<tr>
<td>0498</td>
<td>Analysis</td>
<td>Hydrocarbon Reserve Evaluation/Determining Permeability in Hydrocarbon Wells</td>
</tr>
<tr>
<td>0499</td>
<td>Analysis</td>
<td>Electrostatic Agglomerator</td>
</tr>
<tr>
<td>0500</td>
<td>Analysis</td>
<td>Neutral Atom Interferometry Gravity Sensor</td>
</tr>
<tr>
<td>0501</td>
<td>Analysis</td>
<td>High Efficiency Dehumidifier/Air Conditioner</td>
</tr>
<tr>
<td>0502</td>
<td>Analysis</td>
<td>Mechanically Infinitely Variable Speed Transmission for Automotive Use to Save Fuel</td>
</tr>
<tr>
<td>0503</td>
<td>Analysis</td>
<td>Method and Apparatus for Introducing Normally Solid Materials into Substrate Surfaces</td>
</tr>
<tr>
<td>0504</td>
<td>Analysis</td>
<td>Split Hub Shale Oil Retort</td>
</tr>
<tr>
<td>0505</td>
<td>Analysis</td>
<td>Vertical Axis Wind Turbine</td>
</tr>
<tr>
<td>0506</td>
<td>Analysis</td>
<td>Improved Poured Concrete Wall Forming System</td>
</tr>
<tr>
<td>0507</td>
<td>Analysis</td>
<td>Utilization of Precipitator Dust Stored at the TVA National Fertilizer Development Center</td>
</tr>
<tr>
<td>0508</td>
<td>Analysis</td>
<td>On-Line Mechanical Tube Cleaning for Steam Electric Power Plants on an Open Cooling Water System</td>
</tr>
<tr>
<td>0509</td>
<td>Analysis</td>
<td>Process for Gas Liquid Contacting in Cocurrent Distillation</td>
</tr>
<tr>
<td>0510</td>
<td>Analysis</td>
<td>Oilwell Power Controller</td>
</tr>
<tr>
<td>0511</td>
<td>Analysis</td>
<td>Subterranean Permeability Modification by Use of a Microbial Polysaccharide Polymer</td>
</tr>
<tr>
<td>0512</td>
<td>Analysis</td>
<td>Automatic Metering System (AMS)</td>
</tr>
<tr>
<td>0513</td>
<td>Analysis</td>
<td>Multiwell Pump</td>
</tr>
<tr>
<td>0514</td>
<td>Analysis</td>
<td>Silver Sensor / Energy Wire</td>
</tr>
<tr>
<td>0515</td>
<td>Analysis</td>
<td>Vacuum Bagging Apparatus</td>
</tr>
<tr>
<td>0516</td>
<td>Analysis</td>
<td>Device for Converting Linear Motion to Rotary Motion and Vice Versa</td>
</tr>
<tr>
<td>0517</td>
<td>Analysis</td>
<td>Dynamic Gas Pulse Loading System</td>
</tr>
<tr>
<td>0518</td>
<td>Analysis</td>
<td>SHE-INAL - A Stand-Alone Female Urinal Fixture for Public Restrooms</td>
</tr>
<tr>
<td>0519</td>
<td>Analysis</td>
<td>Aerocylinder</td>
</tr>
<tr>
<td>0520</td>
<td>Analysis</td>
<td>Carbon Fiber Reinforced Tin-Superconductor Composites</td>
</tr>
<tr>
<td>0521</td>
<td>Analysis</td>
<td>Ultraviolet Sterilization of Contact Lens</td>
</tr>
<tr>
<td>0522</td>
<td>Analysis</td>
<td>Aqua-Shear</td>
</tr>
<tr>
<td>0523</td>
<td>Analysis</td>
<td>Power Factor Correction System by Means of Continuous Modulation</td>
</tr>
</tbody>
</table>
3.2 Brief Descriptions of Recommended Inventions

The following presents brief descriptions of each of the inventions 251 through 523 recommended by the Office of Energy Related Inventions at NIST to the Energy Related Inventions Program office at DOE. Each description includes a brief description of the invention, a summary of the invention status, significant dates, status, and summary of development. The name of the inventor, primary contact for information, and DOE staff coordinator are also provided. The address of the contact is provided if an award has been made. The descriptions are presented in DOE number sequence. Section 4 presents four cross reference lists for locating specific invention descriptions. These lists provide cross reference between DOE No. and Inventor name, DOE No. and Contact name, DOE No. and Inventor state, and Doe No. and Invention classification.
DOE No: 0251
Title: Process and Apparatus for Reducing the Energy Required to Separate Liquids by Distillation
Description: A method for heat recovery in distillation by providing heat exchange tubing directly on the trays of the tower. This method is used primarily in crude oil stills.
Inventor: Victor R Thayer
Contact: E A Kiessling
State: DE
15402 Wandering Trail
Friendswood, TX 77546
302-239-5059
Status: Complete
Status Date: 09/12/88
OERI No.: 009260
Patent Status: Patent # - 4265736
Development Stage: Prototype Test
Technical Category: Industrial Processes
Recv by NIST: 12/03/82
Recom. by NIST: 01/31/84
Award Date: 03/13/87
Award Amount: $ 41,565 Grant No: FG01-87CE15303
Contract Period: 03/13/87 - 09/12/88
Summary: A grant of $41,565 was awarded on March 13, 1987, to investigate the technology further. The technology was determined not to be cost effective under current economic conditions.

DOE No: 0252
Title: Thermal Bank
Description: The "Thermal Bank" is a latent heat type thermal energy storage system. Calcium chloride hexahydrate, the phase change salt, or any suitable phase change material, is used as the working medium. Selected plastic film is employed to form, fill and seal the tube sheets for the "Thermal Bank" packaging.
Inventor: William C Whitman
Contact: William C Whitman
State: NJ
Three Fourth Street
New Brunswick NJ 08901
201-545-3849
Status: Complete
Status Date: 08/26/86
OERI No.: 009217
Patent Status: Patent # - 4287942
Development Stage: Production Engineering
Technical Category: Miscellaneous
Recv by NIST: 11/02/82
Recom. by NIST: 01/31/84
Award Date: 03/19/85
Award Amount: $ 70,778 Grant No: FG01-85CE15211
Contract Period: 03/19/85 - 09/18/85
Summary: A grant of $70,778 was awarded on March 19, 1985 to Rutgers University to test efficiency of various packaging materials and eutectic salts. The grantee reached agreement with Rutgers to continue R & D beyond grant period using private sector and State of New Jersey co-funding.
DOE No: 0253  DOE Coord: J.Aellen

Title: High Performance Heat Pump

Description: A modified Brayton refrigeration cycle using injected liquid to achieve better performance.

Inventor: Anthony Peters
Contact: Anthony Peters
State: NJ
300 Winston Drive
Cliffside Park NJ 07010
201-886-1320

Status: Complete  Status Date: 11/26/85  OERI No.: 008635

Patent Status: Not Applied For
Development Stage: Engineering Design
Technical Category: Buildings, Structures & Components

Summary: An grant of $63,200 was awarded to perform a thermodynamic analysis, study component design and perform an economic analysis. Received the final report for the work done in phase I. The inventor worked on a different version of heat pump rather than the one that was recommended by N.B.S. without prior approval of DOE. Work terminated on this project. About $25,000 of the total grant has been spent so far.

DOE No: 0254  DOE Coord: D.G.Mello

Title: "Turbo-Glo" Immersion Furnace

Description: A gas-fired melting furnace designed for melting aluminum. The design uses a new type combustion chamber and heat transfer device.

Inventor: Daniel Douenias
Contact: Daniel Douenias
State: NY
Gim Metal Products, Inc.
164 Glen Cove Road
Carle Place NY 11514
516-741-3005

Status: Complete  Status Date: 09/30/86  OERI No.: 009327

Patent Status: Not Applied For
Development Stage: Prototype Development
Technical Category: Industrial Processes

Summary: A grant of $74,700 was awarded on January 29, 1985 to build and test a prototype under actual foundry conditions. Invention saves 66% of fuel formerly required for the same operation. Grantee plans to license technology to competitors.
DOE No: 0255  DOE Coord: G.K.Ellis
Title: Method and Apparatus for Scrubbing Gas - Scrubbing Apparatus
Description: A patented stack gas scrubber which contains a rotatable impeller to duplicate high energy venturi scrubber performance and which is claimed, as a result of test, to use 50% the power consumption.
Inventor: Arthur F Stone  Contact: Arthur F Stone
State : NJ  Status: Decision Phase  Status Date: 07/15/86  OERI No. : 009806
Patent Status : Patent # - 4289506 and others
Development Stage : Prototype Test
Technical Category: Industrial Processes
Recv by NIST : 11/03/83  Recom. by NIST : 03/27/84
Summary: Several proposals have been received from the inventor. Parties unable as yet to reach agreement on a proposal DOE can support. Awaiting next action from inventor.

******************************************************************************************

DOE No: 0256  DOE Coord: J.Aellen
Title: Method and Apparatus for Irrigating Container Grown Plants
Description: A method and apparatus for irrigating container grown plants.
Inventor: Evert S Green  Contact: Evert S Green
State : NY  Status: Other Assistance  Status Date: 09/30/89  OERI No. : 009696
Patent Status : Patent # - 4245434 and others
Development Stage : Production & Marketing
Technical Category: Miscellaneous
Recv by NIST : 09/14/83  Recom. by NIST : 04/25/84
Summary: Referred to NATAS for licensing assistance.
DOE No: 0257  DOE Coord: A.R.Barnes
Title: Method and Apparatus for Melting Snow
Description: A process to remove snow from city streets by melting instead of hauling to dump sites.
Inventor: Richard H Baasch
State: NE
Contact: Richard H Baasch
Post Office Box #1013
Grand Isle NE 68802
308-382-5749
Status: Complete  Status Date: 08/25/86  OERI No.: 009758
Development Stage: Production Engineering
Technical Category: Miscellaneous
Recv by NIST: 10/07/83
Recom. by NIST: 04/30/84
Award Date: 08/26/85  Award Amount: $60,492 Grant No: FG01-85CE15204
Contract Period: 08/26/85 - 08/25/86
Summary: A grant of $60,492 was awarded on August 26, 1985, to build and test three prototypes in cooperation with various municipalities. Technology shelved on basis of cost effectiveness.

DOE No: 0258  DOE Coord: J.Aellen
Title: Corrosion Protection Process for Bore Hole Tool
Description: A process for providing an aluminum alloyed surface on iron-base alloys for down-hole tools and parts for improved corrosion resistance replacing more expensive alloys such as chromium and nickel-based alloys and others. This process would be used primarily for parts used in gas and oil wells.
Inventor: Anthony T Rallis
State: TX
Contact: Anthony T Rallis
4700 Polo Parkway
Apartment #103
Midland TX 79705
915-684-8811
Status: Complete  Status Date: 09/30/89  OERI No.: 009525
Patent Status: Disclosure Document Program
Development Stage: Concept Development
Technical Category: Industrial Processes
Recv by NIST: 04/29/83
Recom. by NIST: 05/15/84
Award Date: 04/22/85  Award Amount: $67,766 Grant No: FG01-85CE15213
Contract Period: 04/22/85 - 04/30/87
Summary: A grant of was awarded to prepare samples suitable for laboratory and field tests. The technology is in limited production.
DOE No: 0259  DOE Coord: G.K.Ellis
Title: Hydrostatic Support Sleeve and Rod - Gas Release Probe
Description: A mechanism for reducing or eliminating gas-lock problems with oil well pumps.

Inventor: William A Jones
State : CA

Contact: William A Jones
P O Box #621
Lotus, CA 95651
916-622-9171

Status: Complete  Status Date: 07/15/86  OERI No.: 009812

Patent Status : Disclosure Document Program
Development Stage : Prototype Test
Technical Category: Industrial Processes

Recv by NIST : 11/07/83
Recom. by NIST : 05/17/84
Award Date : 04/15/85  Award Amount: $ 81,220  Grant No: FG01-85CE15216
Contract Period: 04/15/85 - 04/04/86

Summary: A grant of $81,220 was awarded on April 15, 1985, to build and test a prototype in cooperation with oil producing companies. Project completed with average production increase of 24.5% and average energy saving of 44.3%. Inventor has licensed the technology.

***************************************************************************

DOE No: 0260  DOE Coord: G.K.Ellis
Title: Method and Apparatus for Handling and Dry Quenching Coke
Description: Method and apparatus for handling and dry quenching coke which is pollution free, producing higher yields of quality coke with a recovery means of sensible heat for a useful purpose.

Inventor: Edward S Kress
State : IL

Contact: Gene C Carpenter
227 Illinois Street
Brimfield IL 61517
309-446-3395

Status: Complete  Status Date: 08/06/87  OERI No.: 009736

Patent Status : Patent # - 4285772
Development Stage : Production & Marketing
Technical Category: Industrial Processes

Recv by NIST : 10/03/83
Recom. by NIST : 05/24/84
Award Date : 05/31/85  Award Amount: $ 57,773  Grant No: FG01-85CE15227
Contract Period: 05/31/85 - 08/06/87

Summary: A grant was awarded to build and test a prototype, which has been successfully tested and put in operation. As part of a $92 cleanup of Bethlehem Steel's Sparrows Point plant in Baltimore, MD, the installation of a $15 million Kress/coke-quenching system will be completed by October, 1991. Major benefits are anticipated in reduced maintenance requirements, increased yield per ton of coal treated, increased energy-saving from the hot coke, improved coke quality, and increased coke oven productivity.
DOE No: 0261    DOE Coord: G.K.Ellis
Title:        A New Apparatus for Making Asphalt Concrete
Description: An asphalt concrete manufacturing process that reduces energy requirements by recovering the latent heat of vaporization from the moisture removed during the manufacturing process and eliminates air pollution by using modern heat transfer methods.
Inventor:    Paul E Bracegirdle
State:       PA
Contact:     Paul E Bracegirdle
Status:      Other Assistance    Status Date: 09/17/85    OERI No.: 009690
Patent Status : Patent # - 4378162 and others
Development Stage : Production Engineering
Technical Category: Industrial Processes
Recv by NIST : 09/06/83
Recom. by NIST : 05/24/84
Summary:     Inventor licensed his technology to a foreign company. There is no further action required of DOE.

DOE No: 0262    DOE Coord: J.Aellen
Title:        Energy Saving Pump and Pumping System
Description: A centrifugal pump and pumping system that automatically provide recirculating flow at low output flows when pump cooling is needed and that recovers hydraulic energy in response to reduced output flows.
Inventor:    Kai-Chih Cheng
State:       WA
Contact:     Kai-Chih Cheng
             Innovative Tech Laboratory
             2339 Davison Avenue
             Richland WA 99336
             509-582-2660
Status:      Complete    Status Date: 09/16/86    OERI No.: 009691
Patent Status : Patent # - 4396347
Development Stage : Working Model
Technical Category: Miscellaneous
Recv by NIST : 09/06/83
Recom. by NIST : 06/20/84
Award Date : 04/17/85    Award Amount: $ 85,837 Grant No: FG01-85CE15207
Contract Period: 04/17/85 - 09/16/86
Summary:     A grant was awarded on to build and test the proposed pump.
DOE No: 0263   DOE Coord: J.Aellen
Title: Method for Reconditioning Rivetless Chain Links
Description: An upsetting process used to recondition chain links of the type used on industrial conveyors.
Inventor: William Tunderman   Contact: William Tunderman
State: IL
Status: No DOE Support   Status Date: 09/18/85   OERI No.: 009849
Patent Status: Patent # - 4229962
Development Stage: Limited Production/Marketing
Technical Category: Industrial Processes
Recv by NIST: 10/03/83
Recom. by NIST: 06/22/84
Summary: Inventor received an award to conduct a market survey from the State of Illinois. Further assistance will be considered by DOE at the completion of the market survey.

DOE No: 0264   DOE Coord: J.Aellen
Title: Desulfurization of Coal
Description: A process for the selective wet oxidation of the sulfur content of high sulfur coal into sulfur trioxide or other use in order to produce a low sulfur coal for the slurry pipeline transport or other use.
Inventor: Donald F Othmer   Contact: Agit Chowdhury
State: NY
Zimpro. Incorporated
Military Road
Rothschild WI 54474
715-359-7211
Status: Complete   Status Date: 06/02/86   OERI No.: 009202
Patent Status: Patent # - 4251277
Development Stage: Engineering Design
Technical Category: Industrial Processes
Recv by NIST: 11/09/82
Recom. by NIST: 06/22/84
Award Date: 07/03/85   Award Amount: $ 71,244 Grant No: FG01-85CE15206
Contract Period: 07/03/85 - 06/02/86
Summary: A grant was awarded to perform laboratory tests for desulfurization of coal by Zimpro, Inc., located in Wisconsin.

DATE: 30 SEPTEMBER 1990
DOE No: 0265  DOE Coord: G.K.Ellis
Title: Flozone method and Apparatus for Direct Application of Treatment Liquid to Growing Vegetation
Description: A new type of tractor-mounted applicator that wipes herbicide onto growing weeds.
Inventor: John W Richardson  Contact: John W Richardson  J Sherman Richardson
State: LA  Route Three, Box #81  Colfax, LA 71417  318-627-9171
Status: Complete  Status Date: 09/30/89  OERI No.: 009918
Development Stage: Prototype Development
Technical Category: Industrial Processes
Recv by NIST: 01/06/84  Recom. by NIST: 07/18/84
Award Date: 07/15/86  Award Amount: $113,417  Grant No: FG01-85CE15217
Contract Period: 07/15/86 - 09/23/88
Summary: A grant was awarded to build and test a prototype. Inventor was given an additional award in view of some unanticipated development problems encountered. A production prototype was completed and is in the market place. Compared to the alternative technologies, Flozone's cost is less than half the cost for the wick method and about one-fifth the cost of overtop spray. Inventor is being helped to find licensing or joint venture opportunity.

DOE No: 0266  DOE Coord: J.Aellen
Title: Energy Conversion Method
Description: A novel "Heat Pump" using engine-driven compressor and steam ejectors to compress low pressure steam to more useful levels.
Inventor: Dan Egosi  Contact: Dan Egosi
Country: Israel
Status: Other Assistance  Status Date: 09/13/85  OERI No.: 009582
Patent Status: Patent # - 4282070
Development Stage: Concept Development
Technical Category: Buildings, Structures & Components
Recv by NIST: 01/06/83  Recom. by NIST: 08/22/84
Summary: Inventor needs licensing help. DOE sent him names of appropriate companies in the U.S. to be contacted for licensing.
DOE No: 0267  DOE Coord: J.Aellen
Title: Integrated Gasification of Coal, Municipal Solid Wastes and Sludge
Description: Hardware and a process for gasifying coal, solid wastes and sewage sludge.
Inventor: Shang-I Cheng
State: NJ
Contact: Shang-I Cheng
Seventeen Woodsend Drive
Matawan NJ 07747
212-254-6300
Status: Complete
Status Date: 06/09/87
OERI No.: 009565
Patent Status: Patent # - 4357713
Development Stage: Prototype Development
Technical Category: Industrial Processes
Recv by NIST: 05/23/83
Recom. by NIST: 08/22/84
Award Date: 05/10/85 Award Amount: $ 70,000 Grant No: FG01-85CE15222
Contract Period: 05/10/85 - 06/09/87
Summary: A grant was awarded to perform laboratory tests, computer simulation and preliminary design.

**************************

DOE No: 0268  DOE Coord: J.Aellen
Title: Apparatus for Enhancing Chemical Reactions
Description: A process for using ultrasonic energy to enhance chemical reactions and extraction processes.
Inventor: Harold T Sawyer
State: CA
Contact: Harold T Sawyer
845 Via de la Paz
Pacific Palisades CA 92663
213-459-3020
Status: Complete
Status Date: 05/01/87
OERI No.: 009794
Patent Status: Patent # - 4369100 and others
Development Stage: Prototype Test
Technical Category: Fossil Fuels
Recv by NIST: 10/31/83
Recom. by NIST: 08/22/84
Award Date: 05/02/86 Award Amount: $ 75,402 Grant No: FG01-86CE15263
Contract Period: 05/02/86 - 05/01/87
Summary: An award was granted to build a model and have it tested at the University of Utah.
DOE No: 0269  
Title: Refrigerant Accumulator and Charging Apparatus
Description: An accumulator-charger installed in the suction line of a vapor-compression refrigeration unit. It provides for accumulation of liquid refrigerant/oil thereby preventing liquid refrigerant from being drawn into the compressor, and intended to prevent overcharging or undercharging the refrigerant system.

Inventor: Richard J Avery, Junior  
State: TX
Contact: Richard J Avery, Junior
Status: Analysis  
Status Date: 07/15/86  
OERI No.: 009971

Development Stage: Limited Production/Marketing
Technical Category: Buildings, Structures & Components

Recv by NIST: 02/07/84
Recom. by NIST: 08/30/84

Summary: Recommendation under consideration by DOE. Inventor attended commercialization workshop Leesburg, VA. The technology is being marketed by other parties.

*******************************************************************************
DOE No: 0270  
Title: Method of Energy Recovery for Wastewater Treatment
Description: A process and apparatus to recover available hydraulic energy for wastewater aeration by using a specially designed hydraulic gas compressor.

Inventor: Shih-Chih Chang  
State: WA
Contact: Shih-Chih Chang
2339 Davison Avenue
Richland WA 99352
509-582-2664

Status: Complete  
Status Date: 04/05/85  
OERI No.: 009767

Patent Status: Disclosure Document Program
Development Stage: Engineering Design
Technical Category: Industrial Processes

Recv by NIST: 10/13/83
Recom. by NIST: 09/07/84
Award Date: 04/05/85  
Award Amount: $65,055  
Grant No: FG01-85CE15210
Contract Period: 04/05/85 - 09/23/88

Summary: A grant was awarded to optimize the variables in a bench-scale test set-up. The inventor has prepared and instrumented this test set-up. He has conducted tests to determine optimum process variables.
DOE No: 0271    DOE Coord: G.K. Ellis
Title: Hydrogen Storage System
Description: A new geometric design hydrogen storage system for rapid heat cycling, using metal hydride systems in finned tubes.
Inventor: William B Retallick
State: PA
Contact: William B Retallick
1432 Johnny's Way
West Chester PA 19380
215-399-1371
Status: Complete    Status Date: 07/15/86    OERI No.: 009734

Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Miscellaneous
Recv by NIST: 10/04/83
Recom. by NIST: 09/26/84
Award Date: 06/21/85    Award Amount: $ 50,338 Grant No: FG01-85CE15230
Contract Period: 06/21/85 - 12/20/85
Summary: A grant was awarded to build and test a prototype storage system. Results were encouraging, prompting new research initiative. EPRI is presently actively sponsoring the technology, and seeks to transfer it to industry. Inventor has recently obtained DOE/SBIR Phase I support as a spinoff of this invention.

DOE No: 0272    DOE Coord: P.M. Hayes
Title: V-Plus System
Description: A method to cool lubricating oil in a positive displacement rotary screw compressor. A variable speed pump injects liquid refrigerant into the compressor discharge line.
Inventor: Robert M Roeglin
State: WI
Contact: Robert M Roeglin
2217 South First Street
Milwaukee WI 53207
414-744-0111
Status: Complete    Status Date: 12/31/88    OERI No.: 009730

Patent Status: Patent # - 4275570
Development Stage: Production & Marketing
Technical Category: Buildings, Structures & Components
Recv by NIST: 09/14/83
Recom. by NIST: 09/27/84
Award Date: 02/24/87    Award Amount: $149,986 Grant No: FG01-87CE15245
Contract Period: 02/24/87 - 12/31/88
Summary: Grants were awarded to: 1) to test the lubricant cooling system at the Herrick Laboratory at Purdue University and 2) to concurrently test DOE #284 Atomized Oil-Injected Rotary Screw Compressors. Test results were inconclusive due to the low oil flow rate used. The V-Plus System is commercially available from Viltes Manufacturing Corporation.
DOE No: 0273  DOE Coord: P.M.Hayes
Title: Open Cycle Latent Heat Engine
Description: A novel engine that uses relatively low temperature water as a heat source.

Inventor: Julius Czaja  Contact: Julius Czaja
State: NY
Status: No DOE Support  Status Date: 09/13/85  OERI No.: 009866

Patent Status: Patent # - 4106294
Development Stage: Concept Development
Technical Category: Combustion Engines & Components

Recv by NIST: 12/07/83
Recom. by NIST: 09/27/84

Summary: DOE had two meetings and several telephone conversations with the inventor. He cannot decide what course of action to follow. No work proposal has been submitted by the inventor.

******************************

DOE No: 0274  DOE Coord: T.M.Levinson
Title: Flexible Lighting - Fluorescent Lighting Operating at Radio Frequency
Description: A lighting system consisting of electrodeless gas- containing capsules, strung in a clear plastic tubular jacket. The capsules are excited by standing waves produced by a radio frequency generator.

Inventor: Nathan E Passman  Contact: Nathan E Passman
State: CO
Illuminating Technology Corp
2516 Forty-Ninth Street
Unit Six
Boulder CO 80301
303-440-4486

Status: Complete  Status Date: 05/28/87  OERI No.: 007911
Patent Status: Patent # - 3157823 and others
Development Stage: Production & Marketing
Technical Category: Miscellaneous

Recv by NIST: 12/31/80
Recom. by NIST: 09/28/84
Award Date: 09/30/85  Award Amount: $ 79,590 Grant No: FG01-85CE15244
Contract Period: 09/30/85 - 09/29/86

Summary: A one-year grant was awarded to design, build, and demonstrate the unique lighting system. Bridge structures and coal mine passageways will be the first two applications.
DOE No: 0275  
DOE Coord: J.Aellen  
Title: Low Head - High Volume Pump  
Description: A low-head, high volume double-acting piston pump for use in wind-driven water pumping stations.  
Inventor: Don E Avery  
State : HI  
Contact:  
Don E Avery  
45-437 Akimala  
Kaneohe HI 96744  
808-247-1909  
Status: Complete  
Status Date: 06/03/87  
OERI No.: 010115  
Patent Status : Disclosure Document Program  
Development Stage : Prototype Test  
Technical Category: Miscellaneous  
Recv by NIST : 04/23/84  
Recom. by NIST : 10/15/84  
Award Date : 06/04/86  
Award Amount: $ 56,325 Grant No: FG01-86CE15278  
Contract Period: 06/04/86 - 06/03/87  
Summary: A one-year, $56,325 grant was issued to design and demonstrate a low-head, high-volume pump. The County of Maui in Hawaii is cost-sharing. See recommendation #301 for related work. First season test proved concept. Winter 1986, tested 2nd generation product. Present throughput rate un economical in urban test. Device installed and working successfully on U. S. Fish and Wildlife bait pond in Hawaii. Grant work not completed. No final report available.  

DOE No: 0276  
DOE Coord: J.Aellen  
Title: Gas Concentration Cells as Converters of Heat into Electrical Energy  
Description: A system for using gas concentration cells to convert waste heat directly into electricity through heat driven electrochemical reactions.  
Inventor: Robert E Salomon  
State : PA  
Contact:  
Robert E Salomon  
Chemistry Department  
Temple University  
Philadelphia PA 19122  
215-787-7125  
Status: Complete  
Status Date: 09/30/87  
OERI No.: 009713  
Patent Status : Not Applied For  
Development Stage : Concept Development  
Technical Category: Fossil Fuels  
Recv by NIST : 09/27/83  
Recom. by NIST : 10/25/84  
Award Date : 06/01/85  
Award Amount: $ 79,957 Grant No: FG01-85CE15218  
Contract Period: 06/01/85 - 09/30/87  
Summary: A grant of $79,957 was awarded on June 1st, 1985, to Temple University for building and testing a prototype model.
DOE No: 0277  DOE Coord: J.Aellen

Title: Electronic Conveyor Control Apparatus

Description: Electronic conveyor control, U.S. Patent #4,372,439 dated February 8, 1983, describes an automatic start/stop system for conveyor belts. Tests in three post offices over two 30 day periods (with and without the control) show a 50% reduction in energy used to drive the belts. No proposal submitted.

Inventor: Guy C Dempsey  Contact: Smart Technologies, Inc
State: VA

Status: No DOE Support  Status Date: 09/30/90  OERI No.: 010221

Patent Status: Patent # - 4372439
Development Stage: Limited Production/Marketing
Technical Category: Industrial Processes

Recv by NIST: 06/08/84
Recom. by NIST: 11/23/84
Summary: No proposal received.

DOE No: 0278  DOE Coord: P.M.Hayes

Title: Complete System for Large Solar Water Heating and Storage

Description: An integrated system of solar collection and thermal storage for service water heating. It is a large-scale water heating system utilizing a heat pipe arrangement to extract thermal energy from an air-based solar collector.

Inventor: James M Stewart  Contact: James M Stewart
State: SC

Status: Complete  Status Date: 08/07/87  OERI No.: 009238

Patent Status: Patent # - 4340033 and others
Development Stage: Production Engineering
Technical Category: Direct Solar

Recv by NIST: 11/23/82.
Recom. by NIST: 11/29/84
Award Date: 06/27/85  Award Amount: $ 71,581  Grant No: FG01-85CE15223
Contract Period: 06/27/85 - 06/26/87
Summary: A grant of $71,581 was awarded on June 27th, 1985, to build and test a prototype solar water heating system. Grant objectives were successfully completed. Technology featured in the NASA Spinoff '88 publication.
DOE No: 0279  DOE Coord: P.M.Hayes
Title: Method and Means for Preventing Frost Damage to Crops
Description: A mobile machine for preventing frost damage to crops by taking in warmer air from above crop level, heating the air slightly with a burner, and blowing the air horizontally through the crops at low level.
Inventor: Douglas R Reich
State : FL
Status: Complete  Status Date: 08/07/87  OERI No.: 009638
Patent Status : Patent # -
Development Stage : Working Model
Technical Category: Industrial Processes
Recv by NIST : 01/29/83
Recom. by NIST : 11/29/84
Award Date : 08/26/85  Award Amount: $ 74,280 Grant No: FG01-85CE15231
Contract Period: 08/26/85 - 08/07/87
Summary: A grant of $74,280 was awarded on August 26th, 1985, to fabricate, test and evaluate a new prototype. Field tests were conducted in conjunction with the University of Florida. The inventor leased a 7800 square foot production facility and has had sales in excess of $3 million.

DOE No: 0280  DOE Coord: J.Aellen
Title: Down Hole and Above Ground Resistance Heating for Paraffin Elimination
Description: A method for removing paraffin from down-hole oil well tubing by use of resistance heating induced in the tubing to heat and melt the paraffin.
Inventor: Andrew W Marr, Junior
State : OK
Status: Complete  Status Date: 09/22/86  OERI No.: 009509
Patent Status : Patent # - 4303128 and others
Development Stage : Prototype Test
Technical Category: Fossil Fuels
Recv by NIST : 04/19/83
Recom. by NIST : 11/30/84
Award Date : 08/28/85  Award Amount: $ 58,286 Grant No: FG01-85CE15220
Contract Period: 08/28/85 - 09/22/86
Summary: A grant of $58,286 was awarded on August 28, 1985.
DOE No: 0281  DOE Coord: J.Aellen
Title: Sun Synchronous Solar Powered Refrigerator
Description: Photovoltaic powered refrigerator. Key features are durability, good insulation, efficient vapor/compression cycle, thermal storage, low cost, and sun synchronous operation without the use of batteries.
Inventor: Arthur D Sams  Contact: Arthur D Sams
State : CA  Polar Products
         2908 Oregon Court, I-11
         Torrance, CA 90503
         213-320-3514
Status: Complete  Status Date: 11/12/86  OERI No.: 010256
Patent Status : Not Applied For
Development Stage : Prototype Development
Technical Category: Buildings, Structures & Components
Recv by NIST : 07/02/84
Recom. by NIST : 12/18/84
Award Date : 08/12/85  Award Amount: $ 69,415 Grant No: FG01-85CE15219
Contract Period: 08/12/85 - 12/11/86
Summary: A grant of $69,415 was awarded on August 12th, 1985, to build and test a prototype. Recipient contributed $24,960 in addition to the grant.

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DOE No: 0282  DOE Coord: J.Aellen
Title: Insulated Siding
Description: An insulated siding for use on houses. Both vinyl and aluminum siding are fabricated with urethane foam averaging 1/2" thick and lined with aluminum foil backing.
Inventor: Eugene Tippmann  Contact: Robert J Koester
State : IN  Ball State University
         Ctr for Energ Res & Ed Svcs
         Muncie, IN 47306
         317-285-1135
Status: Complete  Status Date: 09/30/86  OERI No.: 010002
Patent Status : Patent # -
Development Stage : Prototype Development
Technical Category: Buildings, Structures & Components
Recv by NIST : 02/28/84
Recom. by NIST : 12/18/84
Award Date : 08/29/85  Award Amount: $ 57,798 Grant No: FG01-85CE15240
Contract Period: 08/29/85 - 09/30/86
Summary: A grant of $57,798 was awarded on August 29th, 1985, to Ball State University to build and test prototype insulated sidings.
DOE No: 0283 DOE Coord: P.M.Hayes

Title: Aluminum Roofing Chips

Description: A reflective coating for application to built-up roofing. Aluminum chips are spray-applied to surfaces with good adhesion.

Inventor: Tom Atterbury
State : OH

Contact: Donald Cullen
Transmet Corporation
4290 Perimeter Drive
Columbus OH 43228
614-276-5522

Status: Complete Status Date: 08/07/87 OERI No.: 010182


Recv by NIST : 05/17/84
Recom. by NIST : 12/18/84
Award Date : 06/27/85 Award Amount: $ 78,878 Grant No: FG01-85CE15232
Contract Period: 06/27/85 - 02/01/87

Summary: A grant of $78,878 was awarded on June 27th, 1985, to optimize the size, shape and composition of the aluminum roofing chip system. Tests showed 30-40% energy saving in summer due to the high reflectivity of the Al chips and 10% savings in winter due to low emissivity. The product is gaining acceptance in the market. The company expects several million dollars in sales in 1990.

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DOE No: 0284 DOE Coord: P.M.Hayes

Title: Atomized Oil-Injected Rotary Screw Compressors

Description: An atomized oil-injection system to improve the power and volumetric efficiencies of the rotary compressors.

Inventor: Anthony N Fresco
State : NY

Contact: Anthony N Fresco
Post Office Box #734
Upton NY 11973
516-282-7214

Status: Complete Status Date: 12/31/88 OERI No.: 009662


Recv by NIST : 08/22/83
Recom. by NIST : 01/24/85
Award Date : 02/24/87 Award Amount: $149,986 Grant No: FG01-87CE15245
Contract Period: 02/24/87 - 12/31/88

Summary: A grant of $149,986 was awarded on February 24th, 1987, for two purposes: (1) to test the atomized oil injection concept for improved efficiency at Purdue University's Herrick Laboratory and (2) to test concurrently DOE #272, the V-Plus System. The oil injection system was found to improve the volumetric efficiency. Inventor seeking independent financial backing to prepare for licensing negotiation with manufacturers.
DOE No: 0285  DOE Coord: T.M. Levinson
Title: Novel Fluid Ring (F/R) Seal Systems for Railroad Axle Bearing Systems
Description: A lubricant seal for railroad car axle bearings, the seal having no direct frictional contact between rotating and non-rotating parts and depending on dynamic effects for sealing.

Inventor: Hermann Ernst
State: CT

Contact:
Hermann Ernst
Ernst Mechanical Devices
20 Crowley Drive
Old Saybrook CT 06475
203-722-5477

Status: Award
Status Date: 06/03/87
OERI No.: 010167

Patent Status: Not Applied For
Development Stage: Laboratory Test
Technical Category: Transportation Systems, Vehicles & Components

Recv by NIST: 05/10/84
Recom. by NIST: 01/25/85
Award Date: 06/03/87
Award Amount: $72,000
Grant No: FG01-87CE15334
Contract Period: 06/03/87 - 06/01/90

Summary: A $72,000 grant was awarded on June 3, 1987, to design a fluid-ring seal and test it in actual operation on a Burlington Northern railcar. The testing was successful. Discussions regarding licensing this technology are currently underway with an American Manufacturer of railroad wheel bearings.

DOE No: 0286  DOE Coord: G.K. Ellis
Title: Use of Pulse-Jet for Atomization of Coal/Water Mixture
Description: Propane or a fuel gas is burned in a pulse-jet. The pulse-jet exhaust is used aerodynamically to atomize a stream of a coal-water mixture injected into a large steam boiler combustor.

Inventor: Momtaz N Mansour
State: MD

Contact: Momtaz N Mansour

Status: Award
Status Date: 03/14/86
OERI No.: 010313

Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Buildings, Structures & Components

Recv by NIST: 08/02/84
Recom. by NIST: 01/25/85

Summary: Inventor received contract from Pittsburgh Energy Technology Center, a DOE laboratory. No further action by ERIP necessary.
DOE No: 0287    DOE Coord: J.Aellen
Title:         Automatic Variable Pitch Marine Propeller
Description:  A variable geometry marine propeller having the blades pivoted and balanced so as to automatically adjust propeller pitch, diameter, and basic area ratio in response to shaft speed and hydrodynamic load, thereby enabling the driving engine to function at optimum RPM and fuel efficiency over a broad range of hull speeds and ladings.

Inventor: Don J Marshall
State : MD
Contact: Don J Marshall
        1087 Rodgers Road
        P O Box #159
        Churchton MD  20733
        301-867-2135
Status: Complete
Status Date: 12/15/87  OERI No.: 010259
Patent Status : Patent # - 4297079 and others
Development Stage : Prototype Test
Technical Category: Transportation Systems, Vehicles & Components

Recy by NIST : 06/26/84
Recom. by NIST : 01/25/85
Award Date : 09/06/85  Award Amount: $ 41,593 Grant No: FG01-85CE15243
Contract Period: 09/06/85 - 12/15/87

Summary: A grant of $41,593 was awarded on September 6, 1985, to build and test the proposed propeller. The test took place at Mississippi State University in cooperation with Sea Grant Advisory Service.

DOE No: 0288    DOE Coord: G.K.Ellis
Title:         Dickinson Pure Air Combustion (DIPAC) and Modified DIPAC (MODIPAC)
Description:  A method of burning coal or coal/water/mixture at high pressure without resultant air pollution.

Inventor: Norman L Dickinson
State : CA
Contact: Norman L Dickinson
Status: Decision Phase
Status Date: 08/06/87  OERI No.: 010307
Patent Status : Patent # - 4380960 and others
Development Stage : Engineering Design
Technical Category: Buildings, Structures & Components

Recy by NIST : 07/23/84
Recom. by NIST : 01/30/85
Summary: Recommendation under consideration by DOE. Inventor attended Commercialization Planning workshop.
DOE No: 0289  
DOE Coord: P.M. Hayes

Title: An Earthquake Barrier

Description: A concept to absorb the energy of an earthquake with bilinear force-deflection devices at the foundation of a building, thereby providing positive protection against inelastic distortions that cause building damage. This concept is claimed to avoid damage to the buildings during an earthquake and save human life.

Inventor: Marc S Caspe  
Contact: Marc S Caspe  
1640 Oakwood Drive  
San Mateo CA 94403  
415-573-8888

Status: Complete  
Status Date: 01/09/87  
OERI No.: 010311

Patent Status: Patent # - 3638377  
Development Stage: Engineering Design  
Technical Category: Buildings, Structures & Components

Recv by NIST: 07/26/84  
Recom. by NIST: 02/28/85  
Award Date: 01/10/86  
Award Amount: $68,749  
Grant No: FG01-86CE15250

Contract Period: 01/10/86 - 01/09/87

Summary: A grant of $37,004 was awarded January 10th, 1986, to perform a conceptual study of the earthquake barrier's configuration, preliminary design, construction schedule and estimate of construction costs for four retrofit projects. An additional $31,745 was awarded on July 28, 1986, to conduct shake table tests on the technology. Japanese architectural and construction firms have taken the lead in developing this type of technology.

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DOE No: 0290  
DOE Coord: J. Aellen

Title: Low Energy Ice Making Apparatus

Description: In this ice-making apparatus, ice is progressively formed on evaporator plates and harvested by a secondary condenser grid heated by the warm liquid refrigerant discharged by the primary water cooler condenser.

Inventor: Jerry Aleksandrow  
Contact: Greg Ross  
Universal Ice Machine Mfg  
900 Jorie Boulevard  
Suite Seventy-Two  
Oakbrook IL 60521  
312-990-1111

Status: Complete  
Status Date: 05/20/87  
OERI No.: 009807

Patent Status: Patent # - 4357807  
Development Stage: Limited Production/Marketing  
Technical Category: Miscellaneous

Recv by NIST: 11/03/83  
Recom. by NIST: 02/28/85  
Award Date: 05/21/86  
Award Amount: $62,500  
Grant No: FG01-86CE15258

Contract Period: 05/21/86 - 05/20/87

Summary: A $62,500 grant was awarded on May 21st, 1986, to compare efficiency and safety with comparable machines. The testing program was not started. No final report submitted.
DOE No: 0291  DOE Coord: G.K. Ellis
Title: Selective Zone Isolation for HVAC System
Description: A method for controlling air flow from a central HVAC system in a programmed way so that only selected zones within a building receive air flow during specified time periods
Inventor: Jerry Tartaglino
State: TX
Contact: Jerry Tartaglino
4911 West Hanover
Dallas TX 75209
214-357-2665
Status: Complete  Status Date: 10/08/88  OERI No.: 010331
Development Stage: Working Model
Technical Category: Buildings, Structures & Components
Recv by NIST: 08/02/84
Recom. by NIST: 02/28/85
Award Date: 04/15/86  Award Amount: $ 90,769 Grant No: FG01-86CE15261
Contract Period: 04/15/86 - 10/08/88
Summary: An award of $45,384 was granted on April 15th, 1986, to build and demonstrate a prototype. A Phase II grant was awarded on April 9, 1987, for $45,385 to build an advanced prototype. The prototype was completed and tested satisfactorily. The inventor is now actively marketing the invention and has it in production.

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DOE No: 0292  DOE Coord: J.Aellen
Title: Roof Construction Having Membrane and Photo Cells
Description: A building roof construction that also serves as a substrate, electrical interconnection, and protective covering for an array of flexible voltaic elements intended to generate electrical power for use in the building or elsewhere.
Inventor: Thomas F Francovitch
State: MD
Contact: Thomas F Francovitch
216 Circle Road
Pasadena MD 21122
301-437-3727
Status: Complete  Status Date: 08/25/86  OERI No.: 010297
Development Stage: Laboratory Test
Technical Category: Direct Solar
Recv by NIST: 07/19/84
Recom. by NIST: 02/28/85
Award Date: 08/26/85  Award Amount: $ 40,130 Grant No: FG01-85CE15239
Contract Period: 08/26/85 - 08/25/86
Summary: A grant of $40,130 was awarded on August 26th, 1985, to perform laboratory tests on the roof membrane and photocells.
DOE No: 0293  
DOE Coord: J.Aellen

Title:  
"Therm-A-Valve" - Insulated Valve Coverings

Description:  
A solar powered system to keep critical flow control valves from freezing on gas wells during cold weather.

Inventor: Randell D Ball  
Contact:  
PFI, Inc  
128 Northwest 67th Street  
Oklahoma City OK 73116  
405-354-4584

Status: Complete  
Status Date: 03/31/90  
OERI No.: 010130

Development Stage: Limited Production/Marketing  
Technical Category: Fossil Fuels

Recv by NIST: 04/24/84  
Recom. by NIST: 03/29/85  
Award Date: 01/15/86  
Award Amount: $56,193  
Grant No: FG01-86CE15254

Summary:  
A grant for $56,193 was awarded on January 15th, 1986, to build and test prototype valve covers, first in the laboratory and then in the field, under actual conditions. No-cost grant extension for 1 year expired January 31, 1990. No final report.

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DOE No: 0294  
DOE Coord: G.K.Ellis

Title:  
Highway Power Patcher

Description:  
A portable self-propelled pavement patching machine which blows debris from a distressed area of pavement, mixes and applies an unheated crushed rock and asphalt patching material, and compacts the patch by means of a roller.

Inventor: Carl L Sterner  
Contact:  
Carl L Sterner  
Route Four, Box #372  
Bakersfield CA 93309  
805-589-3355

Status: Complete  
Status Date: 08/15/86  
OERI No.: 010077

Development Stage: Prototype Test  
Technical Category: Industrial Processes

Recv by NIST: 03/20/84  
Recom. by NIST: 03/29/85  
Award Date: 08/15/85  
Award Amount: $60,031  
Grant No: FG01-85CE15241

Summary:  
A grant of $60,031 was awarded on August 15, 1985, to build and test a self-propelled highway pavement patching machine. Mr. Sterner has received numerous inquiries about his machine from all over the U.S. and seeks to license the technology.
DOE No: 0295  DOE Coord: J. Aellen

Title: Improved Method of Electroplating Aluminum for Corrosion Resistance

Description: A method for electroplating ferrous metals with aluminum for improved corrosion resistance.

Inventor: J. Paul Pemsler  Contact: J. Paul Pemsler
State: MA  Castle Technology Corporation
       Fifty-Two Dragon Court
       Woburn MA 01801
       617-933-5634

Status: Complete  Status Date: 02/27/87  OERI No.: 010185

Patent Status  : Disclosure Document Program
Development Stage : Laboratory Test
Technical Category: Industrial Processes

Recv by NIST : 05/21/84
Recom. by NIST: 03/29/85
Award Date : 08/28/85  Award Amount: $69,000 Grant No: FG01-85CE15236
Contract Period: 08/28/85 - 02/27/87

Summary: A grant of $69,000 was awarded on August 28, 1985, to build and test a prototype.

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DOE No: 0296  DOE Coord: P. M. Hayes

Title: Shower Bath Economizer

Description: A heat exchanger installed at a shower-bath or tub drain which transfers heat from the drain water to the incoming cold water, thereby reducing the amount of energy required to heat the water.

Inventor: Raymond Hunter  Contact: Raymond Hunter
State: TN  Chattanooga TN 37404

Status: Complete  Status Date: 07/31/86  OERI No.: 009516

Patent Status  : Patent # - 4372372
Development Stage : Production Engineering
Technical Category: Buildings, Structures & Components

Recv by NIST : 04/26/83
Recom. by NIST: 03/29/85
Award Date : 02/01/86  Award Amount: $58,000 Grant No: FG01-86CE15251
Contract Period: 02/01/86 - 07/31/86

Summary: A grant of $58,000 was awarded on January 1st, 1986, for the final design and development of the shower bath economizer. Test results were not reported to DOE.
DOE No: 0297       DOE Coord: J.Aellen
Title:       Series (Two-Wire) V-Controller
Description: An electronic light dimmer for fluorescent lamps, that will mount in a single two-wired switch box without the need for re-wiring or replacing conventional lamp ballasts with "dimming" ballasts.
Inventor: E M Talbott
State: MD
Contact: Varigas Research, Inc
         P O Box #489
         1717 York Road
         Lutherville-Timonium MD  21093
         301-252-6230
Status: Complete    Status Date: 10/01/88    OERI No.: 010261
Development Stage: Concept Development
Technical Category: Buildings, Structures & Components
Recv by NIST: 07/05/84  Recom. by NIST: 03/29/85
Award Date: 08/19/85   Award Amount: $ 70,785 Grant No: FG01-85CE15233
Contract Period: 08/19/85 - 10/01/88
Summary: A grant of $51,180 was awarded on August 19th, 1985, to design and build a prototype. Tests will be conducted in phase II.

DOE No: 0298       DOE Coord: J.Aellen
Title:       Three Tenths Degree Kelvin Closed Cycle Refrigeration System
Description: Closed-cycle refrigeration system to provide cooling to 0.3 Kelvin. Does not consume helium or other liquid cryogens.
Inventor: David L Swartz
State: AZ
Contact: David L Swartz
         Cryosystems, Inc.
         1802 West Grant, Suite #122
         Tucson AZ 85745
         602-882-4628
Status: Complete    Status Date: 11/05/87    OERI No.: 010254
Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Buildings, Structures & Components
Recv by NIST: 06/28/84  Recom. by NIST: 04/19/85
Award Date: 04/05/86   Award Amount: $ 63,500 Grant No: FG01-85CE15248
Contract Period: 04/05/86 - 11/05/87
Summary: A grant of $63,500 was awarded on April 5th, 1986, to build and test a prototype.
DOE No: 0299 DOE Coord: G.K. Ellis

Title: Process for Using Cocurrent Contacting Distillation Column

Description: A new fractionator tray design which achieves higher distillation column output through high-velocity cocurrent vapor-liquid flow in the zones between the trays.

Inventor: William R Trutna
State: TX
Contact: William R Trutna
2213 Fenwood
Pasadena TX 77502
713-472-5098

Status: Complete Status Date: 09/30/88 OERI No.: 009873

Patent Status: Patent # - 4361469
Development Stage: Engineering Design
Technical Category: Industrial Processes

Summary: A grant of $74,192 was awarded on September 17, 1986, to build and demonstrate a workable prototype. Tests were completed satisfactorily at the University of Texas' Separation Center, showing a 30% improvement in separations efficiency. The inventor seeks to license the technology.

DOE No: 0300 DOE Coord: G.K. Ellis

Title: Casing Stabbing Apparatus

Description: A retrofittable hardware design for the rapid alignment of well casing sections during rig operations to prevent thread damage due to misalignment and cross threading.

Inventor: James McArthur
State: OK
Contact: James McArthur
Box Fifty
Tishomingo OK 73460
405-371-9223

Status: Complete Status Date: 07/31/87 OERI No.: 010194

Patent Status: Patent # - 4440220
Development Stage: Limited Production/Marketing
Technical Category: Fossil Fuels

Summary: A grant of $64,337 was awarded on July 18, 1986, to design, build and test a prototype. The prototype was completed and successfully tested. Inventor has sold the invention to Okie-Yoke, Inc., P. O. Box 105, Lindsay, OK 73052 (405/756-2188), which markets the invention as "Okie-Yoke". 
DOE No: 0301  DOE Coord: J.Aellen
Title:  Pump Control System for Windmills
Description: A mechanism for automatically controlling the stroke of wind-driven water pumps so as to match pump operation to the available wind energy.
Inventor: Don E Avery  State: HI
Contact: Don E Avery
45-437 Akimala Street
Kaneohe HI 96744
808-247-1909

Status: Complete  Status Date: 06/03/87  OERI No.: 010469
Patent Status: Patent # - 4392785
Development Stage: Limited Production/Marketing
Technical Category: Miscellaneous

Summary:
A $43,625 grant was issued to build, install and demonstrate a variable stroke pump control system for an EDA aquaculture project at Kealia Pond, Maalaea, Maui, Hawaii. The County of Maui is cost-sharing. See invention #275 for related work. Also installed in U.S. Fish and Wildlife bait pond. Grant work never completed. No final report available.

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DOE No: 0302  DOE Coord: J.Aellen
Title:  Carri-Cel Impact Breaker and Counterflow Impact Rock Breakers
Description: A vertical shaft impact rock breaker having a direct-drive vertical shaft motor and an impact rock breaker in which the thrown rock is directed back toward the impeller so that most rock breakage occurs during collisions of thrown and returning rock.
Inventor: John H Burk  State: CA
Contact: Phil Tippet
Carri-Cel, Inc
P O Box #4552
Cleveland TN 37311
615-489-1187

Status: Complete  Status Date: 09/28/88  OERI No.: 010539
Development Stage: Prototype Test
Technical Category: Industrial Processes

Summary:
A grant of $75,000 was awarded on September 29th, 1986, to build and test a prototype.
DOE No: 0303  DOE Coord: J.Aellen
Title: Battery Heating Device
Description: An automotive battery heating device which stores exhaust heat in a phase-change storage material and which includes the necessary heat exchangers and controls to transfer heat to the battery to facilitate cold weather starting.
Inventor: Nicholas Archer Sanders
State : VT
Contact: Nicholas Archer Sanders
Eleven Green Ridge Road
Route One, Box #175
Norwich VT 05015
802-649-3869
Status: Complete Status Date: 04/27/88 OERI No.: 010170
Patent Status : Patent # - 4258677
Development Stage : Prototype Test
Technical Category: Transportation Systems, Vehicles & Components
Recv by NIST : 05/11/84
Recom. by NIST: 05/31/85
Award Date : 02/28/86  Award Amount: $ 71,500 Grant No: FG01-86CE15257
Contract Period: 02/28/86 - 04/27/88
Summary: A grant of $71,500 was awarded on February 28th, 1986, to build and test a model. No final report has yet been received.

DOE No: 0304  DOE Coord: G.K.Ellis
Title: Exfoliated Graphite Fibers
Description: A new material, exfoliated graphite fibers, a novel form of composite fiber, and a method for producing them.
Inventor: Deborah D Chung
State : PA
Contact: Deborah D Chung
3812 Henley Drive
Pittsburgh PA 15235
412-578-2710
Status: Complete Status Date: 05/03/88 OERI No.: 010315
Development Stage : Laboratory Test
Technical Category: Miscellaneous
Recv by NIST : 07/31/84
Recom. by NIST: 05/31/85
Award Date : 09/30/86  Award Amount: $ 80,000 Grant No: FG01-86CE15282
Contract Period: 09/30/86 - 05/03/88
Summary: A grant awarded to fabricate and test the fiber composite material. The results showed a four-fold increase in loss factor compared to the plain fiber composite. It thus appears highly significant in various damping applications that are important in both military and civilian sector products. Spaulding Composites Company has licensed the technology and intends to market it widely. Use of such advanced composites, they estimate, in aircraft alone will more than quadruple in just three years.
DOE No: 0305  DOE Coord: J.Aellen
Title: Automatic Filter Network Protection, Failure Detection and Correction System and Method
Description: A flap valve to be used in fabric bag filter systems such as those used in coal-burning powerplants which automatically shuts off the flow of gas and flyash through ruptured filter bags.
Inventor: Harold L Bowman  Contact: Wade Wright
State : AR  Baltimore MD 21218  301-773-0614
Status: Complete  Status Date: 10/31/87  OERI No.: 010257
Patent Status : Patent # - 4356007
Development Stage : Production Engineering
Technical Category: Industrial Processes
Recv by NIST : 06/29/84  Recom. by NIST : 05/31/85  Award Date : 05/01/86  Award Amount: $ 72,072 Grant No: FG01-86CE15262
Contract Period: 05/01/86 - 10/31/87
Summary: A grant of $72,072 was awarded on May first, 1986, to build a model and to test efficiency. Testing program never completed because of legal problems. No final report has yet been received.

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DOE No: 0306  DOE Coord: T.M.Levinson
Title: An Efficiency Computer for Heated or Air Conditioned Buildings
Description: Microprocessor-based device continuously evaluates overall space-conditioning performance. Feedback is used to teach a new, useful concept of efficiency to building owners, occupants and maintenance personnel.
Inventor: John W Ackley, III  Contact: John W Ackley, III
State : CT  16 Church Street  Stonington CT 06378  203-535-2906
Status: Award  Status Date: 04/20/87  OERI No.: 010045
Patent Status : Not Applied For
Development Stage : Prototype Test
Technical Category: Buildings, Structures & Components
Recv by NIST : 02/17/84  Recom. by NIST : 06/28/85  Award Date : 04/20/87  Award Amount: $ 74,450 Grant No: FG01-87CE15318
Contract Period: 04/20/87 - 10/19/90
Summary: A $74,450 grant was awarded on April 20, 1987, to build and test a prototype device. Batelle Pacific Northwest Laboratory is assisting the inventor by providing data on commercial buildings in the Pacific Northwest and analyzing these data.
DOE No: 0307  DOE Coord: T.M. Levinson
Title: Vortex Generators for Aft Regions of Aircraft Fuselages
Description: A method for using small vortex generators at the aft end of aircraft fuselages, (particularly those with rear loading doors) to energize the flow in that region, reduce flow separation, and reduce form drag.
Inventor: Andrew Wortman
State : CA
Contact: Andrew Wortman
406 Alta Avenue
Santa Monica CA 90402
213-394-7332
Status: Complete
Status Date: 09/30/87
OERI No.: 010454
Development Stage : Concept Development
Technical Category: Transportation Systems, Vehicles & Components
Recv by NIST : 10/23/84
Recom. by NIST : 06/28/85
Award Date : 06/27/86  Award Amount: $ 69,307 Grant No: FG01-86CE15277
Contract Period: 06/27/86 - 09/30/87
Summary: A $69,307 grant was awarded on June 27, 1986, to design and conduct wind-tunnel tests on fuselage models of transport aircraft, utilizing the inventor's vortex generators. Based on wind-tunnel tests, overall drag reductions are expected to be 1 percent for a 747 and 2 percent for a C-5. This translated into annual operating cost reductions of about $130,000 for a Boeing 747.

DOE No: 0308  DOE Coord: J. Aellen
Title: Binary Azeotropic, Hot Gas, Fat Extraction Process
Description: A solvent extraction process for rendering animal wastes. Invention would use n-heptane to extract the fat and would be recycled. Solids recovered will be produced at lower temperatures than present processes.
Inventor: Jay Read
State : IN
Contact: Jay Read
Plymouth Fertilizer Co., Inc.
12092 Plymouth-Goshen Trail
Plymouth IN 46563
219-936-2144
Status: Complete
Status Date: 10/28/89
OERI No.: 010201
Development Stage : Engineering Design
Technical Category: Industrial Processes
Recv by NIST : 03/30/84
Recom. by NIST : 06/28/85
Award Date : 04/19/86  Award Amount: $ 65,000 Grant No: FG01-86CE15255
Contract Period: 04/19/86 - 10/28/89
Summary: A grant of $65,000 was awarded on April 19th, 1986, to construct a demonstration plant to produce high-quality animal protein and fat from carrion. Technology tested, unsuccessful due to uncontrollable foaming.
DOE No: 0309  DOE Coord: P.M.Hayes
Title: Process of Smelting with Submerged Burner
Description: A submerged burner for melting and refining metals. The design produces submerged combustion process resulting in a uniform oxidizing or reducing atmosphere circulating through the molten zone.
Inventor: Robert N Rose
State: CT
Contact: Robert C LeMay
Status: No DOE Support  Status Date: 09/30/89  OERI No.: 010351
Patent Status : Patent # - 4203761
Development Stage : Laboratory Test
Technical Category: Industrial Processes
Recv by NIST : 08/10/84
Recom. by NIST : 06/28/85
Summary: No request for assistance has been received.

DOE No: 0310  DOE Coord: G.K.Ellis
Title: Portable Wastewater Flow Metering Device
Description: A portable venturi type flowmeter for measuring liquid flow in sewers under either full flow or partial flow conditions.
Inventor: Robert M Hunter
State: MT
Contact: Robert M Hunter
320 South Wilson Avenue
Bozeman MT 59715
406-586-3905
Status: Complete  Status Date: 03/19/88  OERI No.: 010308
Development Stage : Laboratory Test
Technical Category: Industrial Processes
Recv by NIST : 07/27/84
Recom. by NIST : 07/31/85
Award Date : 09/19/86  Award Amount: $ 77,515 Grant No: FG01-86CE15298
Contract Period: 09/19/86 - 03/19/88
Summary: A grant of $77,515 was awarded on September 19th, 1986, to build and demonstrate a workable prototype. The prototype was completed and successfully tested. Final report has been received showing some significant results. Inventor seeks to license the technology.
DOE No: 0311  DOE Coord: J.Aellen
Title:  Auxiliary Truck Heater
Description:  A diesel fuel-fired heater used to heat truck engines prior to starting and also used to heat truck cabs.
Inventor:  Herbert D Easterly
Contact:  Herbert D Easterly
Route One, Box Sixty-Six
Crossville TN 38555
616-484-6665

Status: Award  Status Date: 09/11/89  OERI No.: 006675
Patent Status:  Patent # - 4192457
Development Stage:  Concept Definition
Technical Category:  Transportation Systems, Vehicles & Components
Recv by NIST:  03/26/80
Recom. by NIST:  07/31/85
Award Date:  09/11/89  Award Amount: $ 59,941  Grant No: FG01-89CE15348
Contract Period:  09/11/89 - 09/10/91
Summary:  Grant was awarded to the Tennessee Technical University to build and test a prototype model.

DOE No: 0312  DOE Coord: P.M.Hayes
Title:  The "Jones AWT", a Micro-Computer-Based Automatic Well Tester for Use of Producing Oil Wells
Description:  An automatic well tester for in-line automatic measurement of oil, gas and water produced by an oil well.
Inventor:  Ray L Jones
Contact:  Ray L Jones
c/o Pet Automation Syst Inc
325 South Hale Avenue
Fullerton CA 92631
714-773-4040

Status: Complete  Status Date: 08/31/87  OERI No.: 010368
Patent Status:  Patent # - 3911256
Development Stage:  Engineering Design
Technical Category:  Fossil Fuels
Recv by NIST:  08/22/84
Recom. by NIST:  08/09/85
Award Date:  03/10/86  Award Amount: $ 72,470  Grant No: FG01-86CE15252
Contract Period:  03/10/86 - 08/31/87
Summary:  A grant of $72,470 was awarded on March 10, 1986, to field test the oil-well testing system to determine and optimize the system performance. Inventor seeking joint venture relationship to manufacture and market the technology.
DOE No: 0313  
DOE Coord: P.M.Hayes  
Title: Process Controller for Stripper Oil Well Pumping Units  
Description: A programmable microprocessor control system that determines the optimum 
pumping speed of a beam oil well pump by comparing the wave form of current 
flow during each pumping cycle to a wave form stored in memory. Based on the 
results of the comparison, the controller either modifies the pumping speed or 
shuts the pump off for a given period of time. The device is primarily 
intended for stripper wells.  
Inventor: Frank J Madison II  
State : PA  
Contact: Frank J Madison II  
608 Hill Street  
Reynoldsburg PA 15851  
814-653-2155  
Status: Complete  
Status Date: 01/20/87  
OERI No.: 010425  
Patent Status : Not Applied For  
Development Stage : Concept Development  
Technical Category: Fossil Fuels  
Recv by NIST : 10/02/84  
Recom. by NIST : 08/13/85  
Award Date : 01/21/86  
Award Amount: $ 85,000 Grant No: FG01-86CE15253  
Contract Period: 01/21/86 - 01/20/87  
Summary: A grant of $85,000 was awarded on January 21st, 1986, to design, test and 
demonstrate a prototype of a process controller which maximizes production of 
beam-type pumping oil wells. Inventor test marketed the "OPC Model 100"; the 
product is improved and is available for purchase. A constant control device, 
"OPC Model 2000", will be available by the Summer of 1990.  

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DOE No: 0314  
DOE Coord: T.M.Levinson  
Title: Rolling Filter Apparatus  
Description: An air filtration system wherein a long filter mat is drawn in a zig-zag path 
across an air flow path to give multiple filtration passages of the air 
through the filter mat. The mat is continuously drawn from a large roll such 
that fresh filter surface is continuously fed through the filter chamber. The 
used mat is discarded.  
Inventor: Max Klein  
State : MA  
Contact: Max Klein  
64 Euclid Avenue  
Pittsfield MA 01201  
413-499-3351  
Status: Complete  
Status Date: 05/17/90  
OERI No.: 010734  
Patent Status : Patent # - 4394146  
Development Stage : Limited Production/Marketing  
Technical Category: Industrial Processes  
Recv by NIST : 03/15/85  
Recom. by NIST : 08/30/85  
Award Date : 08/18/86  
Award Amount: $ 67,500 Grant No: FG01-86CE15286  
Contract Period: 08/18/86 - 05/17/90  
Summary: A grant was issued to design, manufacture and operate a prototype filter 
apparatus to be put into demonstration, service. The grantee was to contribute 
$7,500 for the demonstration special engineering and marketing activities. The 
filtration material was put in shop classrooms in selected schools. The filter 
system was being monitored and evaluated by shop teachers for improved air 
quality. Results to date are promising from both an energy conservation and 
public health standpoint.
DOE No: 0315  DOE Coord: J.Aellen

Title: Method of Processing Biodegradable Organic Material

Description: A high-rate continuous biodegrading reactor using immobilized microbes for producing natural gas from a high-load waste system.

Inventor: Ralph A Messing  Contact: Ralph A Messing
State : NY  168 Scenic Drive, South
         Horseheads NY 14845
         607-739-7242

Status: Complete  Status Date: 12/31/87  OERI No.: 010446

Development Stage : Engineering Design
Technical Category: Other Natural Sources

Recv by NIST : 10/19/84
Recom. by NIST : 08/30/85
Award Date : 04/19/86  Award Amount: $ 75,000  Grant No: FG01-86CE15265
Contract Period: 04/19/86 - 12/31/87

Summary: A grant of $75,000 was awarded on April 19th, 1986, to build a portable demonstrator to be installed at Laprino Foods to be operated at their expense. Operation only partially successful. Inventor died before report could be written.

DOE No: 0316  DOE Coord: P.M.Hayes

Title: Thrust Impact Rock Splitter

Description: A rock-splitting device in which two or more splitting segments are positioned in a hole in the rock, and the segments are moved outward by a wedge driven by an impact force superimposed on a constant force.

Inventor: George B Clark  Contact: Terry Nixon
State : MO  Box #519
         Rolla MO 65401
         314-364-7747

Status: Complete  Status Date: 09/16/87  OERI No.: 010649

Patent Status : Patent # - 4072353
Development Stage : Concept Development
Technical Category: Industrial Processes

Recv by NIST : 02/28/85
Recom. by NIST : 08/30/85
Award Date : 06/17/86  Award Amount: $ 81,891  Grant No: FG01-86CE15268
Contract Period: 06/17/86 - 09/16/87

Summary: A grant of $81,891 was awarded on June 17th, 1986, to design a commercial prototype of the thrust impact rock splitter. Considering licensing or joint/venture options to get technology into the marketplace.
ENERGY RELATED INVENTIONS PROGRAM - BRIEF STATUS REPORT

DOE No: 0317  DOE Coord: J.Aellen
Title: Edge-Illuminated Multi-Junction (VMJ) Solar Cell
Description: An edge-illuminated vertical multi-junction photovoltaic cell to be operated with concentrators from about 200 to 1000 suns.
Inventor: Bernard L Sater  Contact: Bernard L Sater
State: OH  9007 Westlawn Boulevard
Status: Award  Olmstead Falls OH 44138
Date: 09/16/87
Award Status Date: 09/16/87  OERI No.: 004602
Technical Category: Direct Solar
Recv by NIST: 10/25/78  Award Date: 09/16/87  Award Amount: $80,000
Recom. by NIST: 08/30/85  Contract Period: 09/16/87 - 03/15/91
Summary: A $80,000 grant was awarded on September 30th, 1987.

DOE No: 0318  DOE Coord: J.Aellen
Title: Bi-Polar Electrode for Hall-Heroult Electrolysis
Description: A new design for a bi-polar electrode for Hall-Heroult electrolysis for aluminum production.
Inventor: Louis A Joo  Contact: Jim Gee
State: TN  Great Lakes Research Corp
Status: Complete  P.O. Box #1031
Date: 11/30/87  Elizabethtown TN 37643
Award Status Date: 11/30/87  OERI No.: 010523
Patent Status: Patent # - 4462889  Recv by NIST: 12/03/84
Development Stage: Concept Development  Recom. by NIST: 08/30/85
Technical Category: Industrial Processes  Award Date: 05/08/86
Award Amount: $76,078
Contract Period: 05/08/86 - 11/30/87
Summary: A grant of $76,078 was awarded on May 8th, 1986, to build a model electrode and test its efficiency. Inventor seeking additional development funding.
DOE No: 0319  DOE Coord: J.Aellen

Title: Removal of Hydrogen Sulfide from a Gas Stream

Description: A non-reactive adsorption/regeneration process for removing hydrogen sulfide from a gas stream.

Inventor: Shao-E Tung
State: MA

Contact: Shao-E Tung
Ninety-One Blake Road
Brookline MA 02146
617-589-2823

Status: Complete  Status Date: 01/31/90  OERI No.: 010530

Development Stage: Engineering Design
Technical Category: Industrial Processes

Recv by NIST: 12/07/84
Recom. by NIST: 09/23/85
Award Date: 07/30/86  Award Amount: $85,400  Grant No: FG01-86CE15271
Contract Period: 07/30/86 - 01/31/90

Summary: A grant of $85,400 was awarded on July 30th, 1986. Received additional support under Program Opportunity Notice from Pittsburgh Energy Technology Center.

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DOE No: 0320  DOE Coord: J.Aellen

Title: Coal Gasification with Carbon Dioxide and Lime Recycling

Description: A coal gasification process that uses air instead of oxygen to produce a nitrogen-free, 400 BTU per cubic foot gas by use of recycled carbon dioxide and lime.

Inventor: Shang-I Cheng
State: NJ

Status: No DOE Support Status Date: 09/30/90  OERI No.: 010638

Patent Status: Patent # - 4448588 and others
Development Stage: Prototype Test
Technical Category: Fossil Fuels

Recv by NIST: 02/25/85
Recom. by NIST: 09/23/85

Summary: No DOE support.
DOE No: 0321  DOE Coord: G.K. Ellis

Title: Process for Recovery of Oil from Oil Shale Simultaneously Producing Hydrogen

Description: A shale oil recovery process that also gasifies coke in the spent shale to produce hydrogen and carbon dioxide in a water gas shift reaction.

Inventor: Philip H Gifford II  Contact: Philip H Gifford II
State : CO  Status Date: 09/24/85  OERI No.: 010279

Patent Status : Patent # - 4001105 and others
Development Stage : Laboratory Test
Technical Category: Fossil Fuels

Recv by NIST : 07/18/84  Recom. by NIST : 09/24/85

Summary: The inventor has been unable to submit a definitive statement of work that DOE can support.

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DOE No: 0322  DOE Coord: E.P. Levine

Title: Electrical Resistance Cooking Apparatus with Automatic Circuit Control

Description: A method of using high frequency energy to cook meat for fast food vendors. The key feature is the lack of need for a vent.

Inventor: Maurice W Lee, Junior  Contact: Maurice W Lee, Junior
State : OK  Post Box Twenty-Six

Status: Complete  Status Date: 02/17/87  OERI No.: 010139

Development Stage : Limited Production/Marketing
Technical Category: Miscellaneous

Recv by NIST : 04/30/84  Recom. by NIST : 09/30/85
Award Date : 02/17/87  Award Amount: $ 75,000 Grant No: FG01-87CE15317
Contract Period: 02/17/87 - 08/16/90

Summary: A grant was awarded to develop the second generation cooker with 50% reduction in cost/price.
DOE No: 0323  DOE Coord: G.K.Ellis
Title: Rolling Mill for Reduction of Moisture Content in Waste Material
Description: A mechanical device to remove some of the water from wood waste fuel. The previously pulverized wood is passed between two rollers, and water is pressed from the wood.
Inventor: David M Wilder
State: OR
Contact:
David M Wilder
82061 Lost Valley Lane
Dexter OR 97431
503-937-3537
Status: Complete  Status Date: 12/24/88  OERI No.: 010613
Patent Status: Patent # - 4436028
Development Stage: Prototype Test
Technical Category: Industrial Processes
Recv by NIST: 02/07/85
Recom. by NIST: 09/30/85
Award Date: 06/24/86  Award Amount: $76,396 Grant No: FG01-86CE15280
Contract Period: 04/24/86 - 12/24/88
Summary: A grant was awarded on April 24th, 1986, in the amount of $76,396 to build and demonstrate a workable prototype. The prototype has been completed and was satisfactorily tested in participation with an interested company.

DOE No: 0324  DOE Coord: J.Aellen
Title: Method and Composition for Enhancement of Mycorrhizal Development by Foliar Fertilization
Description: A method for increasing plant growth by means of a foliar fertilization process intended to increase the infection of plant roots by mycorrhizal fungi, thus increasing their uptake of water and nutrients from the soil.
Inventor: H. E. Garrett
State: MO
Contact:
H. E. Garrett
University of Missouri, Columbia
Sch of Forestry, Fish & Wldlf
I-30 Agriculture Building
Columbia MO 65211
314-882-3647
Status: Complete  Status Date: 08/19/89  OERI No.: 010684
Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Industrial Processes
Recv by NIST: 02/28/85
Recom. by NIST: 09/30/85
Award Date: 08/20/86  Award Amount: $75,000 Grant No: FG01-86CE15270
Contract Period: 08/20/86 - 08/19/89
Summary: A $75,000 grant was awarded on August 20th, 1986, to perform laboratory tests and field demonstration.
DOE No: 0325  
DOE Coord: P.M.Hayes  

Title: Low Cost, Low Energy Machine and Method for Continuous Casting Non-Ferrous Strip and Composites  
Description: A process for continuous casting of non-ferrous and composite materials into thin strips.  
Inventor: Forrest M Palmer  
State: SC  
Contact:  
Forrest M Palmer  
Thirty-One Towhee Road  
Hilton Head SC 29928  
803-681-8887  

Status: Complete  
Status Date: 01/31/88  
OERI No.: 009934  

Development Stage: Laboratory Test  
Technical Category: Industrial Processes  
Recv by NIST: 01/12/84  
Recom. by NIST: 09/30/85  
Award Date: 08/08/86  
Award Amount: $ 47,357  
Grant No: FG01-86CE15285  
Contract Period: 08/08/86 - 01/31/88  

Summary: A grant of $47,357 was awarded on August 8, 1986, to test the feasibility and operating characteristics of Mr. Palmer's continuous casting method. Additional testing is necessary to demonstrate the technical feasibility of the process.

DOE No: 0326  
DOE Coord: G.K.Ellis  

Title: A Mechanical Stemming Device for Use in Explosive Loaded Blast Holes  
Description: A conical wedge used to improve confinement of an explosive charge to a drilled hole, increasing the rock fragmentation performance of the explosive.  
Inventor: Paul N Worsey  
State: MO  
Contact:  
F Terry Nixon  
Route Four, Box #519  
Rolla MO 65401  
314-364-7747  

Status: Complete  
Status Date: 03/21/88  
OERI No.: 010667  

Patent Status: Not Applied For  
Development Stage: Concept Development  
Technical Category: Miscellaneous  
Recv by NIST: 02/28/85  
Recom. by NIST: 10/31/85  
Award Date: 09/22/86  
Award Amount: $ 78,251  
Grant No: FG01-86CE15297  
Contract Period: 09/22/86 - 03/21/88  

Summary: A grant of $78,251 was awarded on September 22, 1986, to build and test a workable prototype. Tests were encouraging. Decision to be made whether to venture or license the technology.
DOE No: 0327  DOE Coord: G.K.Ellis

Title: Square Pattern Irrigation Sprinkler

Description: A sprinkler head that will uniformly distribute irrigation water over a square pattern.

Inventor: B F Rabitsch
State : GA

Contact: B F Rabitsch
Post Office Box #598
Millen GA 30442
912-982-5593

Status: Complete  Status Date: 04/07/88  OERI No.: 010367

Patent Status : Patent # - 4277029
Development Stage : Laboratory Test
Technical Category: Industrial Processes

Recv by NIST : 08/22/84
Recom. by NIST : 10/31/85
Award Date : 06/09/86  Award Amount: $ 87,426 Grant No: FG01-86CE15287
Contract Period: 06/09/86 - 04/07/88

Summary: A grant for $81,426 was awarded on June ninth, 1986, to build and demonstrate a workable prototype. The prototype was completed, and tests were successful.

DOE No: 0328  DOE Coord: J.Aellen

Title: Multi-Directional Pre and Post-Heating Device for Thermal Flamecutting

Description: A local heating apparatus working in conjunction with gascutting to prevent hardening of carbon plate steels. In some grades toughness is also improved.

Inventor: Robert F Roussey, Junior
State : PA

Contact: Robert F Roussey, Junior
Three School Lane
Downingtown PA 19335
215-269-5535

Status: Complete  Status Date: 09/22/88  OERI No.: 010339

Patent Status : Not Applied For
Development Stage : Prototype Development
Technical Category: Miscellaneous

Recv by NIST : 08/09/84
Recom. by NIST : 10/31/85
Award Date : 03/23/87  Award Amount: $ 42,902 Grant No: FG01-87CE15323
Contract Period: 03/23/87 - 09/22/88

Summary: A grant of $42,902 was awarded on March 23rd, 1987, to prepare samples and have them tested at Lehigh University.
DOE No: 0329  DOE Coord: P.M.Hayes
Title: Modularized Pneumatic Tractor with Debris Liquifier
Description: A tractor mounted device to operate inside storage tanks to remove asphaltic and paraffinic deposits during cleaning operations.
Inventor: Albert Lindqvist
State: VI
Contact: N F Bibby
Status: No DOE Support  Status Date: 08/07/87  OERI No.: 010570
Patent Status: Patent # - 4407035
Development Stage: Limited Production/Marketing
Technical Category: Industrial Processes
Recv by NIST: 01/11/85
Recom. by NIST: 11/29/85
Summary: No support was requested by inventor or contact.

DOE No: 0330  DOE Coord: J.Aellen
Title: Vacuum Heat Treating Furnace and Quench System with Drop Transfer
Description: A small vacuum heat treat furnace.
Inventor: Norbert E Stainbrook
State: PA
Contact: Norbert E Stainbrook
423 Sunnyside Avenue
Meadville PA 16335
814-336-3857
Status: Complete  Status Date: 07/10/89  OERI No.: 010691
Development Stage: Working Model
Technical Category: Industrial Processes
Recv by NIST: 03/06/85
Recom. by NIST: 11/29/85
Award Date: 07/11/86  Award Amount: $ 69,987  Grant No: FG01-86CE15290
Contract Period: 07/11/86 - 07/10/89
Summary: A grant of $69,987 was awarded on July 11th, 1986, to build a furnace to test its capabilities.
DOE No: 0331  DOE Coord: E.P. Levine

Title: Cyclic Char Combustion for Engines, Boilers and Gasifiers

Description: An internal combustion engine capable of burning char fuel.

Inventor: Joseph C Firey
State: WA

Contact: Joseph C Firey
Post Office Box #15208
Seattle WA 98115
206-524-2671

Status: Award  Status Date: 02/10/87  OERI No.: 010444

Patent Status: Patent # - 4412511 and others
Development Stage: Concept Development
Technical Category: Combustion Engines & Components

Recv by NIST: 10/16/84
Recom. by NIST: 11/29/85
Award Date: 02/10/87  Award Amount: $ 83,611 Grant No: FG01-87CE15310
Contract Period: 02/10/87 - 08/09/91

Summary:
An $86,611 grant was awarded on February tenth, 1987, to perform bench testing and determine the optimum parameters of performance. Grantee (University of Washington) will cost share in the amount of $6,962. Engine started first time in November 1988. Contract period extended.

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DOE No: 0332  DOE Coord: J. Aellen

Title: Volk Pistachio Huller

Description: A machine to hull pistachio nuts by means of dry abrasion process based on the action of a studded cylinder, which pushes unhulled nuts through a slotted, curved plate.

Inventor: Benjamin Volk
State: CA

Contact: Benjamin Volk

Status: No DOE Support  Status Date: 09/30/88  OERI No.: 010738

Patent Status: Patent # - 4448115 and others
Development Stage: Laboratory Test
Technical Category: Industrial Processes

Recv by NIST: 03/19/85
Recom. by NIST: 12/31/85

Summary: DOE declined to support this invention due to limited energy relationship.
DOE No: 0333  DOE Coord: J.Aellen

Title: Laser Based Machine for Die and Prototype Manufacturing

Description: A method for manufacturing dies and molds using automated laser cutting of thin metal sheets and bonding of the sheets into the required three-dimensional forms.

Inventor: Michael Feygin
State : IL

Contact:
Michael Feygin
Hydronetics
3832 North Ashland Avenue
Chicago IL 60626
312-764-8691

Status: Complete  Status Date: 08/09/88  OERI No.: 010745


Recv by NIST : 03/27/85  Recom. by NIST : 12/31/85  Award Date : 02/10/87  Award Amount: $ 70,000 Grant No: FG01-87CE15316  Contract Period: 02/10/87 - 08/09/88

Summary: A $70,000 grant was awarded on February 10th, 1987, to build and test the technology. No final report has yet been received.

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DOE No: 0334  DOE Coord: E.P.Levine

Title: So-Luminaire Natural Daylighting Unit

Description: An active, sun-tracking mirror/skylight system that reflects natural light into the occupied space for illumination in lieu of electric lights. The reflecting mirror closes upon the skylight opening at night and during periods of high winds.

Inventor: Richard Lee Dominquez
State : AZ

Contact:
William Lindner
So-Luminaire Corporation
3000 East Chambers Road
Phoenix AZ 85040
602-993-1096

Status: Award  Status Date: 09/20/90  OERI No.: 010728


Recv by NIST : 03/12/85  Recom. by NIST : 12/31/85  Award Date : 09/20/90  Award Amount: $ 97,900 Grant No: FG01-90CE15375  Contract Period: 09/20/90 - 09/19/92

Summary: A grant was awarded to fabricate, install, and test device units to empirically determine the degree of energy efficiency and cost-saving benefits.
DOE No: 0335       DOE Coord: J.Aellen

Title:            Robotic Bridge Observation and Information System

Description:     A remotely controlled system utilizing observation and signal processing to inspect and record the condition of bridges and other structures.

Inventor:        Robert A. Maciejczak
State:           IL

Status:          No DOE Support
Status Date:     09/30/88
OERI No.:       010541

Development Stage: Limited Production/Marketing
Technical Category: Industrial Processes

Recv by NIST:     12/18/84
Recom. by NIST:   01/23/86

Summary:         Inventor's request for grant support disapproved due to limited energy relationship.

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DOE No: 0336       DOE Coord: J.Aellen

Title:            A Carbonaceous Selective Absorber for Solar Thermal Energy Collection and Process for Its Formation

Description:     A carbonaceous selective absorber for solar thermal energy collection and process for making same.

Inventor:        John D Garrison
State:           CA

Contact:          John D Garrison
                    San Diego State University
                    Department of Physics
                    San Diego CA  92182
                    619-265-6156

Status:          Complete
Status Date:     12/31/88
OERI No.:       010716

Patent Status:   Not Applied For
Development Stage: Prototype Development
Technical Category: Direct Solar

Recv by NIST:     03/05/85
Recom. by NIST:   01/31/86
Award Date:      07/31/86    Award Amount: $ 70,000
Grant No:        FG01-86CE15289
Contract Period: 07/31/86 - 12/31/88

Summary:         A $70,000 grant was awarded for the design and fabrication of apparatus used in the construction of selectively coated solar panels and for the testing and evaluation of these unique coatings under severe environmental conditions.
DOE No: 0337       DOE Coord: A.R.Barnes
Title:  An Air Operated Hydraulic Power Unit
Description: A pneumatic-hydraulic power unit for actuating automatic electric welding guns in high-production manufacturing.
Inventor: J Donald Snitgen          Contact:  J Donald Snitgen
State : MI                  18828 Hillcrest
                  Birmingham MI 48009
                  313-624-4066
Status: Complete            Status Date: 05/21/88       OERI No.: 010964
Patent Status : Patent # - 4455828 and others
Development Stage : Limited Production/Marketing
Technical Category: Industrial Processes
Recv by NIST : 07/01/85
Recom. by NIST : 01/31/86
Award Date : 08/22/86        Award Amount: $ 59,916 Grant No: FG01-86CE15290
Contract Period: 08/22/86 - 05/21/88
Summary: A $59,916 grant was awarded on August 22nd, 1986, to construct four engineering prototypes - two constant-run type and two positive displacement type, and perform independent testing of units. Grant completed successfully. Units are being manufactured. Ford has purchased 200 units at a total cost of $1.9 million. GM is testing for line delivery robotics applications.

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DOE No: 0338       DOE Coord: G.K.Ellis
Title:  Downhole Pneumatic Turbine Motor for Geothermal Energy
Description: A downhole pneumatic turbine motor for geothermal well drilling.
Inventor: William C Lyons          Contact:  William C Lyons
State : NM                  P O Box #2457
                  Santa Fe NM 87504
                  505-982-2467
Status: Complete            Status Date: 08/06/87       OERI No.: 010889
Patent Status : Patent # - 4434862
Development Stage : Engineering Design
Technical Category: Other Natural Sources
Recv by NIST : 06/04/85
Recom. by NIST : 02/03/86
Award Date : 06/20/86        Award Amount: $ 79,750 Grant No: FG01-86CE15285
Contract Period: 06/20/86 - 08/06/87
Summary: An award of $79,750 was made on June 20th, 1986, to build and demonstrate a workable prototype. The prototype was completed, successfully tested, and has been installed in commercial operation to provide drilling services for geothermal drilling companies. Subsequently, a six-inch motor will be developed for oil and gas wells.
DOE No: 0339
DOE Coord: P.M. Hayes
Title: Recycoil II
Description: A heat exchanger system for using some of the heat (energy) from a laundromat dryer to heat water for washers.
Inventor: John L Wendel
State: FL
Contact: William R Schick
c/o Alternate Energy Systems
133 Startrail
Fort Richey, FL 33553
813-862-9166
Status: Award
Status Date: 08/28/89
OERI No.: 004869
Patent Status: Patent # - 4187701 and others
Development Stage: Limited Production/Marketing
Technical Category: Buildings, Structures & Components
Recv by NIST: 02/22/79
Recom. by NIST: 02/07/86
Award Date: 08/28/89
Award Amount: $ 4,888
Grant No: FG01-89CE15349
Contract Period: 08/28/89 - 08/27/90
Summary: A grant of $4,888 was awarded on August 28th, 1989, to allow the American Gas Association to test the inventor's heat exchange system.

DOE No: 0340
DOE Coord: G.K. Ellis
Title: Separation of Adsorbed Components by Variable Temperature Desorption
Description: An Adsorption Based Method for Separating Multicomponent Liquid or Multicomponent Gas Systems
Inventor: Marshall Findley
State: MO
Contact: Marshall Findley
Department of Chemical Eng
143 Schrenk Hall
Rolla, MO 65401
314-341-4416
Status: Complete
Status Date: 02/10/89
OERI No.: 010856
Patent Status: Not Applied For
Development Stage: Engineering Design
Technical Category: Industrial Processes
Recv by NIST: 05/23/85
Recom. by NIST: 02/18/86
Award Date: 02/11/87
Award Amount: $ 77,791
Grant No: FG01-87CE15304
Contract Period: 02/11/87 - 02/10/89
Summary: Grant awarded for $77,791 on February eleventh, 1987, for development and testing of pilot-scale prototype. Testing results were promising. Inventor seeks licensing opportunity.
DOE No: 0341 DOE Coord: G.K.Ellis

Title: High Pressure Liquid Jets as a Tool for Disintegrating Organic and Non-Organic Materials
Description: A process for using high-pressure water jets for comminution of organic and inorganic materials.

Inventor: Marian Mazurkiewicz
State : MO

Status: Complete Status Date: 09/14/87 OERI No.: 010661

Development Stage : Concept Development
Technical Category: Industrial Processes

Recv by NIST : 02/28/85
Recom. by NIST : 02/21/86
Award Date : 09/14/86 Award Amount: $ 69,248 Grant No: FG01-86CE15299
Contract Period: 09/14/86 - 09/14/87

Summary: A grant of $69,248 was awarded on September 14th, 1986, to build and demonstrate a prototype. The prototype was completed and tested; the results showed no marked improvement over existing technology.

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DOE No: 0342 DOE Coord: J.Aellen

Title: Raw Fines Medium Coal Washing System
Description: A process to recover raw fines from refuse piles at coal mines.

Inventor: Gary L Drake
State : KY

Status: Complete Status Date: 09/01/88 OERI No.: 010783

Patent Status : Not Applied For
Development Stage : Prototype Test
Technical Category: Industrial Processes

Recv by NIST : 04/23/85
Recom. by NIST : 02/24/86
Award Date : 03/02/87 Award Amount: $ 76,456 Grant No: FG01-87CE15293
Contract Period: 03/02/87 - 09/01/88

Summary: A $76,456 grant was awarded on March 2, 1987, to test the technology. No final report has yet been received. Testing program was never started.
DOE No: 0343

DOE Coord: A.R. Barnes

Title: Electronic Octane

Description: A system in which knock intensity in individual cylinders of an automobile engine is sensed and used as a feedback parameter to control spark timing in individual cylinders.

Inventor: John A McDougal

State: MI

Status: Analysis

Status Date: 03/04/86

OERI No.: 010899

Patent Status: Patent # - 4116173 and others

Development Stage: Limited Production/Marketing

Technical Category: Combustion Engines & Components

Recv by NIST: 06/07/85

Recom. by NIST: 03/04/86

Summary:

No DOE support requested. Inventor considering possible demonstration plans. License agreements were signed with Ford and Chrysler as a result of infringement litigation; others are in negotiation.

DOE No: 0344

DOE Coord: G.K. Ellis

Title: Machine for Separating Concrete from Steel

Description: A machine for removing damaged Portland cement concrete roadway by inserting a wedge-shaped anvil under the pavement, hammering the pavement to break it into small pieces, removing it from the reinforcing rod, and conveying the resulting aggregate to trucks. The reinforcing rod is returned to the roadway to be utilized in the repaving operation.

Inventor: Deems M Pfaff

State: MN

Status: Complete

Status Date: 01/19/88

OERI No.: 010394

Patent Status: Patent # - 4309126

Development Stage: Engineering Design

Technical Category: Industrial Processes

Recv by NIST: 09/11/84

Recom. by NIST: 03/07/86

Award Date: 01/20/87

Award Amount: $ 69,956

Grant No: FG01-87CE15315

Contract Period: 01/20/87 - 01/19/88

Summary:

A grant of $69,956 was awarded on January 20th, 1987, as part of a $2.5 million project. Additional funding from other sources is being sought.
DOE No: 0345  DOE Coord: P.M. Hayes

Title: Tulleners Wave Piercer

Description: Design of a seacraft based on sound hydrodynamic and dynamic principles; possesses superior floating qualities with a significant reduction in required power for propulsion.

Inventor: Harry Werner Tulleners
State: OH

Contact: Harry Werner Tulleners
1554 Grimes Avenue
Urbana OH 43078
513-653-6756

Status: Complete  Status Date: 09/30/89  OERI No.: 001370

Patent Status: Patent # - 3430595
Development Stage: Concept Development
Technical Category: Transportation Systems, Vehicles & Components

Recv by NIST: 10/08/76
Recom. by NIST: 03/10/86
Award Date: 08/07/87  Award Amount: $ 70,898 Grant No: FG01-87CE15342
Contract Period: 08/07/87 - 09/30/89

Summary: The Department of the Navy, David Taylor Ship Research and Development Center, conducted seakeeping tests on Mr. Tulleners catamaran-type boat as part of a $70,898 inter-agency agreement with the Department of Energy. Mr. Tulleners is participating in the American Bureau of Shipping and the U.S. Coast Guard boat certification processes. In FY 1989, DOE provided an additional $2,987 to the Department of the Navy for a cost overrun on the project.

DOE No: 0346  DOE Coord: G.K. Ellis

Title: Ultra-Pure Water System for Hospitals

Description: An ozone generator based system for producing medical quality sterile water for intravenous and other applications.

Inventor: Eskil L Karlson
State: PA

Contact: Eskil L Karlson
2626 State Street
Erie PA 16508
814-455-7849

Status: Complete  Status Date: 02/20/88  OERI No.: 011050

Patent Status: Disclosure Document Program
Development Stage: Prototype Development
Technical Category: Industrial Processes

Recv by NIST: 08/02/85
Recom. by NIST: 03/14/86
Award Date: 08/20/86  Award Amount: $ 78,589 Grant No: FG01-86CE15294
Contract Period: 08/20/86 - 02/20/88

Summary: A grant for $78,589 was awarded on August 20th, 1986, to build and demonstrate a workable prototype. The prototype was completed and successfully tested, and the inventor is in active negotiation for licensing.
DOE No: 0347  
DOE Coord: J. Aellen

Title: Oxide Dispersion Strengthened Aluminum Alloys

Description: A process for manufacturing a series of 2XXX aluminum alloys having improved strength at temperatures above 350 degrees F.

Inventor: Ray Alexander  
State: UT  
Contact: Ray Alexander  
410 Chipeta Way  
Suite #222  
Salt Lake City UT  84108  
801-582-8080

Status: Complete  
Status Date: 08/18/88  
OERI No.: 011108

Development Stage: Concept Development
Technical Category: Industrial Processes

Recv by NIST: 08/26/85  
Recom. by NIST: 03/17/86
Award Date: 02/19/87  
Award Amount: $ 70,000  
Grant No: FG01-87CE15300
Contract Period: 02/19/87 - 08/18/88

Summary: A grant of $70,000 was awarded on February 19, 1987, to prepare and test samples.

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DOE No: 0348  
DOE Coord: G.K. Ellis

Title: Hydrogen Sulfide Removal for Natural Gas

Description: A process for removing heavy concentration (30% - 50%) of hydrogen sulfide from gas streams.

Inventor: Christiaan P van Dijk  
State: TX  
Contact: Christiaan P van Dijk  
10722 Glenway  
Houston TX 77070  
713-469-1122

Status: Complete  
Status Date: 05/01/88  
OERI No.: 011171

Patent Status: Not Applied For
Development Stage: Engineering Design
Technical Category: Industrial Processes

Recv by NIST: 10/03/85  
Recom. by NIST: 04/04/86
Award Date: 02/02/87  
Award Amount: $ 73,426  
Grant No: FG01-87CE15314
Contract Period: 02/02/87 - 05/01/88

Summary: A grant of $73,426 was awarded on February second, 1987, to develop information adequate to build a pilot plant which was completed and successfully tested. Inventor negotiating for licensing.
DOE No: 0349  DOE Coord: P.M.Hayes
Title: Three Roll Tension Stand
Description: A high-shear rolling process for the rapid reduction of steel slabs to strip in a single pass.
Inventor: Howard S Orr  Contact: E K Jacob
State : PA
Status: Analysis Status Date: 04/11/86  OERI No.: 010526
Patent Status : Patent # - 4291562
Development Stage : Engineering Design
Technical Category: Industrial Processes
Recv by NIST : 12/04/84
Recom. by NIST : 04/09/86
Summary: No request for assistance has been received.

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DOE No: 0350  DOE Coord: G.K.Ellis
Title: Method and Apparatus for Testing Soil
Description: A testing device for determining the various properties of soil, in situ, for use in analysis of soil-structure interaction under seismic loadings.
Inventor: Wanda Henke  Contact: Wanda Henke
State : MD  2003 Vista Lane
          Lutherville MD  21293
          301-252-4474
Status: Complete Status Date: 05/22/88  OERI No.: 010462
Development Stage : Concept Development
Technical Category: Industrial Processes
Recv by NIST : 11/01/84
Recom. by NIST : 04/09/86
Award Date : 12/23/86  Award Amount: $ 79,860 Grant No: FG01-87CE15305
Contract Period: 12/23/86 - 05/22/88
Summary: A grant of $79,860 was awarded on December 23rd, 1986, for developing final design of prototype system, as part of an NSF SBIR phase II project. The prototype was completed and successfully tested. Inventor is now progressing rapidly in final phases of testing in NSF's SBIR Phase II. Results are promising.
DOE No: 0351    DOE Coord: P.M.Hayes
Title:        Flash Gate Board
Description:  An automatically actuated water control gate to be mounted on top of a reservoir overflow structure to increase head and storage volume.
Inventor:     William Martin Johnson
State :        VA
Contact:       William Martin Johnson
               Route Four, Box #265
               Lynchburg, VA 24503
               804-384-2496
Status:       Complete
Status Date:  05/01/88   OERI No.: 010826
Patent Status : Patent # - 4455106
Development Stage: Engineering Design
Technical Category: Other Natural Sources
Recv by NIST : 05/18/85
Recom. by NIST: 04/09/86
Award Date :   02/02/87   Award Amount: $47,661
Grant No:     FG01-87CE15309
Contract Period: 02/02/87 - 05/01/88
Summary:      A grant of $47,661 was awarded to the Virginia Polytechnic Institute on February second, 1987, to develop mathematical models to examine flash gate behavior. Grant objectives were successfully met. Inventor is seeking financing to build and test full scale working model.

DOE No: 0352    DOE Coord: J.Aellen
Title:        A Waterjet Mining Machine
Description:  A waterjet mining machine which includes the roof support function. High-pressure jets delineate blocks of coal which are subsequently broken loose by hydraulically driven wedges.
Inventor:     David A Summers
State :        MO
Contact:       Ray E Snyder
               Tower Center
               200 East Evergreen
               Mount Prospect IL 60056
               312-398-1525
Status:       Complete
Status Date:  07/06/90   OERI No.: 011173
Patent Status : Not Applied For
Development Stage: Concept Development
Technical Category: Fossil Fuels
Recv by NIST : 10/04/85
Recom. by NIST: 04/22/86
Award Date :   04/27/87   Award Amount: $76,040
Grant No:     FG01-87CE15307
Contract Period: 04/27/87 - 07/06/90
Summary:      A $76,040 grant was awarded on July 27th, 1987, to build and test an advanced prototype. The grant was extended to 7/6/90. No final report.
DOE No: 0353  DOE Coord: J.Aellen
Title: Compu-Turbo-Aligner
Description: A computerized system for aligning the shafts of turbines and generators in powerplants.
Inventor: Kenneth V Field
State: FL
Status: Complete
Status Date: 09/12/90
OERI No.: 010795
Patent Status: Not Applied For
Development Stage: Engineering Design
Technical Category: Miscellaneous
Recv by NIST: 12/30/83
Recom. by NIST: 05/12/86
Award Date: 09/12/90
Award Amount: $61,835
Grant No: FG01-90CE15353
Contract Period: 09/12/90 - 09/11/92
Summary: Proposal under consideration by DOE. A grant of $61,835 was awarded 9/12/90 to build and test a prototype.

DOE No: 0354  DOE Coord: J.Aellen
Title: Preparation of Biliquid Foam Compositions
Description: Use of a biliquid foam for separating bitumen from tar sands.
Inventor: Felix Sebba
State: VA
Status: Complete
Status Date: 04/18/90
OERI No.: 011326
Patent Status: Patent # - 4486333
Development Stage: Working Model
Technical Category: Industrial Processes
Recv by NIST: 12/17/85
Recom. by NIST: 05/27/86
Award Date: 04/20/87
Award Amount: $63,276
Grant No: FG01-87CE15308
Contract Period: 04/20/87 - 04/18/90
Summary: A grant of $63,276 was awarded on April 20th, 1987, to compare twenty special compounds (aphrons) and test them in a diesel engine under varying conditions. No final report received.
DOE No: 0355    DOE Coord: J.Aellen  
Title: Energy-Efficient Ice Cube Making Machine  
Description: A machine which makes ice cubes by freezing together thin layers of ice. This takes advantage of the fact that thin layers of ice can be frozen more quickly than a solid cube of ice can.  
Inventor: John A Broadbent  
State : MN  
Status: Award  
Status Date: 06/22/89    OERI No.: 011122  
Patent Status : Not Applied For  
Development Stage : Laboratory Test  
Technical Category: Miscellaneous  
Recv by NIST : 08/30/85  
Recom. by NIST : 06/24/86  
Award Date : 06/22/89    Award Amount: $ 73,642 Grant No: FG01-89CE15355  
Contract Period: 06/22/89 - 06/30/91  
Summary: A grant of $73,642 was awarded to build and test a prototype.  

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DOE No: 0356    DOE Coord: G.K.Ellis  
Title: Portable Automatic Firewood Processor  
Description: A portable, compact machine for processing small logs into firewood by feeding, shearing and splitting the wood.  
Inventor: Warren A Aikins  
State : WA  
Status: Complete  
Status Date: 06/04/88    OERI No.: 011320  
Patent Status : Patent # - 4483379  
Development Stage : Limited Production/Marketing  
Technical Category: Industrial Processes  
Recv by NIST : 12/16/85  
Recom. by NIST : 07/09/86  
Award Date : 06/05/87    Award Amount: $ 75,411 Grant No: FG01-87CE15330  
Contract Period: 06/05/87 - 06/04/88  
Summary: A grant of $75,411 was awarded on June fifth, 1987, to develop an advanced prototype. The prototype was completed and showed substantial improvement over conventional processing, both as to rate of production and improvement in drying. Item is in limited production. Inventor has received new NIST recommendation (ERIP #460) for a more advanced version, for which a DOE procurement request has been initiated.
DOE No: 0357  DOE Coord: P.M.Hayes
Title: TubeExpress Pneumatic Capsule Pipeline Transport System
Description: A pneumatic materials handling system using capsules to carry bulk materials through a tubular line.
Inventor: William Vandersteel  State: NJ
Contact: William Vandersteel  Tubexpress Systems, Inc.
One Marine Plaza
North Bergen NJ 07047
201-868-2000

Status: Complete  Status Date: 05/01/88  OERI No.: 011285
Patent Status: Patent # - 4458602 and others
Development Stage: Prototype Test
Technical Category: Transportation Systems, Vehicles & Components

Recv by NIST: 12/06/85  Award Date: 02/02/87  Award Amount: $ 70,000 Grant No: FG01-87CE15311
Recom. by NIST: 07/09/86  Contract Period: 02/02/87 - 05/01/88

Summary: A grant of $70,000 was awarded on February second, 1987, to determine the capsule wheel/alignment configuration necessary to achieve spiraling stability in a thirty-six inch diameter system. Project objectives were successfully met. TubeExpress Systems, Inc., is negotiating with several private sector companies for commercial application of the technology.

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DOE No: 0358  DOE Coord: J.Aellen
Title: Device for Well Site Monitoring and Control of Rod- Pumped Wells
Description: A device for monitoring and controlling the pumping rate of rod-pumped wells for maintaining maximum well production rate.
Inventor: John C Purcupile  State: OK
Contact: Glenn Albert
11204 Northwest 113th Street
Yukon OK 73099
405-373-1318

Status: Award  Status Date: 07/07/89  OERI No.: 011010
Development Stage: Prototype Test
Technical Category: Fossil Fuels

Recv by NIST: 07/29/85  Award Date: 07/07/89  Award Amount: $ 78,525 Grant No: FG01-89CE15312
Recom. by NIST: 07/15/86  Contract Period: 07/07/89 - 07/06/91

Summary: A grant of $78,525 was awarded to build and test a prototype.
DOE No: 0359    DOE Coord: P.M.Hayes

Title: Solid Fuel Hot Air Furnace

Description: A wood-fueled furnace is used to heat a poultry/brooder house. A heat exchanger allows fresh, dry air to be supplied to the brooder.

Inventor: James W Flatte
State: AR

Contact: James W Flatte
4500 North 30th
Fort Smith AR 72904
501-782-6840

Status: Award    Status Date: 01/20/87    OERI No.: 011061

Patent Status: Patent # - 4343290
Development Stage: Limited Production/Marketing
Technical Category: Buildings, Structures & Components

Recv by NIST: 08/05/85
Recom. by NIST: 07/23/86
Award Date: 01/20/87    Award Amount: $ 73,098 Grant No: FG01-87CE15320
Contract Period: 01/20/87 - 01/18/90

Summary: A grant of $54,529 was awarded on January 20th, 1987, to build, test and demonstrate the wood furnace heating system. A Phase II grant of $18,569 has also been awarded.

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DOE No: 0360    DOE Coord: G.K.Ellis

Title: Temperature Controllable Heat Valve

Description: A temperature-controllable heat valve uses a control grid that can vary the thermal flow through a heat pipe. It uses no internal moving parts and needs no external energy sources.

Inventor: Lawrence A Schmid
State: MD

Contact: Lawrence A Schmid

Status: Analysis    Status Date: 07/28/86    OERI No.: 010981

Patent Status: Patent # - 4494595
Development Stage: Concept Development
Technical Category: Buildings, Structures & Components

Recv by NIST: 07/08/85
Recom. by NIST: 07/25/86

Summary: Awaiting statement of work from the inventor.
DOE No: 0361  
DOE Coord: J.Aellen  
Title: Measurement of Liquid Volumes with Compensation for Temperature Induced Variations  
Description: A device for metering flowing liquids in which the volumetric measurement is corrected for variations in liquid density.  
Inventor: Vladimir Horak  
Contact: Vladimir Horak  
623 LaFayette  
Hawthorne NJ 07506  
201-423-9303  
Status: Award  
Status Date: 03/16/89  
OERI No.: 011053  
Patent Status: Patent # - 4445627 and others  
Development Stage: Concept Development  
Technical Category: Miscellaneous  
Recv by NIST: 08/03/85  
Recom. by NIST: 08/07/86  
Award Date: 03/16/89  
Award Amount: $ 51,743  
Grant No: FG01-89CE15361  
Contract Period: 03/16/89 - 03/15/91  
Summary: A grant of $51,743 was awarded to build and test a prototype.

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DOE No: 0362  
DOE Coord: J.Aellen  
Title: Improved Solvents for the Puraq Seawater Desalination Process  
Description: A polymer based solvent-extraction process for the desalination of seawater.  
Inventor: Leon Lazare  
Contact: Leon Lazare  
The Puraq Company  
111 Hannah's Road  
Stamford CT 06903  
203-322-3925  
Status: Award  
Status Date: 06/07/88  
OERI No.: 011121  
Patent Status: Patent # - 3832301 and others  
Development Stage: Engineering Design  
Technical Category: Industrial Processes  
Recv by NIST: 09/04/85  
Recom. by NIST: 08/14/86  
Award Date: 06/07/88  
Award Amount: $ 70,000  
Grant No: FG01-88CE15362  
Contract Period: 06/07/88 - 06/06/91  
Summary: A grant for $70,000 was awarded on June 7th, 1988, to produce fifty samples of water absorbent/releasing polymers and the testing of each.
DOE No: 0363          DOE Coord: P.M.Hayes

Title: Impactor Separator

Description: A device for removing particulates from diesel engine exhaust, which consists of an impingement system for capturing particles and a system for collecting and burning these captured particles.

Inventor: Leonard R Lefkowitz
State : NY

Status: Complete          Status Date: 10/15/88    OERI No.: 010426

Development Stage : Laboratory Test
Technical Category: Industrial Processes

Recv by NIST : 10/02/84
Recom. by NIST : 08/14/86
Award Date : 04/04/87    Award Amount: $ 70,000 Grant No: FG01-87CE15327
Contract Period: 04/04/87 - 10/15/88

Summary: A grant of $70,000 was awarded on April 4, 1987, to design, build and test a workable prototype of the regenerative diesel filter invention. Inventor seeking partner to help develop the technology.

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DOE No: 0364          DOE Coord: J.Aellen

Title: Intermittent Solar Ammonia Absorption Cycle (ISAAC)

Description: An intermittent solar-powered ammonia/water absorption cycle to make ice.

Inventor: Donald C Erickson
State : MD

Status: Complete          Status Date: 10/22/88    OERI No.: 011112

Development Stage : Working Model
Technical Category: Industrial Processes

Recv by NIST : 08/26/85
Recom. by NIST : 08/20/86
Award Date : 04/23/87    Award Amount: $ 69,400 Grant No: FG01-87CE15325
Contract Period: 04/23/87 - 10/22/88

Summary: A grant was awarded to build and test a model in Micronesia. Final report not yet received.
DOE No: 0365  DOE Coord: P.M.Hayes
Title: Safety Stovepipe Damper Assembly
Description: A damper to be used on wood stoves to prevent flue overheating.
Inventor: Kenneth H Raihala
State : WI
Contact: Kenneth H Raihala
2316 Wyoming Avenue
Superior WI 54880
715-392-2507
Status: Award
Status Date: 01/09/90  OERI No.: 011315
Patent Status : Patent # - 4479483
Development Stage : Prototype Development
Technical Category: Buildings, Structures & Components
Recv by NIST : 12/13/85
Recom. by NIST : 08/21/86
Award Date : 01/09/90  Award Amount: $ 27,713 Grant No: FG01-90CE15365
Contract Period: 01/09/90 - 01/09/92
Summary: A grant of $27,713 was awarded on January 9, 1990, to determine the operating characteristics of the safety stove pipe dampers and to optimize the performance of the assembly components.

DOE No: 0366  DOE Coord: J.Aellen
Title: High Energy Semiconductor Switch
Description: The invention is an improved gate turn-off thyristor, with capabilities of shorter turn-off time and smaller gate control current.
Inventor: R L Risberg
State : WI
Contact: R L Risberg
16915 West Judith Lane
Brookfield WI 53005
414-784-2025
Status: Award
Status Date: 02/24/87  OERI No.: 011279
Development Stage : Working Model
Technical Category: Miscellaneous
Recv by NIST : 12/05/85
Recom. by NIST : 08/21/86
Award Date : 02/24/87  Award Amount: $ 75,000 Grant No: FG01-87CE15319
Contract Period: 02/24/87 - 02/23/89
Summary: A $75,000 grant was awarded on February 24th, 1987 to fabricate and test prototypes with and without MOS control.
DOE No: 0367  DOE Coord: G.K.Ellis
Title: Disintegration of Wood
Description: A high-pressure water jet for producing wood pulp.
Inventor: Marian Mazurkiewicz
Contact: Terry Nixon
Incubator Technology
Route Four, Box #519
Rolla MO 65401
314-364-8570
Status: Complete Status Date: 11/18/89 OERI No.: 010668
Development Stage : Concept Development
Technical Category: Industrial Processes
Recv by NIST: 02/28/85
Recom. by NIST: 08/27/86
Award Date: 05/19/88 Award Amount: $67,795 Grant No: FG01-88CE15367
Contract Period: 05/19/88 - 11/18/89
Summary: A grant for $67,795 was awarded on May 19th, 1988. The work that has been completed to date does not show the technology as promising.

DOE No: 0368  DOE Coord: T.M.Levinson
Title: Aircraft Minimum Drag Speed System
Description: A system for determining the minimum drag speed of an aircraft in loitering flight.
Inventor: Paul Michelotti
Contact: Paul Michelotti
State : CT
Status: Analysis Status Date: 09/22/86 OERI No.: 010888
Patent Status : Patent # - 4445179
Development Stage : Prototype Development
Technical Category: Transportation Systems, Vehicles & Components
Recv by NIST: 06/04/85
Recom. by NIST: 09/19/86
Summary: Recommendation under consideration by DOE which is awaiting action by the inventor.
DOE No: 0369  DOE Coord: J.Aellen
Title: "Fire Jet" Automatic Anthracite Burner
Description: Anthracite burning furnace including automatic feed and ash disposal.
Inventor: Erwin O Beck
State: PA
Contact: Erwin O Beck
Losch Energy Systems, Inc
1008 Route #61, Building Three
Post Office Box #125
Schuylkill Haven PA 17972
717-385-2442
Status: Award  Status Date: 09/30/89  OERI No.: 010743
Patent Status: Not Applied For
Development Stage: Production & Marketing
Technical Category: Buildings, Structures & Components
Recv by NIST: 03/25/85
Recom. by NIST: 09/22/86
Award Date: 09/30/89  Award Amount: $68,030 Grant No: FG01-89CE15369
Contract Period: 09/30/89 - 09/29/91
Summary: A grant of $68,030 was awarded to build and test a prototype of the invention with additional funds coming from Bucknell University, the inventor and the Ben Franklin Partnership Fund, and Lehigh Coal and Navigation Co.

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DOE No: 0370  DOE Coord: P.M.Hayes
Title: Dehumidification System for Indoor Pools and Other High Humidity Areas
Description: Provides an efficient climate control system for indoor swimming pools and other high humidity areas.
Inventor: Walter A Stark
State: NY
Contact: Walter A Stark
26 Grist Mill Lane
Halesite NY 11743
516-424-8030
Status: Award  Status Date: 09/28/89  OERI No.: 010775
Development Stage: Concept Development
Technical Category: Buildings, Structures & Components
Recv by NIST: 04/19/85
Recom. by NIST: 09/24/86
Award Date: 09/28/89  Award Amount: $70,000 Grant No: FG01-89CE15370
Contract Period: 09/28/89 - 09/27/91
Summary: A grant of $70,000 was awarded on September 28th, 1989 to develop and test a pre-production prototype at an indoor swimming pool.
DOE No: 0371  DOE Coord: P.M. Hayes
Title: Wallace Energy Systems Solar Assisted Heat Pump Water Heater
Description: A solar assisted, heat-pump water heater for commercial application.
Inventor: Joe C Pendergrass  Contact: Joe C Pendergrass
State: GA
Status: No DOE Support  Status Date: 09/29/89  OERI No.: 010980
Patent Status: Patent # - 4438881
Development Stage: Production & Marketing
Technical Category: Buildings, Structures & Components
Recv by NIST: 07/08/85
Recom. by NIST: 09/26/86
Summary: No request for assistance has been received.

DOE No: 0372  DOE Coord: P.M. Hayes
Title: FS 630 Heat Pump Thermostat Control
Description: An add-on control for most heat pump thermostats that allows the heat pump to change its temperature setting automatically and systematically minimizing the use of resistance heating with the heat pump as a backup to accomplish the temperature change.
Inventor: Linus C Fuchek  Contact: Linus C Fuchek
State: WA
Status: No DOE Support  Status Date: 09/29/89  OERI No.: 010851
Patent Status: Patent # - 4334576
Development Stage: Production & Marketing
Technical Category: Buildings, Structures & Components
Recv by NIST: 05/29/85
Recom. by NIST: 09/30/86
Summary: No request for assistance has been received.
DOE No: 0373  DOE Coord: J.Aellen
Title: Tobacco Harvesting Machine
Description: A tobacco harvesting machine having a pair of horizontal rotating augers which propel tobacco plants onto a horizontal fixed tobacco stick. The machine also cuts the stalk.
Inventor: Harold W Taylor, Junior  Contact: Harold W Taylor, Junior
State: KY
Status: No DOE Support  Status Date: 09/29/89  OERI No.: 011424
Patent Status: Patent # - 4353200
Development Stage: Prototype Test
Technical Category: Industrial Processes
Recv by NIST: 02/04/86
Recom. by NIST: 09/30/86
Summary: The DOE declined to provide financial support for this invention due to limited energy relationship.

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DOE No: 0374  DOE Coord: P.M.Hayes
Title: Expansion Compression System for Efficient Power Output Regulation of Internal Combustion Engines
Description: A two-mode engine air supply system based on a helical screw compressor/expander. The device provides compressed air (supercharging) in the engine high-output mode and provides power recovery through expansion of inducted air in the engine low-output mode. The device eliminates the need for a conventional engine throttle.
Inventor: David N Shaw  Contact: David N Shaw
State: CT
Status: No DOE Support  Status Date: 09/29/89  OERI No.: 011544
Development Stage: Concept Development
Technical Category: Combustion Engines & Components
Recv by NIST: 04/30/86
Recom. by NIST: 10/22/86
Summary: No request for assistance has been received.
DOE No: 0375    DOE Coord: J.Aellen

Title: MDT Twister

Description: A device which produces dynamic twisting of iced power cables for the purpose of minimizing galloping.

Inventor: Albert S Richardson, Junior
State: MA

Contact: Albert S Richardson, Junior
Three Wingate Road
Lexington, MA 02173
617-862-7200

Status: Award    Status Date: 09/17/90    OERI No.: 010847

Patent Status: Disclosure Document Program
Development Stage: Working Model
Technical Category: Industrial Processes

Recv by NIST: 05/29/85
Recom. by NIST: 10/24/86
Award Date: 09/17/90    Award Amount: $73,975    Grant No: FG01-90CE15429
Contract Period: 09/17/90 - 09/16/94

Summary: A grant totalling $147,000 was awarded in conjunction with DOE #0429 to produce 300 MDT Twisters and 300 Galloping Indicators.

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DOE No: 0376    DOE Coord: T.M. Levinson

Title: Machine and Method for Producing Energy-Saving Transformers Incorporating Amorphous Metal Cores

Description: Machine and method to make high-efficiency, multi-layer, gap free, magnetic core electrical transformers. They use amorphous steel for core material.

Inventor: Emil B Rechsteiner
State: MA

Contact: Emil B Rechsteiner
Skyfields Farm
Boston Road
Groton, MA 01450
508-486-9483

Status: Award    Status Date: 07/07/88    OERI No.: 011133

Development Stage: Working Model
Technical Category: Miscellaneous

Recv by NIST: 09/11/85
Recom. by NIST: 10/24/86
Award Date: 07/06/88    Award Amount: $64,222    Grant No: FG01-88CE15376
Contract Period: 07/06/88 - 07/05/91

Summary: A $64,222 grant was issued on July 6, 1988, for the purpose of developing a machine that will serve as a testbed for the refinement of the basic concept of using a new technique for winding electric transformer cores made of amorphous metals. During the course of the grant, the feasibility of the concept has been shown. An engineering model has been built and is being tested for reliability and durability. The grantee is contributing $9,600 to the cost of the project.
DOE No: 0377   DOE Coord: G.K. Ellis
Title: A Novel Method of Producing Ice-Water Slurries
Description: The direct production of an ice-water slurry by evaporative crystallization within a suitably-modified Puraq absorption refrigeration chiller utilizing water and ethylene glycol as working fluids with either single or double effect regeneration.
Inventor: Leon Lazare
State: CT
Status: Complete
Status Date: 12/04/88
OERI No.: 011519
Patent Status: Not Applied For
Development Stage: Engineering Design
Technical Category: Buildings, Structures & Components
Recv by NIST: 04/09/86
Recom. by NIST: 10/30/86
Award Date: 06/05/87
Award Amount: $ 70,000
Grant No: FG01-87CE15339
Contract Period: 06/05/87 - 12/04/88
Summary: A grant was awarded to provide support for building a 200 ton Puraq absorption chiller for use in a testing program by Brookhaven National Laboratory. This is a cooperative project with others totaling $385,609. The ERIP grant activity was completed satisfactorily, but the project continues. Because BNL withdrew from the program, the location of the facility was recently changed to Clarkson Univ. ERIP is initiating a procurement request to transfer $92,500 of DOE's Building and Community Systems funds for use by Clarkson.

DOE No: 0378   DOE Coord: P.M. Hayes
Title: An Improved Cutter for Plaster Board and the Like
Description: A table and cutting machine designed for cutting large sheets of materials, such as plaster board and foam insulation used in the building construction industry. A pair of coplanar counter-rotating circular blades moving at different speeds advance the material while essentially shearing it without production of dust.
Inventor: James E Altman
State: GA
Status: No DOE Support
Status Date: 09/29/89
OERI No.: 010916
Development Stage: Limited Production/Marketing
Technical Category: Miscellaneous
Recv by NIST: 06/13/85
Recom. by NIST: 11/10/86
Summary: No request for assistance has been received.
DOE No: 0379  DOE Coord: J.Aellen
Title:  Inner Roof Solar System
Description: The invention is an unglazed solar collector used to replace a residential roof.
Inventor: Joseph Allegro  Contact: Joseph Allegro
          State : FL  731 Northeast Sixty-Ninth St
          Boca Rotan FL  33431  305-977-8479
Status: Award  Status Date: 05/31/89  OERI No.: 010019
Patent Status: Patent # - 4158357 and others
Development Stage: Working Model
Technical Category: Direct Solar
Recv by NIST: 03/07/84  Recom. by NIST: 11/21/86
Award Date: 05/31/89  Award Amount: $ 65,275  Grant No: FG01-89CE15379
Contract Period: 05/31/89 - 05/30/91
Summary: A grant of $65,275 was awarded to build and test prototypes for laboratory and field testing.

DOE No: 0380  DOE Coord: G.K.Ellis
Title:  Blow-In Blanket System
Description: A process for spraying or blowing conventional insulation materials into wall and ceiling cavities. This process utilizes an adhesive to form an insulation blanket that fills voids completely and eliminates settling and drifting. In addition, higher R-values per inch are claimed relative to batt, loose-fill, and spray-applied systems.
Inventor: Henry Sperber  Contact: Henry Sperber
          State : CO
Status: Analysis  Status Date: 11/28/86  OERI No.: 011454
Patent Status: Patent # - 4530468 and others
Development Stage: Production & Marketing
Technical Category: Buildings, Structures & Components
Recv by NIST: 02/20/86  Recom. by NIST: 11/26/86
Summary: Recommendation under consideration by DOE. Some agreement was reached with inventor as to the general kinds of development ERIP would support. Awaiting a more detailed statement of work.
DOE No: 0381  DOE Coord: P.M. Hayes
Title: Multiple Heat-Range Spark Plug
Description: A spark plug that includes a heat pipe to maintain a set temperature of plug tip.
Inventor: William P Strumbos  Contact: William P Strumbos
State : NY
Status: Analysis  Status Date: 12/15/86  OERI No.: 011684
Patent Status : Patent # - 4491101
Development Stage: Concept Development
Technical Category: Combustion Engines & Components
Recv by NIST : 06/09/86
Recom. by NIST : 12/12/86
Summary: No request for assistance has been received.

DOE No: 0382  DOE Coord: P.M. Hayes
Title: System for Recovery of Waste Hot Water Heat Energy
Description: A counter-flow heat exchanger intended for recovering heat from the waste water to preheat the incoming cold water in a home.
Inventor: Carmile F Vasile  Contact: Anthony Grieco
State : NY
1 Meadow Lane
Huntington, NY 11745
516-673-5461
Status: Award  Status Date: 05/02/89  OERI No.: 009925
Development Stage: Prototype Test
Technical Category: Buildings, Structures & Components
Recv by NIST : 01/09/84
Recom. by NIST : 12/16/86
Award Date : 05/02/89  Award Amount: $ 65,000 Grant No: FG01-89CE15382
Contract Period: 05/02/89 - 03/31/91
Summary: A grant of $65,000 was awarded on May second, 1989, to develop and field test prototypes of the waste water recovery system.
DOE No: 0383  
DOE Coord: G.K. Ellis

Title: Electro-Optic Inspection of Heat Exchangers

Description: A laser based system to inspect heat exchanger tubing for internal corrosion, erosion, scale buildup and deformation. An articulated probe is capable of negotiating and rapidly inspecting straight and bent tubing. The results are acquired, stored and displayed on a portable computer system with graphics capability.

Inventor: James L Doyle, Jr.  
State: WA

Contact: James L Doyle, Jr.
Flow Industries
21414 68th Avenue, South
Kent WA 98032
206-872-8500

Status: Complete  
Status Date: 10/08/88  
OERI No.: 011086

Patent Status: Not Applied For
Development Stage: Laboratory Test
Technical Category: Miscellaneous

Recv by NIST: 08/19/85
Recom. by NIST: 12/17/86
Award Date: 04/09/87  
Award Amount: $63,502  
Grant No: FG01-87CE15328

Contract Period: 04/09/87 - 10/08/88

Summary: A grant of $63,502 was awarded on April 9th, 1987, to build and test an advanced prototype. The prototype was completed and satisfactorily tested. Options for developing a new venture are being investigated.

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DOE No: 0384  
DOE Coord: J.Aellen

Title: Textured Substrate and Method for the Direct, Continuous Casting of Metal Sheet Exhibiting Improved Uniformity

Description: A process and hardware for continuously casting thin strip steel

Inventor: Thomas Gaspar  
State: OH

Contact: Lloyd E Hackman
Ribbon Technology Corporation
Box #30758
Gahanna OH 43230
800-848-0477

Status: Complete  
Status Date: 12/13/89  
OERI No.: 011829

Development Stage: Laboratory Test
Technical Category: Industrial Processes

Recv by NIST: 08/15/86
Recom. by NIST: 01/21/87
Award Date: 06/14/88  
Award Amount: $76,444  
Grant No: FG01-88CE15384

Contract Period: 06/14/88 - 12/13/89

Summary: A grant of $49,444 was awarded by ERIP on June 14th, 1988. This was supplemented by a $27,000 grant from the Office of Industrial Programs to build and test a prototype. Final report received.
DOE No: 0385  DOE Coord: P.M. Hayes

Title: Process for Treating Humus Materials

Description: A process for de-watering peat by using acidification to adjust the pH to near the isoelectric point.

Inventor: Harold A Hartung  Contact: Harold A Hartung
State: NJ

Status: No DOE Support  Status Date: 09/29/89  OERI No.: 011349

Patent Status: Patent # - 4459149
Development Stage: Limited Production/Marketing
Technical Category: Fossil Fuels

Recv by NIST: 12/31/85
Recom. by NIST: 01/28/87

Summary: No request for assistance has been received.

DOE No: 0386  DOE Coord: G.K. Ellis

Title: Device and Method to Enable Detection and Measurement of Deformities in Well Components

Description: A tool to check the condition of the well casing during drilling as a means for minimizing blowouts.

Inventor: John H Mayo  Contact: John H Mayo
State: LA  Girk, Inc.
404 Alondo Drive
Lafayette, LA 70503
318-237-3881

Status: Complete  Status Date: 02/28/89  OERI No.: 011599

Patent Status: Patent # - 4578987 and others
Development Stage: Prototype Development
Technical Category: Fossil Fuels

Recv by NIST: 05/21/86
Recom. by NIST: 02/02/87
Award Date: 09/01/87  Award Amount: $ 88,000  Grant No: FG01-87CE15345
Contract Period: 09/01/87 - 02/28/89

Summary: A grant of $88,000 was awarded on September 1, 1987 for developing an advanced prototype. The funding includes $13,000 from DOE/Fossil Energy. The prototype has been completed, but the inventor has been unable as yet to find an opportunity to test it.
DOE No: 0387       DOE Coord: J.Aellen
Title: Quiet Operating Internal Combustion Engine with Complete Highly Efficient Expansion Cycle
Description: A small internal combustion engine operating on a cycle which achieves essentially maximum expansion of combustion gases before they are exhausted to the atmosphere. The engine is flexible with respect to the fuel and ignition means used and can be constructed in several different embodiments to meet different applications. It is quiet, efficient and seems particularly suitable for powering devices such as chain saws, lawn mowers and the like.
Inventor: Frederick L Erickson
State: IN
Contact: George S Lewis
Address: 3926 Windswept Drive
         Fort Wayne IN 46815
         219-483-2093
Status: Award
Status Date: 06/14/88       OERI No.: 005848
Patent Status: Patent # - 4437437 and others
Development Stage: Prototype Test
Technical Category: Combustion Engines & Components

Recv by NIST: 09/25/79
Recom. by NIST: 02/02/87
Award Date: 06/14/88
Award Amount: $ 63,485
Grant No: FG01-88CE15387
Contract Period: 06/14/88 - 06/12/91

Summary: A grant was awarded to Engine Research Associates to build and test a prototype for efficiency and noise level. Grant extended to 6/12/91.

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DOE No: 0388       DOE Coord: J.Aellen
Title: Preparation of Extremely Fine, Superalloy Powders and Their Fabrication into Dense, Sintered, Net Shape Superalloy Parts
Description: A chemical coprecipitation method for preparing superalloy powders of less than one micron, of uniform size, intimately mixed, and without contaminants.
Inventor: Ram Natesh
State: UT
Contact: Gordon F Jensen
Status: Decision Phase
Status Date: 09/30/90       OERI No.: 010480

Patent Status: Not Applied For
Development Stage: Laboratory Test
Technical Category: Industrial Processes

Recv by NIST: 11/14/84
Recom. by NIST: 02/12/87
Summary: Proposal under consideration by DOE.
DOE No: 0389  DOE Coord: P.M.Hayes
Title: Reduced Size Heating Assembly for an Electric Stove
Description: A small diameter heating unit and drip pan for use on conventional electric ranges
Inventor: Donald W Scott  Contact: Donald W Scott
State : GA
Status: No DOE Support  Status Date: 09/29/89  OERI No.: 011004
Patent Status : Patent # - 4506141
Development Stage : Production & Marketing
Technical Category: Miscellaneous
Recv by NIST : 07/15/85
Recom. by NIST : 02/13/87
Summary: No request for assistance has been received.

DOE No: 0390  DOE Coord: G.K.Ellis
Title: Wicks Efficient Fuel Utilization System
Description: A cogeneration module which generates electricity and utilizes waste heat for space heating. It is intended for residential and light commercial applications.
Inventor: Frank Wicks  Contact: Frank Wicks
State : NY
One Nicholas Avenue
Schenectady NY 12309
518-372-2783
Status: Complete  Status Date: 08/04/89  OERI No.: 009948
Patent Status : Not Applied For
Development Stage : Prototype Test
Technical Category: Buildings, Structures & Components
Recv by NIST : 01/24/84
Recom. by NIST : 03/06/87
Award Date : 02/05/88  Award Amount: $ 70,000 Grant No: FG01-88CE15390
Contract Period: 02/05/88 - 08/04/89
Summary: A grant of $70,000 was awarded to build and test a prototype. The prototype has now been substantially completed; tests have been satisfactory, and the inventor has non-exclusive licensing agreements with companies to manufacture and sell the module.
DOE No: 0391  DOE Coord: A.R.Barnes
Title: Compressed Gas Energy Storage
Description: The invention is an energy storage system in a leak-proof salt or granite cavern. In the energy storage mode, a reversible pump-turbine (RPT) unit pumps fluid into the cavern base to compress a mass of gas above it. In the power generation mode, the fluid expands through the RPT unit driving an electric generator to generate electricity during peak power demand.
Inventor: Gerald J Grott  Contact: Gerald J Grott
State : AZ  Status Date: 09/29/89  OERI No.: 011778
Status: No DOE Support  Patent Status : Not Applied For
Development Stage : Concept Development  Development Stage:
Technical Category: Miscellaneous
Recv by NIST : 05/28/86  Recei by NIST : 03/20/87
Summary: No proposal submitted. None expected.

DOE No: 0392  DOE Coord: G.K.Ellis
Title: Method and Apparatus for Drilling Horizontal Holes in Geological Structures from a Vertical Bore
Description: A method and apparatus for linking underground wells up to several hundred feet apart, for in situ coal gasification.
Inventor: David A Summers  Contact: Terry Nixon
State : MO  Status Date: 03/30/87  OERI No.: 010708
Status: Analysis  Patent Status : Patent # - 4317492
Development Stage : Concept Development  Technical Category: Fossil Fuels
Recv by NIST : 03/05/85  Recei by NIST : 03/26/87
Summary: Inventor decided to wait until he has further developed the technology in the laboratory before requesting an ERIP grant for field testing.
DOE No: 0393      DOE Coord: G.K.Ellis
Title: Method and Apparatus for Ultrasonic Testing of Tubular Goods
Description: A method to inspect tubing or pipes for flaws. This is a computer-controlled system for measuring in real time the structural integrity of tubular goods in a variety of different oil-field related operating conditions. For example, the equipment can be adapted for use in pipe lines for remotely evaluating high-pressure, underground gas lines over long distances.
Inventor: Waylon A Livingston  Contact: Waylon A Livingston
State : OK  Tubesonic International, Inc
          770 West Rock Creek Road
          Norman  OK  73069
          405-364-9710
Status: Complete  Status Date: 10/26/89  OERI No.: 011286
Patent Status : Patent # - 4541064 and others
Development Stage : Limited Production/Marketing
Technical Category: Miscellaneous
Recv by NIST : 12/09/85  Recom. by NIST : 04/10/87
Award Date : 08/27/87  Award Amount: $ 94,721  Grant No: FG01-87CE15345
Contract Period: 08/27/87 - 10/26/89
Summary: A grant for was awarded, including $19,721 from Fossil Energy, to build and test a prototype. The system's operation exceeds original expectations. A mobile unit detects flaws in metal of less than one millionth of a square inch. The system was selected to inspect the magnet components for the Supercollider project. Three units have been sold, two for inspection of tubing coming out of wellholes, and one for inspecting coil tubing being manufactured. Inventor needs funding to set up his own service company.

DOE No: 0394      DOE Coord: J.Aellen
Title: Variable Wall Mining Machine
Description: A longwall coal mining machine having a series of side cutting auger sections connected by universal joints. Nitrogen or other inexpensive inert gas is introduced into the shrouded cutting chamber to control release of methane from the coal seam and production of dust by the cutting machine.
Inventor: Jay Hilary Kelley  Contact: Jay Hilary Kelley
State : PA
Status: Decision Phase  Status Date: 09/30/90  OERI No.: 011464
Patent Status : Patent # - 4118072
Development Stage : Prototype Test
Technical Category: Industrial Processes
Recv by NIST : 02/27/86  Recom. by NIST : 04/16/87
Summary: Proposal in negotiation.
DOE No: 0395  DOE Coord: G.K. Ellis
Title: Holland Oil Well Pumping System
Description: A down-hole hydraulically operated oil-well pump for low- and medium-productivity wells (up to 140 bbl/day) and for highly deviated wells. The pump incorporates a steplessly adjustable stroke rate and a very high stroke displacement ratio.
Inventor: John H Holland
State : OK
Contact:
John H Holland
R & D Products, Inc
Hi Point Building
2500 South McGee, Suite #148
Norman OK 73072
405-364-0376

Status: Complete  Status Date: 11/08/89  OERI No.: 011542
Development Stage : Engineering Design
Technical Category: Fossil Fuels
Recv by NIST : 04/29/86
Recom. by NIST : 04/16/87
Award Date : 06/09/88  Award Amount: $ 77,300 Grant No: FG01-88CE15395
Contract Period: 06/09/88 - 11/08/89

Summary: A grant was awarded to build and test a prototype. Although the grant work to date has been satisfactory, there is a pump seal problem that is interfering with the final testing. In the process of testing, the prototype became stuck and lost downhole. The inventor seeks a settlement from the driller to replace the pump so he can continue the testing.

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DOE No: 0396  DOE Coord: G.K. Ellis
Title: Dyna Flow
Description: The Dyna Flow is a retrofit process to an air conditioning system. By adding a second compressor of smaller capacity to an existing central air conditioning system, with two-stage control depending on the cooling load requirement, an improvement in the overall efficiency of the cooling system results.
Inventor: Ruben Espinosa
State : FL
Contact:
Nestor Noriega
2774 Southwest Eleventh Street
Miami FL 33135
305-649-6471

Status: Award  Status Date: 04/14/89  OERI No.: 011737
Patent Status : Patent # - 4535602
Development Stage : Prototype Test
Technical Category: Buildings, Structures & Components
Recv by NIST : 06/23/86
Recom. by NIST : 05/12/87
Award Date : 04/14/89  Award Amount: $ 32,843 Grant No: FG01-89CE15396
Contract Period: 04/14/89 - 04/13/91

Summary: A grant has been awarded to build and test a workable prototype. The work is proceeding satisfactorily.
DOE No: 0397       DOE Coord: P.M.Hayes

Title:            In Service Tank Bottom Leak Detection and Repair System

Description:     A method for detecting and repairing leaks in large storage tanks, particularly those used for storage of petroleum products.

Inventor:        Donald E Lewis
State:           TX

Contact:         Donald E Lewis
                 7714 Moritz Lake Drive
                 Corpus Christi TX 78413
                 512-850-7317

Status:          Award Status Date: 11/28/88    OERI No.: 011780

Patent Status:   Not Applied For
Development Stage: Engineering Design
Technical Category: Industrial Processes

Recv by NIST:    07/18/86
Recom. by NIST:  05/29/87
Award Date:      11/28/88    Award Amount: $ 69,780 Grant No: FG01-88CE15397

Summary:         A grant of $69,780 was awarded on November 28th, 1988, to test the leak detection and repair system on a storage tank.

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DOE No: 0398       DOE Coord: E.P.Levine

Title:            Hydraulic Test Unit - Test Plugs - Mechanical Seal Plugs

Description:     A portable air operated test system, including special tube plugs for high pressure testing of tubes in shell and tube heat exchangers and the like, in power plants or any other process industry.

Inventor:        Renato R Noe
State:           NJ

Contact:         Mary Jane Luddy
                 Powerperfect, Incorporated
                 Twenty-Five East Northfield Rd
                 Livingston NJ 07039
                 201-992-1848

Status:          Award Status Date: 09/21/90    OERI No.: 011782

Patent Status:   Patent # - 4474216
Development Stage: Production & Marketing
Technical Category: Miscellaneous

Recv by NIST:    07/21/86
Recom. by NIST:  05/29/87
Award Date:      09/21/90    Award Amount: $ 75,153 Grant No: FG01-90CE15398
Contract Period: 09/21/90 - 09/20/92

Summary:         A grant was awarded to design, build, and test alternate designs for applying the Portable Hydrostatic Test Device to heat exchange equipment in other industrial process areas.
DOE No: 0399  DOE Coord: T.M.Levinson

Title: Hydrodynamic/Multi Deflection Pad Bearing

Description: A multi-pad bearing configuration applicable to either radial or thrust bearings. These bearing configurations are applicable in each of four market areas: (1) high-speed turbo/turbine equipment, (2) high-load electric motors or gear boxes, (3) air or gas compressors, and (4) air conditioning or refrigeration equipment.

Inventor: Russell D Ide
State: RI

Contact: Russell D Ide
P.O. Box #744
Coventry RI 02816
401-828-1799

Status: Award
Status Date: 01/12/88

OERI No.: 011653

Patent Status: Patent # - 4496251
Development Stage: Prototype Test
Technical Category: Miscellaneous

Recv by NIST: 06/02/86
Recom. by NIST: 06/09/87
Award Date: 01/12/88
Award Amount: $ 75,000

Contract Period: 01/12/88 - 07/11/89

Summary: A grant was awarded to design, manufacture, and test prototype deflection pad bearings in each of the four

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DOE No: 0400  DOE Coord: J.Aellen

Title: Continuous Casting and Inside Rolling of Hollow Rounds

Description: A continuous casting system for steel pipe.

Inventor: Gerhard E Schwarz
State: OH

Contact: Gerhard E Schwarz

Status: Decision Phase
Status Date: 09/30/90

OERI No.: 011789

Patent Status: Patent # - 4546816
Development Stage: Engineering Design
Technical Category: Industrial Processes

Recv by NIST: 07/24/86
Recom. by NIST: 06/24/87

Summary: Proposal in negotiation.
DOE No: 0401 DOE Coord: J. Aellen
Title: A Miniature, Inexpensive Oxygen-Sensing Element
Description: A miniature, low-cost oxygen sensing element for high-temperature applications.
Inventor: W N Lawless
State : OH
Contact: W N Lawless
CeramPhysics, Inc
921 Eastwind Drive
Suite #110
Westerville OH 43081
614-882-2231
Status: Award Status Date: 08/02/88 OERI No.: 011836
Patent Status : Patent # -
Development Stage : Concept Development
Technical Category: Miscellaneous
Recv by NIST : 08/25/86
Recom. by NIST : 06/30/87
Award Date : 08/02/88 Award Amount: $ 75,000 Grant No: FG01-88CE15401
Contract Period: 08/02/88 - 08/01/91
Summary: A grant was awarded to W.N. Lawless to build and test his patented oxygen-sensing technology. Grant extended to 8/1/91.

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DOE No: 0402 DOE Coord: G.K. Ellis
Title: KTM Logger
Description: A mobile biomass processing unit, including a shredder and an extruder, for manufacturing burnable logs from wood waste residue.
Inventor: Stanley D Balzer
State : CA
Contact: Carol D Balzer
Status: Award Status Date: 09/27/90 OERI No.: 011442
Patent Status : Not Applied For
Development Stage : Prototype Development
Technical Category: Miscellaneous
Recv by NIST : 02/12/86
Recom. by NIST : 06/30/87
Summary: A grant was awarded to build and develop a trailer- mounted biomass processing unit to manufacture burnable logs from waste wood residue.

PAGE 3-84  30 SEPTEMBER 1990
DOE No: 0403  DOE Coord: G.K.Ellis
Title: Enterprise Lubricator
Description: A device for lubricating the polished rod and packing of walking beam pumps

Inventor: Raymond A Elam  Contact: Raymond A Elam
State : CA  8536 Kern Canyon Road
Contact:  Bakersfield CA 93306
805-366-9416

Status: Award  Status Date: 02/15/89  OERI No.: 011134
Development Stage : Production & Marketing
Technical Category: Fossil Fuels
Recv by NIST : 09/11/85
Recom. by NIST : 07/07/87
Award Date : 02/15/89  Award Amount: $ 61,855  Grant No: FG01-89CE15403
Contract Period: 02/15/89 - 03/31/91

Summary: The test results completed for several major oil production companies show the daily average reduction of energy at a surprising 9.6 percent per well. As a result, energy consumption readings are for the first time being incorporated into the well analysis programs and oil companies are becoming aware of their oil pollution problems that previously had occurred without proper lubrication.

DOE No: 0404  DOE Coord: J.Aellen
Title: Steam-Methane Reforming in Molten Carbonate Salt
Description: A process for steam-methane reforming using a melt of alkali carbonate salts as both a catalyst and a heat source for the endothermic reaction.

Inventor: Donald C Erickson  Contact: Donald C Erickson
State : MD

Status: No DOE Support  Status Date: 09/30/90  OERI No.: 011255
Development Stage : Laboratory Test
Technical Category: Industrial Processes
Recv by NIST : 11/22/85
Recom. by NIST : 07/29/87

Summary: No proposal received.
DOE No: 0405
Title: Prehydrolysis and Digestion of Plant Material
Description: A process whereby bagasse and similar agricultural waste (such as corn stalks, wheat and rice stalks, etc.) that have a relatively high content of hemicellulose (other than cellulose and lignin) can be prehydrolyzed to convert the remainder of the pulp into useful paper products, while reducing energy consumption drastically. Sugars yielded can be fermented to alcohol without turning out waste.
Inventor: Harald F Funk
Contact: Harald F Funk
State: NJ
Status: No DOE Support
Status Date: 09/30/90
OERI No.: 011625
Patent Status: Patent # - 4070232
Development Stage: Engineering Design
Technical Category: Fossil Fuels
Recv by NIST: 05/27/86
Recom. by NIST: 07/29/87
Summary: No proposal received.

DOE No: 0406
Title: Aluminum Reduction Cell Spent Potlining Fluid Bed Incinerator
Description: This process and proprietary equipment design incinerates spent potlining from aluminum reduction cells and generates a granular, non-hazardous ash through control of ash chemistry. Commercial quantities of energy are recovered conventionally, further enhancing the economics.
Inventor: Ronald S Tabery
Contact: Ronald S Tabery
State: TX
Turnpoint Engineering Corp
1301 Capital of Texas Highway
Austin TX 78746
512-327-8600
Status: Award
Status Date: 06/01/88
OERI No.: 012022
Development Stage: Prototype Test
Technical Category: Industrial Processes
Recv by NIST: 01/30/87
Recom. by NIST: 08/28/87
Award Date: 06/01/88 Award Amount: $ 77,600 Grant No: FG01-88CE15406
Contract Period: 06/01/88 - 11/30/89
Summary: A grant was awarded to build and test a pilot plant prototype, which was successfully completed without attracting investors. The inventor formed a joint venture with Newell industries for fluidized bed disposal of low-density materials (fluff) from automobile shredders. The fluff was to be burned to generate steam for electrical power. Inadequate funding forced termination of this venture. The inventor is currently seeking a limited partnership with a worldwide conference of automobile shredders to continue the project.
DOE No: 0407  DOE Coord: E.P.LEVINE

Title: An Extended Range Tankless Water Heater

Description: An extended range tankless water heater with a peak capacity of roughly 185,000 BTU/hr, designed to operate with uniform efficiency from very low water flowrates to the peak design flowrate. The burner does not activate until a minimum flowrate (about 0.5 gal/min) is reached. The design also has the potential for low manufacturing cost, which can make it competitive with tank-type heaters.

Inventor: James R Harris
State : KS

Contact: James R Harris
Mechanical Engineering Dep’t
Wichita State University
Wichita KS 67208
316-689-3402

Status: Award Status Date: 04/18/89 OERI No.: 011882

Patent Status : Not Applied For
Development Stage : Concept Development
Technical Category: Buildings, Structures & Components

Recv by NIST : 10/03/86
Recom. by NIST : 09/25/87
Award Date : 04/18/89 Award Amount: $ 83,653 Grant No: FG01-89CE15407
Contract Period: 04/18/89 - 04/18/92

Summary: A grant was awarded to build and test a prototype. Initial applications foreseen in the recreational vehicle market.

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DOE No: 0408  DOE Coord: P.M.Hayes

Title: Floodshield System

Description: A flood protection device for commercial and residential structures. It consists of a durable and storable PVC shield which is pulled up and snapped into place when flood waters threaten. A filtered, perforated drain pipe is buried around the base of the structure and is connected to an industrial grade pump which collects and discharges underground seepage.

Inventor: William W Thompson
State : WI

Contact: William W Thompson

Status: No DOE Support Status Date: 04/07/88 OERI No.: 011757

Patent Status : Patent # - 4488386
Development Stage : Production & Marketing
Technical Category: Miscellaneous

Recv by NIST : 07/07/86
Recom. by NIST : 09/29/87

Summary: DOE declined to support the development of the technology.
ENERGY RELATED INVENTIONS PROGRAM - BRIEF STATUS REPORT

DOE No: 0409  DOE Coord: J.Aellen
Title: Self-Dressing Resistance Welding Electrode
Description: A resistance welding electrode designed to maintain a constant weld area contact throughout its entire usable life. This unique design completely eliminates the need for electrode dressing and significantly reduces the operating power requirements by concentrating the application of energy within the work piece.
Inventor: Bryan Prucher
State: AL
Contact: Bryan Prucher
Gray Electronics, Incorporated
3025 North Memorial Parkway
Huntsville AL 35810
204-859-2810

Status: Award  Status Date: 03/15/89  OERI No.: 011967
Patent Status: Patent # - 4476372
Development Stage: Limited Production/Marketing
Technical Category: Miscellaneous
Recv by NIST: 12/11/86
Recom. by NIST: 09/29/87
Award Date: 03/15/89  Award Amount: $ 57,102 Grant No: FG01-89CE15409
Contract Period: 03/15/89 - 03/15/91

Summary: A grant was awarded to Bryan Prucher to build and test a prototype.

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DOE No: 0410  DOE Coord: G.K.Ellis
Title: The World's First Gas Fired, Forced Air, High Efficiency, Furnace That Requires No Electricity
Description: A furnace incorporating a steam turbine and thermopile electric power source to eliminate the requirements for electric power to operate the fan and open the gas valve. The Annual Fuel Utilization Efficiency (AFUE) for the furnace is claimed to be eighty-three percent.
Inventor: Peter Kneaskern
State: OH
Contact: Peter Kneaskern
TRD Corporation
5181 West 61st Street
Cleveland OH 44142
216-433-7775

Status: Award  Status Date: 06/30/89  OERI No.: 011477
Patent Status: Patent # - 4418538 and others
Development Stage: Prototype Test
Technical Category: Buildings, Structures & Components
Recv by NIST: 03/03/86
Recom. by NIST: 10/05/87
Award Date: 06/30/89  Award Amount: $ 80,040 Grant No: FG01-89CE15410
Contract Period: 06/30/89 - 06/29/91

Summary: A grant was awarded to further develop the technology, do the design, build an advanced prototype and test a condensing type of the furnace. The work is proceeding on schedule.
DOE No: 0411  DOE Coord: T.M. Levinson
Title: The Wide-Open Throttle Approach to Greater Automotive Fuel Efficiency
Description: An engine control approach originally conceived for use with continuously variable transmissions, but now applied to discrete-ratio transmissions (thereby to eliminate a technological risk). This approach mainly comprises a special Otto engine calibration and a drive-by-wire system for regulating engine throttle position independently of accelerator pedal position and for selecting the active transmission ratio.

Inventor: David Ganoung
State: NM
Contact: David Ganoung
2800 1/2 Candelaria NW
Albuquerque NM 87107
505-344-6531

Status: Award  Status Date: 03/16/89  OERI No.: 011390
Patent Status: Patent # - 4774858 and others
Development Stage: Concept Development
Technical Category: Combustion Engines & Components
Recv by NIST: 01/15/86
Recom. by NIST: 10/29/87
Award Date: 03/16/89  Award Amount: $ 77,778 Grant No: FG01-89CE15411
Contract Period: 03/16/89 - 03/31/91
Summary: The inventor conducted stationary dynamometer tests at Southwest Research Institute in San Antonio, TX, on a stock 2.3 liter Ford engine. He presented his findings at the Society of Automotive

DOE No: 0412  DOE Coord: J.Aellen
Title: Meta-Lax Stress Relief for Almost any Size Metal Structure
Description: A method for using sub-resonant cyclic vibration excitement to relieve processing stresses in metal structures, including welding during sub-resonant vibration.

Inventor: August G Hebel, Junior
State: MI
Contact: August G Hebel, Junior
27556 East Echo Valley
Farmington Hills MI 48018
313-553-2974

Status: Award  Status Date: 04/28/89  OERI No.: 011898
Patent Status: Patent # - 3741820 and others
Development Stage: Limited Production/Marketing
Technical Category: Industrial Processes
Recv by NIST: 10/16/86
Recom. by NIST: 10/30/87
Award Date: 04/28/89  Award Amount: $ 67,825 Grant No: FG01-89CE15412
Contract Period: 04/28/89 - 04/27/91
Summary: A grant was awarded to Welding Consultants, Inc to compare two methods of relieving stress in welds; i.e. thermal stress versus Meta-lax stress relief.
DOE No: 0413  DOE Coord: A.R. Barnes

Title: Non Metallic Railroad Switch Covers

Description: Reinforced plastic or composite covers used in conjunction with conventional heating elements to prevent freezing of railroad switches.

Inventor: Stanley Wayne Widmer
State : MN

Contact: Stanley Wayne Widmer
Route One, Box #218-C
Browerville MN 56479
218-894-1507

Status: Award  Status Date: 06/05/89  OERI No.: 012058

Development Stage : Limited Production/Marketing
Technical Category: Transportation Systems, Vehicles & Components

Recv by NIST : 02/25/87
Recom. by NIST : 11/16/87
Award Date : 06/05/89  Award Amount: $ 69,753 Grant No: FG01-89CE15413
Contract Period: 06/05/89 - 06/04/91

Summary: A grant was awarded to develop production molding capability to reduce cost. Will test production models in cooperation with railroad.

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DOE No: 0415

DOE Coord: G.K. Ellis

Title: Oil Recovery by Modified Steam Drive Employing High Velocity Non-Condensible Gas

Description: A modified steam drive employing high velocity non-condensible gases, for improved recovery of heavy oils.

Inventor: Todd M Doscher
State : CA

Contact: Joyce A Kostura
CLD Technology, Incorporated
740-A East Main Street
Ventura, CA 93001
805-653-5287

Status: Award
Status Date: 08/31/90
OERI No.: 012041

Patent Status: Patent # - 4610304 and others

Development Stage: Engineering Design
Technical Category: Fossil Fuels

Recv by NIST: 02/13/87
Recom. by NIST: 11/30/87
Award Date: 08/31/90
Award Amount: $ 79,200
Grant No: FG01-90CE415000
Contract Period: 08/31/90 - 08/30/92

Summary: A grant has been awarded for scale model work that would quantify the increase in oil production resulting from steam mixed with a non-condensible gas injected into an oil reservoir while adding surfactants to generate a foam and simulating a specific reservoir. A profitability analysis would be included.

DOE No: 0416

DOE Coord: E.P. Levine

Title: Self-Contained Pipe Freezing Unit

Description: A refrigeration device for use by plumbers for freezing water inside a small section of pipe to create an "ice block" which prevents water from flowing downstream. With the "ice block" in place, the plumber can relieve the water pressure and drain the pipe for any service work.

Inventor: Arthur Radichio
State : NY

Contact: Arthur Radichio

Status: No DOE Support
Status Date: 09/30/90
OERI No.: 011535

Patent Status: Patent # - 4309875

Development Stage: Working Model
Technical Category: Buildings, Structures & Components

Recv by NIST: 04/22/86
Recom. by NIST: 12/29/87

Summary: No proposal received.
DOE No: 0417  DOE Coord: G.K.Ellis
Title:  Rotary Drill Bit
Description:  An improved drill bit design for rotary well drills.
Inventor:  Roy W Wood  Contact:  Roy W Wood
State :  AL  Status:  Analysis
Status Date: 12/31/87  OERI No.: 011786
Patent Status :  Disclosure Document Program
Development Stage :  Concept Development
Technical Category:  Fossil Fuels
Recv by NIST : 07/23/86
Recom. by NIST : 12/31/87
Summary:  Recommendation under consideration by DOE.  Awaiting a proposal from the inventor.

DOE No: 0418  DOE Coord: J.Aellen
Title:  Use of Chemical Vapor Deposition to Coat Metal Surfaces with High-Temperature Superconducting Materials
Description:  A chemical vapor deposition process for coating metal surfaces with new (relatively) high-temperature superconducting materials.
Inventor:  Wayne S Brown  Contact:  Wayne S Brown
State :  UT  Status:  No DOE Support
Status Date: 09/29/89  OERI No.: 012281
Patent Status :  Not Applied For
Development Stage :  Concept Development
Technical Category:  Industrial Processes
Recv by NIST : 07/06/87
Recom. by NIST : 12/31/87
Summary:  Recommendation no longer under consideration by DOE due to death of inventor.
DOE No: 0419          DOE Coord: J.Aellen
Title:               A Planing Mining Machine to Produce Ultra-Fine Coal
Description:         A water jet based coal mining system to separate out impurities as the coal is
                     being mined. The system also permits cutting square holes, increasing
                     recoverable reserves. The system would be primarily for mining presently
                     unusable high ash and similar coal fields that are uneconomical to mine.
Inventor: Marion Mazurkiewicz
State : MO
Contact:             Bob Johnson
                     Office of Research
                     Lewis Hall
                     University of Missouri
                     Columbia, MO 65211
                     314-882-2821
Status: Award        Status Date: 06/20/89        OERI No.: 010687
Patent Status :      Not Applied For
Development Stage :  Concept Development
Technical Category:  Industrial Processes
Recv by NIST :       02/28/85
Recom. by NIST :     01/29/88
Award Date :         06/20/89        Award Amount: $ 79,828 Grant No: FG01-89CE15419
Contract Period:     06/20/89 - 06/19/91
Summary:             A grant was awarded to the University of Missouri at Rolla, to build, test and
demonstrate a prototype machine.

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DOE No: 0420          DOE Coord: E.P.LEVINE
Title:               The Utah Transmission/Continuously Variable Speed Wind Generator
Description:         A continuously variable transmission utilizing a variable cam drive with power
                     transmitted through one of a series of overrunning clutches.
Inventor: Laird B Gogins
State : UT
Contact:             Laird B Gogins
                     123 Second Avenue
                     Apartment #1201
                     Salt Lake City UT 84103
                     803-263-3483
Status: Award        Status Date: 06/23/89        OERI No.: 011820
Development Stage :  Working Model
Technical Category:  Transportation Systems, Vehicles & Components
Recv by NIST :       08/11/86
Recom. by NIST :     01/29/88
Award Date :         06/23/89        Award Amount: $ 90,000 Grant No: FG01-89CE15420
Contract Period:     06/23/89 - 06/22/91
Summary:             A grant was awarded to build a ninety-three horsepower prototype to be
                     installed and tested in a U.S. Postal Service vehicle. Inventor is pursuing
development of other applications through private sector joint ventures.
DOE No: 0421  
DOE Coord: G.K. Ellis

Title: Flexible Drill Pipe

Description: A flexible drill pipe to allow drilling horizontal drain holes for enhanced oil recovery.

Inventor: W B Driver  
State: TX

Contact: W B Driver  
Post Office Box #1281  
Greenville TX 75401  
214-447-3816

Status: Award
Status Date: 02/01/89  OERI No.: 012312

Patent Status: Patent # - 4149391
Development Stage: Prototype Test
Technical Category: Fossil Fuels

Recv by NIST: 08/03/87
Recom. by NIST: 01/29/88
Award Date: 02/01/89  Award Amount: $ 51,895 Grant No: FG01-89CE15421
Contract Period: 02/01/89 - 03/31/91

Summary: A grant was awarded to conduct field tests of the flexible drill pipe in an oil formation. Tests are proceeding in cooperation with an oil field owner, which to date have been highly encouraging.

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DOE No: 0422  
DOE Coord: G.K. Ellis

Title: High Efficiency Ozone Generating System

Description: A high-efficiency, high-pressure ozone generating system.

Inventor: Eskil L Karlson  
State: PA

Contact: Eskil L Karlson  
2626 State Street  
Erie PA 16508  
814-455-7849

Status: Complete
Status Date: 01/28/90  OERI No.: 012191

Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Industrial Processes

Recv by NIST: 05/05/87
Recom. by NIST: 02/29/88
Award Date: 07/29/88  Award Amount: $ 78,359 Grant No: FG01-88CE15422
Contract Period: 07/29/88 - 01/28/90

Summary: A grant for $78,359 was awarded on July 29th, 1988, to build and test a prototype. Tests of the finished system are about to start. The inventor is highly enthusiastic in that paper pulp mills in Europe are eagerly awaiting results and want to include this technology in their bleaching systems. Tests of the prototype were completed with results as anticipated and at last report the inventor was about to sign a licensing agreement with a paper mill in Denmark.
DOE No: 0423 DOE Coord: G.K. Ellis
Title: Superverter - A Digitally Synthesized DC-to-AC Sinewave Inverter
Description: A microprocessor controlled solid state DC to AC inverter which synthesizes a nearly sinusoidal output waveform with low harmonic content over a wide range of loads. This device conditions locally produced DC power (photovoltaics, wind devices, etc.) for operating conventional AC appliances.
Inventor: Harlan K Loveness
State: AZ
Contact: Tinny Srinivasan
6701 Southeast Alberta
Portland OR 97206
503-777-1309
Status: Award
Status Date: 05/24/89 OERI No.: 011957
Patent Status: Not Applied For
Development Stage: Prototype Test
Technical Category: Miscellaneous
Recv by NIST: 12/01/86
Recom. by NIST: 02/29/88
Award Date: 05/24/89 Award Amount: $ 79,978 Grant No: FG01-89CE15423
Contract Period: 05/24/89 - 06/23/91
Summary: A grant was awarded to develop and test an advanced five kilowatt prototype. The hardware has been selected and/or developed and work is proceeding now on the final packaging. Meanwhile, the inventor and his company actively seek to market the technology.

DOE No: 0424 DOE Coord: E.P. Levine
Title: An Automated Process for Garment Manufacturers
Description: A computer integrated manufacturing process for making garments.
Inventor: Brett Stern
State: NY
Contact: Brett Stern
111 West Twenty-Eighth Street
New York NY 10001
212-947-9118
Status: Complete
Status Date: 09/30/90 OERI No.: 012302
Patent Status: Patent # - 4645629
Development Stage: Prototype Development
Technical Category: Industrial Processes
Recv by NIST: 07/20/87
Recom. by NIST: 02/29/88
Award Date: 08/24/89 Award Amount: $ 70,750 Grant No: FG01-89CE15424
Contract Period: 08/24/89 - 02/23/91
Summary: A grant was awarded to develop consumer acceptance indices and perform engineering design for prototype. Inventor negotiating with private sector partners for prototype development. Final report received. Additional funding being provided by N.Y. State Energy and Development Authority.
DOE No: 0425    DOE Coord: G.K. Ellis
Title: High Temperature Condensing Biomass Combustion System
Description: A biomass-fueled furnace to burn green logs, chips, sawdust, corncocks pellets, peat and other biomass waste as cleanly as oil and gas.
Inventor: Lawrence A Dobson
State: WA

Contact: Lawrence A Dobson
1385 Thirty-Third Ave. South
Seattle WA 98144
206-325-6472

Status: Award    Status Date: 08/24/89    OERI No.: 012030
Patent Status: Patent # - 4559882
Development Stage: Prototype Development
Technical Category: Fossil Fuels
Recv by NIST: 02/06/87
Recom. by NIST: 03/31/88
Award Date: 08/24/89    Award Amount: $ 79,953 Grant No: FG01-89CE15425
Contract Period: 08/24/89 - 09/23/91

Summary: A grant was awarded to design, develop and build a production boiler and test it in cooperation with a potential industry user. The prototype has been built, tested, and validated by a credible third party as to its environmental benefits. The inventor seeks a cooperative effort with an interested user industry.

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DOE No: 0426    DOE Coord: G.K. Ellis
Title: Eddy Current Transducing System
Description: Equipment for measuring blade clearance and speed in a rotating machine, in real time. An eddy current transducer supplies signals to a microprocessor which are processed to provide clearance and speed information.
Inventor: Lawrence W Langley
State: VA

Contact: Lawrence W Langley
910 Cardinal Drive
Christiansburg VA 24073
703-382-9322

Status: Award    Status Date: 04/11/89    OERI No.: 011921
Patent Status: Disclosure Document Program
Development Stage: Laboratory Test
Technical Category: Miscellaneous
Recv by NIST: 11/03/86
Recom. by NIST: 03/31/88
Award Date: 04/11/89    Award Amount: $ 79,110 Grant No: FG01-89CE15426
Contract Period: 04/11/89 - 06/30/91

Summary: A grant was awarded to perform a detailed circuit design of the product, build a prototype and test an operating turbomachine in a host computer. The work will be a free-standing instrument for turbomachine clearance and vibration measurement to be adapted to any gas turbine, jet engine, compressor or steam turbine with a minimum of machine modification. It will be the only such machine available for general licensing. But, because of expanded scope of the project, the inventor needs some additional funding.
DOE No: 0427                DOE Coord: J.Aellen
Title:                   Non-Catalytic Steam Hydrolysis of Fats
Description:            A non-catalytic process for steam hydrolyzing fats and recovering the
                        separated products thus formed.
Inventor:               Kenneth E Lunde
State :                 MT
Contact:                Kenneth E Lunde
                        912 Tenth Avenue, Northwest
                        Great Falls MT 59404
                        406-761-4819
Status: Award           Status Date: 06/29/89    OERI No.: 011098
Development Stage :     Laboratory Test
Technical Category:     Industrial Processes
Recv by NIST :          08/22/85
Recom. by NIST :        03/31/88
Award Date :            06/29/89    Award Amount: $ 74,980 Grant No: FG01-89CE15427
Contract Period:        06/29/89 - 06/28/91
Summary:               A grant was awarded to Montana State University, to design, build and operate
                        a laboratory prototype.

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DOE No: 0428                DOE Coord: G.K.Ellis
Title:                   T-By Tray
Description:            The invention is a new tray design for distillation columns.
Inventor:               Trent J Parker
State :                 UT
Contact:                Trent J Parker
                        Uni-Frac, Incorporated
                        P. O. Box #9099
                        Salt Lake City UT 84109
                        801-972-5046
Status: Complete         Status Date: 05/14/90    OERI No.: 012275
Development Stage :     Working Model
Technical Category:     Industrial Processes
Recv by NIST :          06/30/87
Recom. by NIST :        04/22/88
Award Date :            11/15/88    Award Amount: $ 80,239 Grant No: FG01-89CE15428
Contract Period:        11/15/88 - 05/14/90
Summary:               Tests at the Univ. of Texas' Separations Research Center show some advances
                        over the current technology: a major reduction in tray pressure, a broader
                        operating range, equivalent or higher point efficiency with probable higher
                        tray efficiency, and a greater vapor handling capacity. These reduce the
                        distillation and mass transfer operating cost, especially in oil refining. The
                        SCR tests show that the T-By Tray invention may save 1/8 of the energy cost
                        used for processing. Licensing discussions are being held with Kock
                        Engineering Company.
DOE No: 0429  
Title: A Low Cost Galloping Indicator  
Description: A mechanical device for detecting galloping of aerial conductors of electric power transmission lines.  
Inventor: Albert S Richardson, Junior  
State: MA  
Contact: Albert S Richardson, Junior  
Three Wingate Road  
Lexington MA 02173  
617-862-7200  
Status: Award  
Status Date: 09/17/90  
OERI No.: 010626  
Summary: A grant totalling $147,000 was awarded in conjunction with DOE #0375 to produce 300 MDT Twisters and 300 Galloping Indicators.

DOE No: 0430  
Title: Whitten Dugas Mud Pump Enhancer  
Description: Modifying an existing mud pump to inject a barrier fluid, usually water, between the piston face and the abrasive drilling fluid to protect the pistons of the mud pump, for use in oil and gas well drilling.  
Inventor: Harold P Dugas  
State: TX  
Contact: Giles M Whitten  
4823 Dollar Reef  
Bay Cliff TX 77518  
713-332-1817  
Status: Award  
Status Date: 09/20/90  
OERI No.: 011855  
Summary: A grant was awarded to modify 3 mud pumps and, in cooperation with a drilling contractor, to test them either to destruction or until 120 days has elapsed, whichever comes first, in order to determine their reliability and a reasonable longevity.
DOE No: 0431

Title: Method and Apparatus for Removing Excess Water from Subterranean Wells.

Description: A method by which separation of water from hydrocarbons produced in wells is effected within the wellbore through the action of gravity. As the mixture of hydrocarbons and water enters the well, the water settles to the bottom. Either a pump or just the action of gravity head injects the water in a rock formation. The hydrocarbons are brought to the surface with or without the help of artificial lift, as in conventional wells.

Inventor: Jack Wade McIntyre
Contact: Jack Wade McIntyre
State: TX
Status: Analysis
Status Date: 05/31/88

Development Stage: Concept Definition
Technical Category: Fossil Fuels
Recv by NIST: 09/01/87
Recom. by NIST: 05/31/88

Summary: Recommendation under consideration by DOE. Awaiting statement of work.

DOE No: 0432

Title: Water Hammer Pile Driver

Description: A pile driver, intended for offshore use, in which a water hammer tube is evacuated and the ambient pressure provided by the surrounding sea water is used to generate the driving impulse which increases with depth.

Inventor: Serge Wisotsky
Contact: Serge Wisotsky
State: OK
Status: No DOE Support
Status Date: 09/30/90

Patent Status: Patent # - 3922869 and others
Development Stage: Engineering Design
Technical Category: Industrial Processes
Recv by NIST: 09/25/84
Recom. by NIST: 05/31/88

Summary: DOE declined to provide support.
DOE No: 0433   DOE Coord: P.M.Hayes

Title:  Improved Methods to Manufacture and Use Carbon-Alumina Composite Anodes for Aluminum Reduction

Description: A new composite anode for aluminum reduction that will reduce power requirements for aluminum production.

Inventor: J C Withers
State : WA
Contact: Theodore R Beck
Electrochemical Tech Corp
1601 Dexter Avenue, North
Seattle WA 98109
206-285-7404

Status: Award   Status Date: 03/17/89   OERI No.: 012346

Patent Status : Disclosure Document Program
Development Stage : Engineering Design
Technical Category: Industrial Processes

Recv by NIST : 08/24/87
Recom. by NIST : 03/17/89
Award Date : 03/17/89   Award Amount: $ 84,988 Grant No: FG01-89CE15433
Contract Period: 03/17/89 - 09/16/90

Summary: A grant of $84,998 was awarded on March 17th, 1989, to design a 300 ampere test cell, produce anodes of the new design and test the anodes to prove the concept and reprove the design.

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DOE No: 0434   DOE Coord: E.P.LEVINE

Title:  Modular Apparatus for Laundry Dryer Heat Recovery

Description: A rotary air-to-air heat exchanger module for primary use with institutional/commercial laundry dryers. The device recovers dryer exhaust heat and preheats intake air, thereby reducing dryer fuel consumption.

Inventor: Ben B Herschel
State : NJ
Contact: Ben B Herschel
Rototherm Corporation
242-B Laurel Place
Howell NJ 07731
201-370-0695

Status: Award   Status Date: 07/20/89   OERI No.: 011801

Patent Status : Patent # - 4488364
Development Stage : Limited Production/Marketing
Technical Category: Miscellaneous

Recv by NIST : 07/30/86
Recom. by NIST : 06/28/88
Award Date : 07/20/89   Award Amount: $ 71,982 Grant No: FG01-89CE15434
Contract Period: 07/20/89 - 09/30/91

Summary: A grant was awarded to build prototypes for different size applications; tests to be conducted in cooperation with commercial laundries and with A.G.A. for certification.
DOE No: 0435  
DOE Coord: E.P. Levine

Title: A New Thermodynamic Process of Actual Approach to the Carnot Cycle

Description: A heat engine cycle using two or more working fluids with different boiling points. Generally, mixtures of the fluids are vaporized and expanded through a turbine. The liquid turbine exhaust is used to pre-heat and vaporize some of the condensed phases. The remaining vapor is expanded through an additional stage to maximize efficiency.

Inventor: Serafin L Mendoza  
Contact: Serafin L Mendoza

Status: Analysis  
Status Date: 06/30/88  
OERI No.: 009915

Patent Status: Not Applied For
Development Stage: Engineering Design
Technical Category: Combustion Engines & Components

Recv by NIST: 01/03/84
Recom. by NIST: 06/30/88

Summary: Recommendation under consideration by DOE.

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DOE No: 0436  
DOE Coord: G.K. Ellis

Title: The Russell Self-Piloted Check Valve

Description: A check valve which embodies a conventional flapper valve and an eccentric ball valve. In the open position, the flow is unimpeded in a certain direction. When the flow reverses, the spring-loaded flapper valve within the ball closes. It then causes the ball valve to close against a restraining spring pressure. When the fluid pressure is released, the restraining spring opens the ball valves while the opposing flow opens the flapper.

Inventor: Joe Sanford  
Contact: Jim Cunningham
State: LA  
Post Office Box #2946
Morgan City LA 70381
504-380-2366

Status: Award  
Status Date: 09/29/89  
OERI No.: 012103

Patent Status: Patent # - 4254836 and others
Development Stage: Prototype Test
Technical Category: Buildings, Structures & Components

Recv by NIST: 03/06/87
Recom. by NIST: 07/07/88
Award Date: 09/29/89  
Award Amount: $ 78,863 Grant No: FG01-89CE15436
Contract Period: 09/29/89 - 09/29/91

Summary: A grant was awarded to build and test several prototypes, test them downhole with cooperating drilling companies and, with the accumulated data, to complete preliminary design of an advanced prototype. The work is proceeding satisfactorily and the prototype is about completed.
Steam Generator With Integral Down-Draft Dryer

The invention is a method for improving the operation of a steam generating furnace fired with high moisture content wood fuels. It consists of a drying shaft installed inside the furnace. The fuel is dried by bringing it in turbulent contact with hot combustion gases. Dryer fuel requires less excess air for stable combustion; also, the need for fuel to stabilize combustion is obviated.

Inventor: Frank W Hochmuth
State: ME

Contact:
Frank W Hochmuth
Postal Box #186
Brewer ME 04412
207-989-1008

Status: Award
Status Date: 06/30/89
OERI No.: 011408

Patent Status: Patent # - 4502397 and others
Development Stage: Engineering Design
Technical Category: Buildings, Structures & Components

Recv by NIST: 01/28/86
Recom. by NIST: 07/20/88
Award Date: 06/30/89
Award Amount: $55,946
Grant No: FG01-89CE15437
Contract Period: 06/30/89 - 06/29/91

Summary: A grant was awarded to Mr. Hochmuth to test the physical properties of hog fuel and perform an economic analysis.

Microwave Reflection by Synthetic Metals

A series of synthetic materials that reflect microwaves.

Inventor: M Thomas Jones
State: MO

Contact:
Robert Killoren

Status: No DOE Support
Status Date: 09/30/90
OERI No.: 012353

Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Industrial Processes

Recv by NIST: 08/27/87
Recom. by NIST: 07/29/88

Summary: Proposal not received.
DOE No: 0439                       DOE Coord: E.P. Levine
Title: Project Twenty-One Rapid Transit System
Description: A rapid transit system optimized for placement above existing urban streets. Its outstanding features are two-way traffic along a super-sleender beam, compact stations, and convenient switching for two-way traffic.
Inventor: Lawrence K Edwards
State : VA
Contact: Lawrence K Edwards 3507 Slade Run Drive Falls Church VA 22042 703-532-2360
Status: Complete Status Date: 05/10/90 OERI No.: 012388
Patent Status : Patent # - 4485967 and others
Development Stage : Engineering Design
Technical Category: Transportation Systems, Vehicles & Components
Recv by NIST : 12/17/85
Recom. by NIST: 08/02/88
Award Date : 05/11/89 Award Amount: $ 80,349 Grant No: FG01-89CE15439
Contract Period: 05/11/89 - 05/10/90
Summary: A grant was awarded to build a quarter-scale model of vehicle, track and station and to conduct structural, dynamic and safety analysis. Final report received.

DOE No: 0440                       DOE Coord: P.M. Hayes
Title: Microtube Strip Heat Exchanger
Description: A high efficiency heat exchanger is described which is suitable for improving the efficiency of closed Brayton cycles as well as a number of other applications. The heat exchanger relies on laminar flow for the convective heat transfer. Manufacturing of the heat exchanger is also discussed.
Inventor: F David Doty
State : SC
Contact: F David Doty Doty Scientific Incorporated Six Hundred Clemson Road Columbia SC 29223 803-788-6497
Status: Award Status Date: 09/04/90 OERI No.: 012615
Patent Status : Patent # - 4676305
Development Stage : Prototype Development
Technical Category: Combustion Engines & Components
Recv by NIST : 04/07/88
Recom. by NIST: 08/05/88
Award Date : 09/04/90 Award Amount: $ 99,886 Grant No: FG01-90CE15440
Contract Period: 09/04/90 - 03/03/92
Summary: Recommendation under consideration by DOE.
DOE No: 0441  
DOE Coord: T.M. Levinson

Title: Method and Apparatus for Applying Metal Cladding of Surfaces and Products Formed Thereby.

Description: A formulation and application method to prevent biofouling of ships hulls, offshore drilling platforms, and similar types of under-ocean structures.

Inventor: Alexander Bosna  
State: PA  
Contact: Alexander Bosna  
Copperlok, Incorporated  
25 Hatboro PA 19040  
215-441-5390

Status: Award  
Status Date: 05/25/89  
OERI No.: 124646

Patent Status: Patent # - 4618504 and others
Development Stage: Production Engineering
Technical Category: Industrial Processes

Recv by NIST: 11/12/87  
Recom. by NIST: 09/26/88  
Award Date: 05/25/89  
Award Amount: $ 76,162  
Grant No: FG01-89CE15441

Contract Period: 05/25/89 - 05/24/91

Summary: A grant was awarded for the inventor to conduct tests to determine the optimum size for the copper microspheres that are dispersed into the surface to be coated, redesigning the hand-held dispenser, arranging for testing of panels by Glidden for performance, and evaluating ultraviolet curing resins for application to the process. Testing to date in several applications (buoys, boats, and pilings) show no signs of any marine growth after 3 months.

DOE No: 0442  
DOE Coord: G.K. Ellis

Title: Long Life "PC" Drill Bit

Description: A modified drill bit to drill for gas and oil.

Inventor: Richard C Raney  
State: TX  
Contact: Richard C Raney  
Sta-Bit, Incorporated  
Post Office Box #5537  
Midland TX 79704  
915-687-0906

Status: Award  
Status Date: 04/18/89  
OERI No.: 010791

Patent Status: Disclosure Document Program
Development Stage: Prototype Development
Technical Category: Fossil Fuels

Recv by NIST: 04/26/85  
Recom. by NIST: 09/28/88  
Award Date: 04/19/89  
Award Amount: $ 66,188  
Grant No: FG01-89CE15442

Contract Period: 04/19/89 - 06/30/91

Summary: A grant was awarded to build six drill bit/stabilizer prototypes, two each of three different kinds, and test them downhole in an operating oil well. The prototypes were completed and some tests were run showing satisfactory performance. Further tests have been temporarily halted due to disagreements, presently being negotiated, between grantee and the company handling the drilling activities.
DOE No: 0443  DOE Coord: J. Aellen
Title: A Method for the Use of Oxygen Ion Vacancies in Lanthanide Oxides to Increase their Utilization
Description: The invention concerns the use of cerium oxide as a hot gas desulfurization absorbent. The creation of oxygen ion vacancies in the cerium oxide crystal matrix makes it feasible to absorb sulfur from hot product gases coming from a coal gasifier.
Inventor: William G Wilson  Contact: William G Wilson
State : PA 820 Harden Drive
       Pittsburgh, PA 15229
       416-632-5125
Status: Award  Status Date: 09/28/89  OERI No.: 012336
Patent Status : Not Applied For
Development Stage : Laboratory Test
Technical Category: Industrial Processes
Rew by NIST : 08/17/87
Recom. by NIST : 09/29/88
Award Date : 09/28/89  Award Amount: $74,170  Grant No: FG01-89CE15443
Contract Period: 09/28/89 - 09/27/91
Summary: A grant was awarded to Mr. Wilson to test the efficiency of cerium oxide to absorb and desorb sulfur from hot coal gases.

DOE No: 0444  DOE Coord: P. M. Hayes
Title: Apparatus and Method for Using Microwave Radiation to Measure Water Content of a Fluid
Description: A technique is proposed for measuring the water content of oil in transmission and in transportation. The scheme uses microwaves and the spectral differences between water and crude oil to determine the volume fraction of water in the oil.
Inventor: Claude V Swanson  Contact: Claude V Swanson
State : VA  Applied Physics Tech, Inc.
       9700 Aman Chapel Road
       Great Falls, VA 22066
       703-438-1860
Status: Award  Status Date: 05/03/89  OERI No.: 012478
Patent Status : Not Applied For
Development Stage : Concept Development
Technical Category: Miscellaneous
Rew by NIST : 12/02/87
Recom. by NIST : 09/30/88
Award Date : 05/03/89  Award Amount: $88,769  Grant No: FG01-89CE15444
Contract Period: 05/03/89 - 11/02/90
Summary: A grant of $88,769 was awarded on May third, 1989, to develop and test a half-scale bench model using a chirped microwave signal ranging from one to 26 GHz.
DOE No: 0445  DOE Coord: A.R.Barnes
Title:  Condenser Tube Insertion Device
Description: An apparatus to automatically install tubes in steam surface condensers for construction and retubing operations. This technique allows expedited insertion (concept model increased over 300%), and reduces downtime through quality control features, thereby avoiding tube material waste and premature equipment failure.
Inventor: Richard G. Gilbertson
State: MN
Contact: Richard G. Gilbertson
2464 East Medicine Lake Blvd
Plymouth, MN  55441
612-545-7433
Status: Award  Status Date: 08/28/89  OERI No.: 125848
Development Stage: Concept Development
Technical Category: Combustion Engines & Components
Recv by NIST: 03/08/88
Recom. by NIST: 10/12/88
Award Date: 08/28/89  Award Amount: $77,000  Grant No: FG01-89CE15445
Contract Period: 08/28/89 - 08/28/91
Summary: A grant was awarded to design, build and test hydraulic and pneumatic versions of the device.

DOE No: 0446  DOE Coord: G.K.Ellis
Title:  Heavy Oil Recovery Process
Description: A process for recovering viscous oils from deep underground formations; this process is applicable to the recovery of heavy oil from reservoirs located below the Arctic permafrost zone.
Inventor: Michael Gondouin
State: CA
Contact: Michael Gondouin
Thirty-Two San Marino Drive
San Rafael, CA  94901
415-456-8237
Status: Award  Status Date: 09/29/89  OERI No.: 011958
Development Stage: Concept Development
Technical Category: Fossil Fuels
Recv by NIST: 12/01/86
Recom. by NIST: 10/26/88
Award Date: 09/29/89  Award Amount: $78,000  Grant No: FG01-89CE15446
Contract Period: 09/29/89 - 09/28/91
Summary: A grant was awarded to perform the conceptual engineering and to estimate the facilities cost, specifically for the West Sak heavy oil reservoir located on the North Slope of Alaska. The grant work is proceeding satisfactorily and on schedule.
DOE No: 0447  DOE Coord: J.Aellen
Title: Hot Control of Unit Volume Energy of Grinding
Description: A production metal grinding system based upon predictive control of machine operating parameters to control the unit volume energy of high-speed grinding.

Inventor: Roderick L Smith  Contact: Roderick L Smith
State: IL  2012 Greenfield Lane
         Rockford  IL  61107
         815-399-5614

Status: Award  Status Date: 09/27/89  OERI No.: 012418
Patent Status: Disclosure Document Program
Development Stage: Engineering Design
Technical Category: Industrial Processes

Recv by NIST: 10/15/87
Recom. by NIST: 10/26/88
Award Date: 09/27/89  Award Amount: $71,313 Grant No: FG01-89CE15447
Contract Period: 09/27/89 - 09/26/91

Summary: A grant was awarded to Mr. Smith to build and test a high-speed computer-regulated grinding machine.

DOE No: 0448  DOE Coord: J.Aellen
Title: New Automatic Transmission for Road Vehicles
Description: An hydrostatic transmission, utilizing novel variable displacement hydraulic pumps and motors.

Inventor: Ingo Valentin  Contact: Ingo Valentin
State: WI  8945 Park Plaza
         Brown Deer  WI  53223
         414-786-9257

Status: Award  Status Date: 09/29/89  OERI No.: 012013
Patent Status: Patent # - 4615467
Development Stage: Concept Development
Technical Category: Transportation Systems, Vehicles & Components

Recv by NIST: 01/27/87
Recom. by NIST: 10/26/88
Award Date: 09/29/89  Award Amount: $77,770 Grant No: FG01-89CE15448
Contract Period: 09/29/89 - 09/28/91

Summary: A grant was awarded to Mr. Valentin to design, build and test a production prototype.
DOE No: 0449    DOE Coord: J. Aellen
Title:       Fuel Savings in the Heavy Trucking Industry Through Cool Storage
Description: A cool storage system, using gas clathrates as the cool storage media, has been developed to store cool from the excess capacity in a truck air-conditioning system when the truck is driven and to use the stored cool to condition the sleeper compartment at rest stops without needing to operate the truck engine and waste fuel.

Inventor:  Peter Carr
State : NC
Contact:
208 Coventry Lane
Cary NC 27511
919-489-8783

Status: Award    Status Date: 06/20/89    OERI No.: 012335
Development Stage : Prototype Development
Technical Category: Transportation Systems, Vehicles & Components

Summary: A grant was awarded to Mr. Carr to build and test a prototype.


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DOE No: 0450    DOE Coord: G.K. Ellis
Title:       Portable Ultrasonic Inspection System for Oil Country Tubulars
Description: An ultrasonic detection method for inspecting defects in tubular goods by the oil and gas industry. The device is capable of operating as a mobile unit or at a fixed site facility and for inspecting both ferrous and non-ferrous tubes.

Inventor:  David Siverling
State : TX
Contact:
David Siverling
Tubular Ultrasound, Inc.
P O Box #9643
Houston TX 77213
713-453-3047

Status: Award    Status Date: 07/23/90    OERI No.: 012115
Patent Status : Patent # -
Development Stage : Production Engineering
Technical Category: Fossil Fuels

Summary: A grant was awarded to build the electronic assembly and control unit of an advanced prototype of a fieldworthy portable pipe-handling system for test in U.S. Steel's tubular production plant in Birmingham, Alabama.
DOE No: 0451	DOE Coord: G.K. Ellis
Title: In-Place Asphalt Pavement Restoration, via Recycling of the Existing Materials
Description: A self-contained, self-propelled street paving machine that employs a three-stage heating and stripping process. It recycles the old, existing asphalt pavement by softening it up with surface heaters in 0.5-inch depth increments, picking it up with augers, and mixing it with an added asphalt rejuvenating agent. The new aggregate is then laid over the reworked surface. A steel-wheeled roller follows to compact the recycled mix.
Inventor: Larry A Yates
State: SC
Contact: Larry A Yates
Status: Analysis
Status Date: 11/23/88
OERI No.: 012091
Patent Status: Patent # - 4545700
Development Stage: Production Engineering
Technical Category: Industrial Processes
Recv by NIST: 03/04/87
Recom. by NIST: 11/23/88
Summary: The inventor, we have been advised, has entered into bankruptcy proceedings and disposition of assets including the invention is being determined by the Bankruptcy Court.

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DOE No: 0452	DOE Coord: T.M. Levinson
Title: Magnetic Thin Films Formed in a Glow Discharge
Description: A low temperature plasma chemical vapor deposition process for producing non-equilibrium phases on substrates
Inventor: Thomas J O'Keefe
State: MO
Contact: Robert Killoren
Status: Decision Phase
Status Date: 09/29/89
OERI No.: 012349
Patent Status: Not Applied For
Development Stage: Working Model
Technical Category: Industrial Processes
Recv by NIST: 08/27/87
Recom. by NIST: 12/13/88
Summary: Paperwork is being prepared for a grant.
ENERGY RELATED INVENTIONS PROGRAM - BRIEF STATUS REPORT

DOE Coord: J. Aellen

Title: Particle Densitometer Based on the Acoustical Resonance Measurement

Description: A method is proposed for simultaneously measuring both the number density of coal particles in a flow and the average particle size. The method is based upon an acoustic resonance measurement technique. Preliminary measurements have been performed on one of the vertical run, 21-inch diameter coal transport pipes for unit 1 of the Salt River Project's Coronado Generating Station which have favorably demonstrated the methodology.

Inventor: Alan A Vetter
State: CA
Contact: Alan A Vetter
Humberg Mtn. Res Laboratories
P.O. Box 1380
Duarte CA 91010
818-359-4483

Status: Award
Status Date: 06/30/89
OERI No.: 012021

Patent Status: Not Applied For
Development Stage: Working Model
Technical Category: Miscellaneous

Recv by NIST: 01/29/87
Recom. by NIST: 12/23/88
Award Date: 06/30/89
Award Amount: $88,887
Grant No: FG01-89CE15453
Contract Period: 06/30/89 - 06/29/91

Summary: A grant was awarded to the Humbug Mountain Research Laboratories to build and test an advanced prototype.

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DOE Coord: G. K. Ellis

Title: Mercury-Free PVT Apparatus for Thermophysical Property Analyses of Hydrocarbon Reservoir Fluids

Description: The invention is a novel apparatus to measure thermodynamic and phase data of fluids and fluid mixtures in general, with an emphasis on petroleum fluids. The unique feature of this new instrument is in replacing mercury by a precision piston.

Inventor: John S Lievois
State: TX
Contact: John S Lievois
Ruska Instrument Corporation
3601 Dunvale
Houston TX 77063
713-975-0547

Status: Award
Status Date: 08/16/90
OERI No.: 012458

Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Combustion Engines & Components

Recv by NIST: 11/09/87
Recom. by NIST: 01/05/89
Award Date: 08/16/90
Award Amount: $62,200
Grant No: FG01-90CE15454
Contract Period: 08/16/90 - 01/31/92

Summary: A grant was awarded to develop and test a fieldworthy prototype of a mercury-free PVT system for thermophysical property analysis of hydrocarbon reservoir fluids.
DOE No: 0455  
DOE Coord: J.Aellen

Title:  
Thermoelectric Generator for Diesel Engines

Description:  
A thermoelectric direct-current generator, intended for use on diesel-powered trucks, which utilizes engine exhaust heat to generate electrical power for truck operation. The device replaces the conventional alternator.

Inventor: John C Bass  
State : CA

Contact:  
John C Bass  
Electro Technology Corporation  
11180 Roselle Street  
Suite "G"  
San Diego, CA 92121  
619-453-6777

Status: Award  
Status Date: 09/29/89  
OERI No.: 012406

Patent Status:  
Not Applied For

Development Stage:  
Concept Development

Technical Category:  
Transportation Systems, Vehicles & Components

Recv by NIST: 09/30/87  
Recom. by NIST: 01/12/89  
Award Date: 09/29/89  
Award Amount: $ 83,775  
Grant No: FG01-89CE15455

Contract Period: 09/29/89 - 09/28/90

Summary:  
A grant was awarded to build a laboratory apparatus and operate it to provide design data for a large-scale natural gas conversion process.

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DOE No: 0456  
DOE Coord: L.A.Lee

Title:  
A Large, Balanced Compounded, Hydraulic Stirling Engine with Rotary Shaft Output

Description:  
The application of a hydraulic drive mechanism (to produce rotary motion) to an existing double-acting, "balanced compounded", free-piston Stirling engine concept.

Inventor: Mark Sorvig  
State : MN

Contact:  
Mark Sorvig

Status: Analysis  
Status Date: 01/26/89  
OERI No.: 012852

Patent Status:  
Not Applied For

Development Stage:  
Concept Definition

Technical Category:  
Combustion Engines & Components

Recv by NIST: 03/09/88  
Recom. by NIST: 01/26/89

Summary:  
Recommendation under consideration by DOE.
DOE No: 0457  
DOE Coord: J.Aellen

Title: Continuous Saccharification of Ligno-Cellulosic Biomass in Two Stages

Description: A plug-flow reactor is used to carry out a continuous saccharification of ligno-cellulosic biomass in two stages concurrently. The first stage operates at lower temperature, lower pressure and lower residence time than the second stage. The energy and chemicals from the second stage are recovered to provide heat and catalysts for the first stage.

Inventor: Donald L Brelsford  
Contact: Donald L Brelsford  
Brelsford Engineering, Inc.  
8655 Bridger Canyon Road  
Bozeman MT 59715  
406-586-2840

Status: Award  
Status Date: 09/24/90  
OERI No.: 012475

Patent Status: Disclosure Document Program  
Development Stage: Working Model  
Technical Category: Industrial Processes

Recv by NIST: 11/30/87  
Recom. by NIST: 01/31/89  
Award Date: 09/24/90  
Award Amount: $69,800  
Contract Period: 09/24/90 - 03/23/92

Summary: A grant of $69,000 was awarded on September 24, 1990 to modify existing reactor and test its efficiency.

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DOE No: 0458  
DOE Coord: J.Aellen

Title: Continuous Casting by Float Process of Thin Sheet Carbon Steel

Description: A process for continuous casting of thin sheet carbon steel.

Inventor: James J Dolan  
Contact: James J Dolan

Status: Decision Phase  
Status Date: 09/30/90  
OERI No.: 012196

Patent Status: Disclosure Document Program  
Development Stage: Concept Development  
Technical Category: Industrial Processes

Recv by NIST: 05/06/87  
Recom. by NIST: 02/03/89

Summary: Proposal under consideration by DOE.
DOE No: 0459  DOE Coord: G.K.Ellis
Title: Natural Gas Conversion Process
Description: A process for converting natural gas into liquid hydrocarbons by use of a novel catalyst.
Inventor: Michael Gondouin  
State : CA  
Contact: Michael Gondouin  
Thirty-Two San Marino Drive  
San Rafael CA 94901  
415-456-8237
Status: Award  
Status Date: 09/21/90  
OERI No.: 012493
Patent Status : Patent # - 4705908
Development Stage : Working Model
Technical Category: Industrial Processes
Recv by NIST : 12/14/87
Recom. by NIST : 02/27/89
Award Date: 09/21/90  
Award Amount: $ 79,500  
Grant No: FG01-90CE15459
Contract Period: 09/21/90 - 09/20/92
Summary: A procurement request was initiated for $79,500 to build a laboratory apparatus and operate it to provide design data for a large-scale natural gas conversion process.

DOE No: 0460  DOE Coord: G.K.Ellis
Title: Automatic Whole & Multiple Tree Firewood/Hog Fuel Processor
Description: A portable, self-propelled machine for processing whole trees, capable of operating in remote areas, which will produce chunk wood economically for industrial furnaces at a high production rate. The machine feeds the trees, shears them to length, and splits the wood into the desired length.
Inventor: Warren A Aikins  
State : WA  
Contact: Warren A Aikins  
3489 Indian Creek Drive  
Longview WA 98632  
206-425-5470
Status: Award  
Status Date: 09/29/89  
OERI No.: 012658
Development Stage : Prototype Test
Technical Category: Miscellaneous
Recv by NIST : 05/11/88
Recom. by NIST : 02/27/89
Award Date: 09/14/90  
Award Amount: $ 79,500  
Grant No: FG01-90CE15460
Contract Period: 09/14/90 - 09/09/92
Summary: A grant was awarded to design and build an advanced prototype, and to obtain third party testing and evaluation on-site in cooperation with two different companies representing different user industries.
DOE No: 0461  DOE Coord: J.Aellen
Title:  Thermally Stable Polyenaminonitriles Which Cure Without Evolution of Volatiles
Description:  A new class of thermally stable polymers has been developed that are free from
voids. These polymers are suitable for use as insulating films in
microelectronic components, as cladding for optical fibers or as composite
matrices.
Inventor: James A Moore  Contact: Ray E Snyder
State : NY  200 East Evergreen Avenue
         Tower Center
         Mount Prospect IL 60056
         312-398-1525
Status: Award  Status Date: 09/20/90  OERI No.: 012511
Patent Status : Disclosure Document Program
Development Stage : Laboratory Test
Technical Category: Industrial Processes
Recv by NIST : 12/29/87
Recom. by NIST : 03/21/89
Award Date : 09/20/90  Award Amount: $ 84,760 Grant No: FG01-90CE15461
Contract Period: 09/20/90 - 09/19/92
Summary: Prepare experimental quantities for laboratory testing.

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DOE No: 0462  DOE Coord: T.M.Levinson
Title:  Energy Efficient Asymmetric Pre-Swirl Vane and Twisted Propeller Propulsion System
Description: A method for modifying and optimizing "in flow" conditions for marine
propellers by providing "counterflow" vane assemblies forward of the
propeller.
Inventor: Donald H VanLiew  Contact: Donald H VanLiew
State : MD  Gary E Larimer
         326 Hollyberry Road
         Severna Park MD 21146
         301-647-2855
Status: Award  Status Date: 02/06/90  OERI No.: 012652
Development Stage : Prototype Test
Technical Category: Transportation Systems, Vehicles & Components
Recv by NIST : 05/06/88
Recom. by NIST : 03/29/89
Award Date : 02/06/90  Award Amount: $ 99,818 Grant No: FG01-90CE15462
Contract Period: 02/06/90 - 06/06/92
Summary: "Props and Vanes" will be installed on multiple vessel types in order to
demonstrate the low risk and high return of this fuel-saving and speed-
increasing technology. Grant progress has been sent back by a fire that
destroyed the company's computer and also by the recession affecting the
boating industry.
DOE No: 0463

DOE Coord: G.K. Ellis

Title: Carburetor Fuel Feed System with Bidirectional Passages

Description: A carburetor for spark ignition industrial engines. The carburetor uses fuel and air regulator diaphragms to meter the fuel/air mixture for better part-load fuel economy. Components such as the conventional float system, boost venturi and discharge nozzle are not used.

Inventor: James S Jones
State: TX

Status: Analysis
Status Date: 03/29/89
OERI No.: 012855

Patent Status: Patent # - 4632788
Development Stage: Prototype Test
Technical Category: Combustion Engines & Components

Recv by NIST: 08/13/88
Recom. by NIST: 03/29/89

Summary: Recommendation under consideration by DOE. Awaiting statement of work from the inventor.

DOE No: 0464

DOE Coord: P.M. Hayes

Title: Chain Saw Tip Stabilizing Device for Use with an Anti-Kickback Device

Description: An attachment to a chain saw that promotes cutting of logs by reducing the force required by the operator to feed the saw into the work.

Inventor: Vincent D Morabit
State: SC

Status: Analysis
Status Date: 04/17/89
OERI No.: 012108

Patent Status: Patent # - 4569135 and others
Development Stage: Limited Production/Marketing
Technical Category: Miscellaneous

Recv by NIST: 03/10/87
Recom. by NIST: 04/17/89

Summary: Recommendation under consideration by DOE.
DOE No: 0465  DOE Coord: E.P. Levine
Title: Multiconductive Base Form Microchip Carrier/Connector
Description: A new architecture microchip design that permits up to 300 contact pins per square inch of circuit board. This system, based on an inexpensive family of microchip packages, relies on a series of radial patterns, easily fabricated, like second hand marks on an old fashioned watch. It uses less gold, less copper, less plastic or ceramic, than any other component system; it uniquely offers the promise of reaching 1000 leads per sq/in packaging density.

Inventor: Samuel Goldfarb  Contact: Alan Gray
State: NY
Status: No DOE Support  Status Date: 09/30/90  OERI No.: 012673

Patent Status: Patent # - 5654472
Development Stage: Concept Definition
Technical Category: Miscellaneous
Recv by NIST: 05/18/88
Recom. by NIST: 04/24/89
Summary: Rejected by lack of energy relationship.

DOE No: 0466  DOE Coord: G.K. Ellis
Title: Coal Log Fuel Pipeline Transportation System
Description: A proposed low-cost method for mixing crushed coal with a binder, compressing it into logs and transporting the logs in a waterfield pipeline. At the destination, the logs would be crushed and burned in conventional boilers.

Inventor: Henry Liu  Contact: Gary D Justis
State: MO
Office of Patents & Licensing
509 Lewis Hall
University of Missouri
Columbia, MO 65211
314-882-2821

Status: Award  Status Date: 08/24/90  OERI No.: 012739
Patent Status: Not Applied For
Development Stage: Prototype Test
Technical Category: Fossil Fuels
Recv by NIST: 06/15/88
Recom. by NIST: 04/24/89
Award Date: 08/24/90  Award Amount: $79,516 Grant No: FG01-90CE15466
Contract Period: 08/24/90 - 06/30/92
Summary: A grant was awarded to demonstrate proof of concept for the coal-log pipeline system, with specific emphasis upon showing that the amount of binder for logs with adequate strength to eliminate breakage.
DOE No: 0467  DOE Coord: T.M. Levinson
Title: High Pressure Lubricoolant Jet for Supporting Metal Machining
Description: A method for improving metal cutting by directing a high-pressure coolant jet at the tool contact area.
Inventor: Marian Mazurkiewicz
State: MO

Status: Award  Status Date: 09/28/90  OERI No.: 011847
Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Miscellaneous
Recv by NIST: 05/20/86
Recom. by NIST: 05/17/89
Award Date: 09/28/90  Award Amount: $ 82,941  Grant No: FG01-90CE15467
Contract Period: 09/28/90 - 09/27/92
Summary: A grant was awarded to build a prototype to test the use of the water jets to mill titanium. The tests will measure reductions in energy and labor. If successful, the inventor hopes to license the invention.

DOE No: 0468  DOE Coord: G.K. Ellis
Title: Constant-Torque System for Beam Pumps
Description: A variable frequency electrical drive system for beam pumps to improve efficiency by matching the inherent cyclic loading with the pump's electric motor prime mover that operates efficiently only at constant loading.
Inventor: Duncan M Butlin
State: OK

Status: Award  Status Date: 08/02/90  OERI No.: 012604
Patent Status: Not Applied For
Development Stage: Concept Development
Technical Category: Fossil Fuels
Recv by NIST: 03/28/88
Recom. by NIST: 05/17/89
Award Date: 08/02/90  Award Amount: $ 81,025  Grant No: FG01-90CE15468
Contract Period: 08/02/90 - 02/01/92
Summary: A grant was awarded to design, build, and test a new constant torque system for oil well beam pumps.
DOE No: 0469    DOE Coord: J.Aellen
Title: Recuperator of Flue Gas Heat
Description: The heat in the flue gases of a furnace is transferred to the return air via a heat exchanger, which consists of a flexible metallic sleeve installed over the flue gas pipe and ducted to the return air inlet. A damper controls the air flow through the heat exchanger.
Inventor: Milan Rybak
State : NY
Status: Decision Phase
Status Date: 09/30/90    OERI No.: 012590
Development Stage: Working Model
Technical Category: Buildings, Structures & Components
Recv by NIST: 03/14/88
Recom. by NIST: 05/23/89
Summary: Proposal in negotiation.

DOE No: 0470    DOE Coord: E.P. Levine
Title: Flat Belt Continuously Variable High Speed Drive
Description: A very high speed, continuously variable ratio, flat belt transmission for use in applications such as advanced diesel engines and equipment which use a turbine
Inventor: Emerson L Kumm
State : AZ
Status: Award
Status Date: 08/16/90    OERI No.: 012780
Patent Status: Patent # - 4591351 and others
Development Stage: Concept Development
Technical Category: Transportation Systems, Vehicles & Components
Recv by NIST: 07/06/88
Recom. by NIST: 05/23/89
Award Date: 08/16/90    Award Amount: $ 90,875 Grant No: FG01-90CE15470
Contract Period: 08/16/90 - 08/16/92
Summary: A grant was awarded to build and test a continuously variable high speed flat belt drive that is capable of transmitting a power level suitable for primary application areas.
DOE No: 0471        DOE Coord: G.K. Ellis
Title:  Method and Tool for Logging-While-Drilling
Description: A new and different approach to transmittal of down-hole drilling data, with the potential for transmitting data at a higher rate. A braking device controls the rotational speed of the down-hole instrument turbine/generator to generate pressure pulses in the drilling fluid.

Inventor: Oleg Kotlyar
State : UT
Contact: Oleg Kotlyar
1925 East 1700, South
Salt Lake City UT 84108
801-583-8124

Status: Award
Status Date: 07/20/90  OERI No.: 012680

Patent Status : Patent # - 4734892
Development Stage : Engineering Design
Technical Category: Fossil Fuels

Recv by NIST : 05/20/88
Recom. by NIST : 05/26/89
Award Date : 07/20/90  Award Amount: $ 70,000 Grant No: FG01-90CE15471
Contract Period: 07/20/90 - 01/19/92

Summary: A grant was awarded to build, test, and demonstrate a proof-of-concept breadboard model of a prototype of a measurement-while-drilling turbine pulser.

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DOE No: 0472        DOE Coord: G.K. Ellis
Title:  Method and Apparatus for Maximizing Refrigeration Capacity
Description: This invention involves the modification of a vapor-compression refrigeration system whereby the condenser pressure controls are eliminated so that the condenser pressure varies with the ambient temperature. A small pump is added in the liquid line to prevent formation of flash gas.

Inventor: Robert E Hyde
State : OR
Contact: Robert E Hyde

Status: Analysis
Status Date: 06/14/89  OERI No.: 012838

Patent Status : Patent # - 4599873
Development Stage : Production & Marketing
Technical Category: Buildings, Structures & Components

Recv by NIST : 08/09/88
Recom. by NIST : 06/14/88

Summary: Recommendation under consideration by DOE. Awaiting the inventor's work proposal.
DOE No: 0473  
DOE Coord: G.K. Ellis  

Title: Energy Saving Head Pressure Control System for Air Cooled Condensers  

Description: Improved head pressure control system for air-cooled refrigeration systems.  

Inventor: Andrew O’Neal  
State: WA  

Contact: Andrew O’Neal  
18517 Eighth, Northeast  
Seattle, WA 98155  
206-362-5806  

Status: Award  
Status Date: 09/18/90  
OERI No.: 011513  

Patent Status: Patent # - 4566288  

Development Stage: Prototype Test  
Technical Category: Buildings, Structures & Components  

Recv by NIST: 04/07/86  
Recom. by NIST: 06/14/89  
Award Date: 09/18/90  
Award Amount: $79,453  
Grant No: FG01-90CE15473  
Contract Period: 09/18/90 - 03/19/92  

Summary: A grant was awarded to field test an improved refrigeration system, document the energy savings, and apprise the industry of the results.

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DOE No: 0474  
DOE Coord: J.Aellen  

Title: Sweep-Spike Combination Tillage Tool  

Description: A combination tillage, sweep and fertilizer/herbicide application tool having a tillage point for deep soil penetration, flat wings for sub-surface root cutting, a fertilizer/herbicide application nozzle, and furrow fillers to return the soil displaced by the tillage point, thus substantially reducing loss of vapor when anhydrous ammonia fertilizer is being applied.  

Inventor: James R Mikkelsen  
State: ND  

Contact: James R Mikkelsen  

Status: No DOE Support  
Status Date: 09/30/90  
OERI No.: 012982  

Development Stage: Prototype Test  
Technical Category: Industrial Processes  

Recv by NIST: 11/30/88  
Recom. by NIST: 06/15/89  

Summary: No proposal received.
DOE No: 0475  DOE Coord: J.Aellen

Title: Auxiliary Air Conditioning, Heating and Engine Warming System for Trucks

Description: An auxiliary power unit for trucks. The unit contains a small diesel engine, electrical alternator, water pump, air-conditioning compressor, and heat exchangers; it is intended to keep truck systems operating and the truck engine warm when the main truck engine is not operating.

Inventor: J Rex Greer
State : NM

Contact: J Rex Greer
Drawer One
Sumner NM 88119
505-355-7747

Status: Award  Status Date: 09/18/90  OERI No.: 012445

Patent Status : Patent # - 4682649
Development Stage : Prototype Test
Technical Category: Transportation Systems, Vehicles & Components

Recv by NIST : 10/29/87
Recom. by NIST : 06/16/89
Award Date : 09/18/90  Award Amount: $ 89,997 Grant No: FG01-90CE15475
Contract Period: 09/18/90 - 09/17/92

Summary: Build 7 advance prototypes and test.

DOE No: 0476  DOE Coord: G.K.Ellis

Title: Pickard Line-up Boom

Description: The invention is the addition of a line-up boom to a standard side-boom pipe-laying tractor to allow improvements in pipeline welds, productivity, and safety in laying large-diameter oil and gas pipelines.

Inventor: Kenneth L Pickard
State : OK

Contact: Kenneth L Pickard
3631 South Indianapolis
Tulsa OK 74135
918-747-6070

Status: Award  Status Date: 06/18/90  OERI No.: 012708

Patent Status : Patent # - 4266910 and others
Development Stage : Production Engineering
Technical Category: Miscellaneous

Recv by NIST : 06/06/88
Recom. by NIST : 06/20/89
Award Date : 06/18/90  Award Amount: $ 80,000 Grant No: FG01-90CE15476
Contract Period: 06/18/90 - 12/17/91

Summary: A grant was awarded to build an advanced prototype for use in pipeline construction and, in cooperation with pipeline contractors, to test it under field conditions.
DOE No: 0477          DOE Coord: E.P. Levine
Title:              "Ultra Design Method" - Method for Designing Apparel by Computer
Description:       A PC based computer aided design system for integrating *DSP...OVFL**
Inventor:         Debbie Gioello                     Contact: Debbie Gioello
State:             NY
Status:            Decision Phase                   Status Date: 09/30/90      OERI No.: 012883
Patent Status:     Patent # - 4546434            Development Stage: Concept Development
Technical Category: Industrial Processes
Recv by NIST:      08/24/88                         Recom. by NIST: 07/07/89
Summary:           Proposal under consideration by DOE.

DOE No: 0478          DOE Coord: E.P. Levine
Title:              The "Triple Design Cycle" Cogeneration Program
Description:        The triple combined cycle cogeneration system employs three heat engines and waste heat recovery to efficiently and economically generate electricity. The system is designed for the local distribution site of natural gas transmission networks. The process recovers high pressure energy from the natural gas, maintains the natural gas pipeline temperature, and is designed to maintain a firm rated electric power generation.
Inventor:           George McLean                     Contact: George McLean
State:              TX
Status:             Analysis                           Status Date: 07/19/89      OERI No.: 012489
Technical Category: Combustion Engines & Components
Recv by NIST:       12/11/87                         Recom. by NIST: 07/19/89
Summary:            No proposal received yet.
DOE No: 0479

DOE Coord: T.M. Levinson

Title: Solar Cooker

Description: A solar-cooking device consisting of a direct-focusing, concentrator type of solar reflector and a pot holding element. The reflector lens is assembled from black-iron elements that are coated with reflective plastic film.

Inventor: John B Long
State: FL

Contact: John B Long

Status: Analysis
Status Date: 08/23/89
OERI No.: 011923

Patent Status: Patent # - 4561425
Development Stage: Production & Marketing
Technical Category: Other Natural Sources

Recv by NIST: 11/04/86
Recom. by NIST: 08/23/89

Summary: The inventor will use the services of Volunteers in Technical Assistance (VITA) to conduct a survey of potential markets worldwide for this solar cooker. In addition, VITA will use 20 solar cookers in a field demonstration in Africa. Another 150 solar cookers will be used in a field demonstration in Haiti to determine their effectiveness. The solar Energy Research Institute will perform an evaluation of materials and substrates that could make the solar cooker more economical.

DOE No: 0480

DOE Coord: E.P. Levine

Title: AlasCan Composting Toilet and Greywater Treatment Systems

Description: The invention is an automated tank which composts all organic and human wastes using a minimum amount of water and can be combined with our small extended aeration treatment tank to treat the remaining greywater.

Inventor: Clinton R Elston
State: AK

Contact: Clinton R Elston
P O Box #278
Healy AK 99743

Status: Award
Status Date: 08/20/90
OERI No.: 012799

Development Stage: Production & Marketing
Technical Category: Industrial Processes

Recv by NIST: 07/15/88
Recom. by NIST: 08/25/89
Award Date: 08/20/90
Award Amount: $90,000
Grant No: FG01-90CE15480
Contract Period: 08/20/90 - 08/19/92

Summary: A grant was awarded to explore alternative material and manufacturing methods and costs of fabricating and assembling a lower cost prototype of the system.
**Refrigerant Mixture of R-11 and R-216 to Provide Ice Making Abilities in Centrifugal Compressors**

**Title:** Refrigerant Mixture of R-11 and R-216 to Provide Ice Making Abilities in Centrifugal Compressors

**Description:** An azeotropic mixture of refrigerants intended to convert centrifugal compressor systems from water chilling into ice-making for commercial off-peak air-conditioning.

**Inventor:** Calvin D MacCracken

**State:** NJ

**Status:** No DOE Support

**Patent Status:** Patent Applied For

**Development Stage:** Working Model

**Technical Category:** Buildings, Structures & Components

**Recev by NIST:** 10/08/86

**Recomm. by NIST:** 08/29/89

**Summary:** Recommendation withdrawn at inventor’s request; no longer seeking support funds.

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**Improved Fluid Pumping Device and Liquid Sensor**

**Title:** Improved Fluid Pumping Device and Liquid Sensor

**Description:** The invention is an intermittent gas lift method for producing fluids from shallow stripper wells. A downhole fluid level sensor optimizes the gas injection. It is calculated to allow cost-effective oil production from shallow stripper wells.

**Inventor:** William G Buckman

**State:** KY

**Status:** Award

**Patent Status:** Patent Applied For

**Development Stage:** Limited Production/Marketing

**Technical Category:** Fossil Fuels

**Recev by NIST:** 06/27/88

**Recm. by NIST:** 08/29/89

**Award Date:** 08/02/90

**Award Amount:** $ 80,000

**Grant No:** FG01-90CE15482

**Contract Period:** 08/02/90 - 02/01/92

**Summary:** A grant was awarded to develop and test a field worthy system of improved fluided pumping device and liquid sensor for oil wells.
DOE No: 0483

Title: Downhole Neutron Flux Monitor

Description: A neutron flux monitor for measuring the source strength of 14-MeV pulsed neutron sources in the downhole environment. In effect, this is a new device for "seeing" outside the wellbore, to determine the surrounding properties of the rock strata and associated fluids, for use in oil and gas well drilling.

Inventor: John Bartley Czirr
State : UT

Contact: John Bartley Czirr
1830 East Four Hundred North
Mapleton UT 84664
801-489-8507

Status: Award Status Date: 07/26/90 OERI No.: 012911

Development Stage : Engineering Design
Technical Category: Fossil Fuels

Recv by NIST : 09/30/88
Recom. by NIST : 08/30/89
Award Date : 07/26/90 Award Amount: $ 80,000 Grant No: FG01-90CE15483
Contract Period: 07/26/90 - 01/25/92

Summary: A grant was awarded to complete the engineering development of a downhole neutron flux monitor and to test it.

DOE No: 0484

Title: MUD DEVIL - Deaerator Mixer

Description: A pin-shear mixing system to thoroughly mix materials and additives in drilling mud systems. At the same time it removes air or gas from the mud.

Inventor: R A Miner
State : WY

Contact: R A Miner

Status: Analysis Status Date: 09/12/89 OERI No.: 012843

Patent Status : Patent # - 4334788
Development Stage : Limited Production/Marketing
Technical Category: Industrial Processes

Recv by NIST : 08/12/88
Recom. by NIST : 09/12/89

Summary: Recommendation under consideration by DOE. Awaiting proposal from inventor.
DOE No: 0485  DOE Coord: G.K. Ellis

Title: Method and Apparatus for Placing Cement Plugs in Wells

Description: The invention is a series of elements designed to act as a system to insure that oilfield remedial cementing operations are performed with maximum success. These operations include primary and secondary cementing operations necessary for completion or abandonment of an oil-well.

Inventor: Robert E Bode
State: TX
Contact: Robert E Bode
Plug Monitor Inc
149 Wunderlich Suite 1903
Houston TX 77069
713-586-8363

Status: Award
Status Date: 09/28/90
OERI No.: 012114

Development Stage: Production & Marketing
Technical Category: Fossil Fuels

Recv by NIST: 03/17/87
Recom. by NIST: 09/26/89
Award Date: 09/28/90
Award Amount: $ 42,355
Grant No: FG01-90CE15485
Contract Period: 09/28/90 - 09/27/92

Summary: A grant was awarded to complete the development of a fieldworthy method and apparatus for setting and monitoring cement plugs in oil and gas wells and to test it in a well while it is being drilled.

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DOE No: 0486  DOE Coord: J.A. Aellen

Title: Cotton Stalk and Shredder with Re-Bedder

Description: Cotton field tillage machine used for field traffic control, along with residue shredding during bed preparation.

Inventor: Aldo Ruoza
State: CA
Contact: Aldo Ruoza

Status: Analysis
Status Date: 09/30/90
OERI No.: 002999

Patent Status: Patent # - 4015667
Development Stage: Working Model
Technical Category: Miscellaneous

Recv by NIST: 11/14/77
Recom. by NIST: 09/26/89

Summary: No proposal received as yet.
DOE No: 0487  DOE Coord: P.M.Hayes
Title: Direct Fired Steam Generator
Description: A generator which generates steam by having the water in direct contact with the combustion gases. The steam produced by this means is suitable for curing concrete. Other applications are discussed. Energy efficiency over competing technologies is obtained through the use of a patented design for multiple blowers.
Inventor: David P Welden
State: IA
Contact: David P Welden
Indiana Avenue
Iowa Falls IA 50126
515-648-3021
Status: Award
Status Date: 08/15/90
OERI No.: 012743
Patent Status: Patent # - 4614491 and others
Development Stage: Production & Marketing
Technical Category: Industrial Processes
Recv by NIST: 06/16/88
Recom. by NIST: 10/17/89
Award Date: 08/15/90  Award Amount: $ 76,410 Grant No: FG01-90CE15487
Contract Period: 08/15/90 - 08/14/92
Summary: A grant of $76,410 was awarded on August 15, 1990, to build and test a preproduction prototype of the direct-fired steam generator.

DOE No: 0488  DOE Coord: J.Aellen
Title: A System for Recovering Sulfur from Gases, Especially Natural Gas
Description: A new desulfurization for acid gases is proposed in which hydrogen sulfide is oxidized by sulfite. Recovered elemental sulfur improved the economy of the Modification of the Claus Process. Improvements over other liquid systems include a/ greater sulfur dioxide loading by a factor of 8, thereby reducing liquid circulation rates and equipment size; and b/ reactor operating conditions which eliminate sulfur plugging problems and increase rate.
Inventor: George E Gryka
State: CT
Contact: George E Gryka
Post Office Box #656
Southport CT 06490
203-259-7040
Status: Award
Status Date: 09/10/90
OERI No.: 012789
Development Stage: Engineering Design
Technical Category: Industrial Processes
Recv by NIST: 07/11/88
Recom. by NIST: 10/20/89
Award Date: 09/10/90  Award Amount: $ 90,000 Grant No: FG01-90CE15488
Contract Period: 09/10/90 - 09/09/92
Summary: Build and test a laboratory reactor to prove its efficiency.
DOE No: 0489  DOE Coord: P.M. Hayes
Title: Optimized Control System for Ultra-Efficient Surface Coating Operations
Description: The invention is a spray paint booth ventilation system. It incorporates a movable cab for the operator. The cab is flushed with make-up air while the rest of the spray booth uses recirculated air. The operator need not wear any protective gear while he is protected from fire and explosion risks in the cab.
Inventor: Clyde Smith  Contact: Clyde Smith
State: TN  Status Date: 10/25/89  OERI No.: 012946
Development Stage: Working Model
Technical Category: Industrial Processes
Recv by NIST: 10/31/88  Recom. by NIST: 10/25/89
Summary: Recommendation under consideration by DOE

DOE No: 0490  DOE Coord: G.K. Ellis
Title: Laney Belt Terracer
Description: A combination tillage tool and conveyor for use with farm tractor that is a more energy-efficient and less costly equipment method for constructing terraces for soil conservation. The machine cuts and lifts a soil slice onto the conveyor which deposits the cut soil to the side.
Inventor: Roy N Laney  Contact: Roy N Laney
State: OK  Laney Manufacturing Co.
          Airbase Road
          P.O. Box 1085
          Frederick, OK 73542
          405-335-2362
Status: Award  Status Date: 08/20/90  OERI No.: 013100
Patent Status: Disclosure Document Program
Development Stage: Concept Development
Technical Category: Miscellaneous
Recv by NIST: 03/13/89  Recom. by NIST: 11/13/89
Award Date: 08/20/90  Award Amount: $78,835 Grant No: FG01-90CE15490
Contract Period: 08/20/90 - 02/19/92
Summary: A grant was awarded to build, develop, and demonstrate two advanced terracing prototypes, and to build a trailer that will allow them to be transported for regional demonstration.
DOE No: 0491  
DOE Coord: J.Aellen  
Title: QUBUS III Technology for Producing Ethanol  
Description: Cellulose from leafy sources is disrupted at low temperature by an explosive ammonia boil. This is followed by conventional enzymatic hydrolysis and fermentation leading to ethanol.  
Inventor: Mark Holzapple  
State: TX  
Contact: Earnest Stuart  
106 West Mansfield  
Brenham TX 77833  
409-845-1406  
Status: Award  
Status Date: 09/28/90  
OERI No.: 012969  
Patent Status: Patent # - 4600590  
Development Stage: Engineering Design  
Technical Category: Fossil Fuels  
Recv by NIST: 11/21/88  
Recom. by NIST: 11/17/89  
Award Date: 09/28/90  
Award Amount: $ 86,252  
Grant No: FG01-90CE15491  
Contract Period: 09/28/90 - 09/27/93  
Summary: A three year grant was awarded to optimize the hydrolysis of cellulose into smaller molecules which can be fermented with yeast.

******************************************************************************

DOE No: 0492  
DOE Coord: J.Aellen  
Title: Reactive Sintered Nickel Aluminide  
Description: The invention is a novel method for the fabrication of an intermetallic alloy of nickel and aluminum at subconventional temperatures.  
Inventor: Randall M German  
State: NY  
Contact: Ray E Snyder  
Status: Decision Phase  
Status Date: 09/30/90  
OERI No.: 012540  
Patent Status: Not Applied For  
Development Stage: Concept Development  
Technical Category: Industrial Processes  
Recv by NIST: 02/01/88  
Recom. by NIST: 11/30/89  
Summary: Proposal under consideration by DOE.
DOE No: 0493  DOE Coord: T.M. Levinson

Title: Airfoil Design with Improved Aerodynamic Characteristics

Description: A subsonic airfoil having a step-down in the upper surface. The step reduces separation, thus increasing the maximum lift coefficient and minimum drag coefficient, over a wide range of angles of attack.

Inventor: Demeter G Fertis  Contact: Demeter G Fertis
State: OH  Status: Analysis
Status Date: 12/07/89  OERI No.: 012683

Patent Status: Patent # - 4606519
Development Stage: Prototype Development
Technical Category: Transportation Systems, Vehicles & Components

Recv by NIST: 05/24/88
Recom. by NIST: 12/07/89

Summary: Recommendation under consideration by DOE.

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DOE No: 0494  DOE Coord: J. Aellen

Title: Recovery of Dilute Aqueous Butanol by Adsorption on Lignin

Description: Butanol, that inhibits the fermentation of sugars, is removed by adsorption on Lignin.

Inventor: Michael R Ladisch  Contact: Michael R Ladisch
State: IN  Status: Decision Phase
Status Date: 09/30/90  OERI No.: 012833

Patent Status: Not Applied For
Development Stage: Laboratory Test
Technical Category: Industrial Processes

Recv by NIST: 08/08/88
Recom. by NIST: 12/14/89

Summary: Proposal under consideration by DOE.
DOE No: 0495

Title: Method for Monitoring Thinning of Pipe Wall

Description: An on-line method for continuously monitoring wall thinning of pipe while it is in service.

Inventor: Joran Hopenfeld
State: MD

Contact: Joran Hopenfeld
1224 Yale Road
Rockville, MD 20850
301-340-1625

Status: Award
Status Date: 08/22/90
OERI No.: 013060

Patent Status: Patent # - 4779453
Development Stage: Concept Development
Technical Category: Miscellaneous

Recv by NIST: 02/16/89
Recom. by NIST: 12/15/89
Award Date: 08/22/90
Award Amount: $84,720
Grant No: FG01-90CE15495
Contract Period: 08/22/90 - 02/21/92

Summary: A grant was awarded to develop the specifications for the design, installation, and operation of systems to monitor general pipe wall thinning due to erosion/corrosion in energy production and process facilities.

DOE No: 0496

Title: Spiral Track Oven

Description: A continuous process oven for use in continuous semiconductor chip packaging to be used in the organic burn-out process step.

Inventor: Sandor Drobilisch
State: CA

Contact: Sandor Drobilisch

Status: Analysis
Status Date: 09/30/90
OERI No.: 013133

Patent Status: Patent # - 4582484
Development Stage: Concept Development
Technical Category: Buildings, Structures & Components

Recv by NIST: 03/29/89
Recom. by NIST: 01/22/90

Summary: No proposal received as yet.
DOE No: 0497       DOE Coord: G.K.Ellis
Title:     Downhole Casing Repair System
Description: The invention is a downhole casing repair system for oil and gas wells. A metallic patch with epoxy cement is used to cover the leaks and expand in-place by inflating a packer.
Inventor: Charles H Koster
Contact: Charles H Koster
State: TX
Status: Analysis
Status Date: 01/22/90
OERI No.: 013152
Development Stage: Prototype Test
Technical Category: Fossil Fuels
Recv by NIST: 04/21/89
Recom. by NIST: 01/22/90
Summary: Recommendation under consideration by DOE. Awaiting proposal from inventor.

DOE No: 0498       DOE Coord: G.K.Ellis
Title: Hydrocarbon Reserve Evaluation/Determining Permeability in Hydrocarbon Wells
Description: A system for calculating the amount of hydrocarbon present in underground formations and the permeability to fluid flow as the formation is being drilled.
Inventor: Daniel E Boone
Contact: Daniel E Boone
State: TX
IDL, Incorporated
3727 Pinemont Drive
Houston TX  77018
713-688-5011
Status: Award
Status Date: 09/13/90
OERI No.: 013033
Patent Status: Patent # - 4765182
Development Stage: Limited Production/Marketing
Technical Category: Fossil Fuels
Recv by NIST: 01/26/89
Recom. by NIST: 01/31/90
Award Date: 09/13/90
Award Amount: $ 79,756
Grant No: FG01-90CE15498
Contract Period: 09/13/90 - 03/12/92
Summary: A grant was awarded to finish the development of a complete new fieldworthy, user-friendly system of "mud-logging." This shall be a method for hydrocarbon reserve evaluation and for determining permeability in hydrocarbon wells that is capable of being tested in a well while it is being drilled.
DOE No: 0499  DOE Coord: P.M.Hayes

Title: Electrostatic Agglomerator

Description: Agglomeration of dust particles is achieved by charging one-half of the stream positively and the other half negatively and the subsequent recombination.

Inventor: V Hruby
State: MA

Contact: Robert De Saro
J. Busel Company, Incorporated
Nineteen Kearney Road
Needham MA 02194
617-449-9254

Status: Award  Status Date: 09/20/90  OERI No.: 012897

Patent Status: Not Applied For
Development Stage: Laboratory Test
Technical Category: Industrial Processes

Recv by NIST: 09/21/88
Recom. by NIST: 02/06/90
Award Date: 09/28/90  Award Amount: $74,867 Grant No: FG01-90CE15499
Contract Period: 09/28/90 - 09/27/92

Summary: A grant of $74,867 was awarded on September 28, 1990, to evaluate the electrostatic agglomerator's ability to remove fine particulates from diesel exhaust and other particle laden applications.

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DOE No: 0500  DOE Coord: G.K.Ellis

Title: Neutral Atom Interferometry Gravity Sensor

Description: A neutral beam interferometer is designed to measure local variations in gravity. This will result in highly accurate gravity area surveys for petroleum exploration. The anticipated improvement in accuracy is at least ten thousand fold or better.

Inventor: John F Clauser
State: CA

Contact: John F Clauser

Status: Analysis  Status Date: 02/07/90  OERI No.: 012935

Development Stage: Laboratory Test
Technical Category: Miscellaneous

Recv by NIST: 10/24/88
Recom. by NIST: 02/07/90

Summary: Recommendation under consideration by DOE. Awaiting proposal from inventor.
DOE No: 0501  DOE Coord: T.M. Levinson
Title: High Efficiency Dehumidifier/Air Conditioner
Description: A system of heat pipes that are placed in the airducts of an air-conditioning system between the return and supply ducts and thereby increase the dehumidification capability of the system.
Inventor: Khanh Dinh
State: FL  Contact: Khanh Dinh
Status: Analysis  Status Date: 02/28/90  OERI No.: 012217
Patent Status: Patent # - 4607498
Development Stage: Limited Production/Marketing
Technical Category: Buildings, Structures & Components
Recv by NIST: 05/20/87
Recom. by NIST: 02/28/90
Summary: Recommendation under consideration by DOE.

DOE No: 0502  DOE Coord: E.P. Levine
Title: Mechanically Infinitely Variable Speed Transmission for Automotive Use to Save Fuel
Description: An automotive traction drive continuously variable transmission in which power is transmitted through a rigid circular steel ring instead of a V-Belt.
Inventor: Saul Herscovici
State: IA  Contact: Saul Herscovici
Status: Analysis  Status Date: 03/16/90  OERI No.: 012555
Patent Status: Disclosure Document Program
Development Stage: Engineering Design
Technical Category: Transportation Systems, Vehicles & Components
Recv by NIST: 02/11/89
Recom. by NIST: 03/16/90
Summary: Recommendation under consideration by DOE.
DOE No: 0503
DOE Coord: J.Aellen
Title: Method and Apparatus for Introducing Normally Solid Materials into Substrate Surfaces
Description: A process for producing a surface zone alloy of various metals for large and irregular surfaces.
Inventor: Zhong Xu
Country: Peoples Republic of China
Contact: Roland Lau
Status: Decision Phase
Status Date: 09/30/90
OERI No.: 010944

Patent Status: Patent # -
Development Stage: Working Model
Technical Category: Industrial Processes
Recv by NIST: 06/21/85
Recom. by NIST: 03/23/90
Summary: Proposal under consideration by DOE.

******************************************************************************

DOE No: 0504
DOE Coord: G.K.Ellis
Title: Split Hub Shale Oil Retort
Description: This invention is a novel batch reactor for the recovery of crude oil from oil shale by a high temperature, low-pressure process. The pyrolysis of kerogen in the shale is achieved by periodic contacting of the shale with a hot (500 degrees fahrenheit) heavy oil bath.
Inventor: Carl G Everman
State: KY
Contact: Carl G Everman
Status: Analysis
Status Date: 03/16/90
OERI No.: 012715

Patent Status: Patent # - 4410416
Development Stage: Limited Production/Marketing
Technical Category: Fossil Fuels
Recv by NIST: 06/07/88
Recom. by NIST: 03/16/90
Summary: Recommendation under consideration by DOE. Awaiting proposal from inventor.
DOE No: 0505  DOE Coord: J.Aellen

Title: Vertical Axis Wind Turbine

Description: A vertical axis wind turbine with both a start-up mode and a run mode. The ideal combination is made possible by pitch controlling its airfoil blades in response to aerodynamic moments and centrifugal forces.

Inventor: L Kenyon Liljegren
State: CA

Contact: L Kenyon Liljegren

Status: Analysis  Status Date: 04/13/90  OERI No.: 010438

Patent Status: Patent # - 4430044
Development Stage: Working Model
Technical Category: Other Natural Sources

Recv by NIST: 10/11/84
Recom. by NIST: 04/13/90

Summary: No proposal received as of yet.

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DOE No: 0506  DOE Coord: P.M.Hayes

Title: Improved Poured Concrete Wall Forming System

Description: A method for pouring concrete walls for buildings using rigid insulation board for the concrete form. Hydrostatic forces on the forms during the pour and before the concrete hardens are resisted by thermally insulating plastic ties. The polystyrene forms may either be removed and reused or left in place to provide R-20 insulation. The insulating properties of the forms enable pouring of concrete during the colder portions of the year.

Inventor: Patrick E Boeshart
State: IA

Contact: George E Boeshart

Status: Analysis  Status Date: 04/24/90  OERI No.: 012873

Development Stage: Production & Marketing
Technical Category: Buildings, Structures & Components

Recv by NIST: 08/30/88
Recom. by NIST: 04/24/90

Summary: Recommendation under consideration by DOE.
DOE No: 0507  
DOE Coord: J.Aellen

Title: Utilization of Precipitator Dust Stored at the TVA National Fertilizer Development Center

Description: The disclosure proposes a technology to utilize precipitator dust as a feedback for the electric furnace to produce elemental phosphorus.

Inventor: James C Barber  
State: AL

Status: Analysis  
Status Date: 04/27/90  
OERI No.: 013114

Patent Status: Patent # - 4670240 and others

Development Stage: Production Engineering

Technical Category: Industrial Processes

Recv by NIST: 03/21/89

Recom. by NIST: 04/27/90

Summary: No proposal received as of yet.


DOE No: 0508  
DOE Coord: E.P.Levine

Title: On-Line Mechanical Tube Cleaning for Steam Electric Power Plants on an Open Cooling Water System

Description: A new method for mechanically cleaning heat exchanger tubes.

Inventor: Marvin Echols  
State: TX

Status: Analysis  
Status Date: 05/15/90  
OERI No.: 013535

Patent Status: Patent # - 4569097

Development Stage: Prototype Test

Technical Category: Industrial Processes

Recv by NIST: 10/02/89

Recom. by NIST: 05/15/90

Summary: Recommendation under consideration by DOE.
DOE No: 0509   DOE Coord: G.K. Ellis
Title: Process for Gas Liquid Contacting in Cocurrent Distillation
Description: This invention is an improved distributor for use with a cocurrent distillation column.
Inventor: William R Trutna   Contact: William R Trutna
State: TX
Status: Analysis   Status Date: 05/17/90   OERI No.: 013126
Patent Status: Not Applied For
Development Stage: Prototype Development
Technical Category: Industrial Processes
Recv by NIST: 03/28/89
Recom. by NIST: 05/17/90
Summary: Recommendation under consideration by DOE. Awaiting proposal from inventor.

DOE No: 0510   DOE Coord: G.K. Ellis
Title: Oilwell Power Controller
Description: A microprocessor based controller that monitors and remotely indicates the power utilized by the electric motor driving a conventional beam pump. The parameters monitored include motor overload and underload, real time power consumption, oil flow rate from the well, pressure of oil flow, and ambient temperature. Additional capability is provided for limiting the power demand along with time control capabilities.
Inventor: Neil D Markuson   Contact: Neil D Markuson
State: ND
Status: Analysis   Status Date: 05/17/90   OERI No.: 013203
Patent Status: Patent # - 4767280
Development Stage: Limited Production/Marketing
Technical Category: Fossil Fuels
Recv by NIST: 05/26/89
Recom. by NIST: 05/17/90
Summary: Recommendation under consideration by DOE. Awaiting proposal from inventor.
DOE No: 0511  
DOE Coord: G.K.Ellis  

Title: Subterranean Permeability Modification by Use of a Microbial Polysaccharide Polymer  
Description: This invention is a novel technology for enhanced oil recovery utilizing sol/gel conversion of a microbially generated polysaccharide.  
Inventor: Clarence L Buller  
State: KS  
Contact: Clarence L Buller  
Status: Analysis  
Status Date: 06/04/90  
OERI No.: 013228  

Development Stage: Prototype Test  
Technical Category: Fossil Fuels  
Recv by NIST: 06/21/89  
Recom. by NIST: 06/04/90  
Summary: Proposal received and under consideration by DOE.

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DOE No: 0512  
DOE Coord: E.P.Levine  

Title: Automatic Metering System (AMS)  
Description: A technique for controlling the amount of electrical power delivered to heating cables used to prevent freezing of pipes or other freeze-prone vessels.  
Inventor: Jeffrey P Hausler  
State: TX  
Contact: Jeffrey B Moore  
Status: Analysis  
Status Date: 06/13/90  
OERI No.: 012556  

Patent Status: Not Applied For  
Development Stage: Prototype Test  
Technical Category: Buildings, Structures & Components  
Recv by NIST: 02/12/88  
Recom. by NIST: 06/13/90  
Summary: Recommendation under consideration by DOE.
DOE No: 0513

Title: Multiwell Pump

Description: A chain driven sucker rod system that will pump several adjacent wells at the same time with one prime mover.

Inventor: Edward David Dysarz
State: TX

Status: Analysis
Status Date: 06/13/90
OERI No.: 010455

Summary: Recommendation under consideration by DOE. Waiting proposal from inventor.

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DOE No: 0514

Title: Silver Sensor / Energy Wire

Description: A conductive paint has been developed that has better electrical properties while a reduced content of dispersed metal. The paint is suitable for making conductive films for solar cell applications.

Inventor: Delbert E Sayles, Senior
State: NE

Status: Analysis
Status Date: 07/05/90
OERI No.: 012997

Summary: Recommendation under consideration by DOE.
DOE No: 0515  DOE Coord: T.M. Levinson

Title: Vacuum Bagging Apparatus

Description: A new process for vacuum bag molding of laminated composite parts employing a reusable bag.

Inventor: Cosby M Newsom  Contact: Cosby M Newsom
State : CA

Status: Analysis  Status Date: 07/16/90  OERI No.: 012902

Patent Status: Patent # - 4732639
Development Stage: Limited Production/Marketing
Technical Category: Industrial Processes

Recv by NIST: 09/27/88  Recom. by NIST: 07/16/90

Summary: Recommendation under consideration by DOE.

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DOE No: 0516  DOE Coord: P.M. Hayes

Title: Device for Converting Linear Motion to Rotary Motion and Vice Versa

Description: A mechanism has been designed by the inventor for internal combustion engines, pumps and compressors with friction reduction characteristics which could increase efficiency. The design has the potential to be made smaller and lighter with fewer parts, lower manufacturing costs, higher fuel economy and help reduce pollution.

Inventor: Douglas C Brackett  Contact: Douglas C Brackett
State : ME

Status: Analysis  Status Date: 07/23/90  OERI No.: 012999

Patent Status: Patent # - 4685342
Development Stage: Laboratory Test
Technical Category: Combustion Engines & Components

Recv by NIST: 12/14/88  Recom. by NIST: 07/23/90

Summary: Recommendation under consideration by DOE.
DOE No: 0517
Title: Dynamic Gas Pulse Loading System
Description: A gas generating device lowered into a well on electric wireline with the intent of creating and extending multiple fractures in the producing reservoir. The controlled high pressure gases open the reservoir, increasing its permeability and productivity.
Inventor: Henry H Mohaupt
State: CA
Status: Analysis
Status Date: 08/14/90
OERI No.: 013561
Patent Status: Patent # - 4823876 and others
Development Stage: Production & Marketing
Technical Category: Fossil Fuels
Recv by NIST: 10/12/89
Recom. by NIST: 08/14/90
Summary: Recommendation under consideration by DOE.

DOE No: 0518
Title: SHE-INAL - A Stand-Alone Female Urinal Fixture for Public Restrooms
Description: A flexible tube fitted with a disposable paper cuff directs urine flow into a bowl. Use of the device would save significant amount of water (and hence energy) compared with conventional water closets, including those designed for 1.6 gallons-per-flush. The inventions's market survey indicated widespread female dissatisfaction with cleanliness of existing public rest room facilities. The device purportedly eliminates most of these objections.
Inventor: Kathie Kidder Jones
State: FL
Status: Analysis
Status Date: 08/21/90
OERI No.: 013043
Patent Status: Patent # - 4683598
Development Stage: Production Engineering
Technical Category: Buildings, Structures & Components
Recv by NIST: 02/03/89
Recom. by NIST: 08/21/90
Summary: Recommendation under consideration by DOE.
DOE No: 0519       DOE Coord: J.Aellen
Title:            Aerocylinder
Description:      An air spring bellows system is used to replace existing counterbalance or die cushion designs on metal stamping presses or other single action cylinders. The proposed system reduces compressed air leakage.
Inventor:         George Bozich
State:            IL
Contact:          Kenneth L Smedburg
Status:           Analysis Status Date: 08/27/90     OERI No.: 013276
Patent Status:    Patent # - 4796460 and others
Development Stage: Limited Production/Marketing
Technical Category: Industrial Processes
Recv by NIST:     07/27/89
Recom. by NIST:   08/27/90
Summary:          Recommendation under consideration by DOE.

DOE No: 0520       DOE Coord: G.K.Ellis
Title:            Carbon Fiber Reinforced Tin-Superconductor Composites
Description:      A ceramic superconductor interleaved with layers of carbon-fiber reinforced tin composite resulting in a superconducting wire of superior mechanical properties.
Inventor:         Deborah D Chung
State:            PA
Contact:          Deborah D Chung
Status:           Analysis Status Date: 09/06/90     OERI No.: 013066
Patent Status:    Not Applied For
Development Stage: Laboratory Test
Technical Category: Industrial Processes
Recv by NIST:     02/17/89
Recom. by NIST:   09/06/90
Summary:          Recommendation under consideration by DOE.
DOE No: 0521     DOE Coord: E.P. Levine
Title: Ultraviolet Sterilization of Contact Lens
Description: A method for sterilization and disinfection of contact lenses using ultraviolet radiation.
Inventor: Neville A Baron
State: NJ
Contact: Neville A Baron
Status: Analysis
Status Date: 09/18/90
OERI No.: 026067
Patent Status: Patent # - 4063890
Development Stage: Limited Production/Marketing
Technical Category: Miscellaneous
Recv by NIST: 08/21/89
Recom. by NIST: 09/18/90
Summary: Recommendation under consideration by DOE.

*****************************************************************************

DOE No: 0522     DOE Coord: J.Aellen
Title: Aqua-Shear
Description: A new design motionless or static mixer.
Inventor: Paul M Hankison
State: PA
Contact: Paul M Hankison
Status: Analysis
Status Date: 09/24/90
OERI No.: 013406
Patent Status: Patent # - 4647212
Development Stage: Limited Production/Marketing
Technical Category: Industrial Processes
Recv by NIST: 08/31/89
Recom. by NIST: 09/24/90
Summary: Recommendation under consideration by DOE.
DOE No: 0523    DOE Coord: G.K. Ellis

Title:    Power Factor Correction System by Means of Continuous Modulation

Description:    A power factor correction system wherein the compensating reactive power is generated by a linear capacitor. A variable auto-transformer inputs a series transformer which feeds the capacitor. Hence, the voltage applied to the capacitor terminals can be varied from zero to a maximum level. This feature enables the continuous variation of the reactive power generated by the capacitor.

Inventor: Frederick S Rohatyn    Contact: Frederick S Rohatyn
State : NY

Status: Analysis    Status Date: 09/27/90    OERI No.: 013372

Patent Status : Patent # - 4672298 and others
Development Stage : Working Model
Technical Category: Miscellaneous

Recv by NIST : 08/25/89
Recom. by NIST : 09/27/90

Summary: Recommendation under consideration by DOE.
SECTION 4 RECOMMENDED INVENTIONS CROSS REFERENCE LISTS

4.0 Introduction

This section provides three tables for use in locating specific recommended inventions. Table 4-1 is ordered by inventor name and contains the inventor name, DOE number, and invention title. Table 4-2 is ordered by contact name and contains the contact name, DOE number and invention title. Table 4-3 is ordered by inventor state and contains the inventor name, DOE number and Title. Table 4-4 is ordered by invention classification and lists the DOE number, inventor name, and titles associated with each invention classification.
## TABLE 4-1
### RECOMMENDED INVENTIONS BY INVENTOR NAME

<table>
<thead>
<tr>
<th>INVENTOR</th>
<th>DOE NO.</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>John W Ackley, III</td>
<td>0306</td>
<td>An Efficiency Computer for Heated or Air Conditioned Buildings</td>
</tr>
<tr>
<td>Warren A Akins</td>
<td>0356</td>
<td>Portable Automatic Firewood Processor</td>
</tr>
<tr>
<td>Warren A Akins</td>
<td>0460</td>
<td>Automatic Whole &amp; Multiple Tree Firewood/Hog Fuel Processor</td>
</tr>
<tr>
<td>Jerry Aleksandrow</td>
<td>0290</td>
<td>Low Energy Ice Making Apparatus</td>
</tr>
<tr>
<td>Ray Alexander</td>
<td>0347</td>
<td>Oxide Dispersion Strengthened Aluminum Alloys</td>
</tr>
<tr>
<td>Joseph Allegro</td>
<td>0379</td>
<td>Inner Roof Solar System</td>
</tr>
<tr>
<td>James E Altman</td>
<td>0378</td>
<td>An Improved Cutter for Plaster Board and the Like</td>
</tr>
<tr>
<td>Tom Atterbury</td>
<td>0283</td>
<td>Aluminum Roofing Chips</td>
</tr>
<tr>
<td>Don E Avery</td>
<td>0275</td>
<td>Low Head - High Volume Pump</td>
</tr>
<tr>
<td>Don E Avery</td>
<td>0301</td>
<td>Pump Control System for Windmills</td>
</tr>
<tr>
<td>Richard J Avery, Junior</td>
<td>0269</td>
<td>Refrigerant Accumulator and Charging Apparatus</td>
</tr>
<tr>
<td>Richard H Baasch</td>
<td>0257</td>
<td>Method and Apparatus for Melting Snow</td>
</tr>
<tr>
<td>Randell D Ball</td>
<td>0293</td>
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<td>Method and Apparatus for Placing Cement Plugs in Wells</td>
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<td>Duncan M Butlin</td>
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<td>Shih-Chih Chang</td>
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<td>Deborah D Chung</td>
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30 SEPTEMBER 1990
TABLE 4-1 (cont.)

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<td>Multiconductive Base Form Microchip Carrier/Connector</td>
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<td>Process for Treating Humus Materials</td>
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<td>Jeffrey P Hausler</td>
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<td>Meta-Lax Stress Relief for Almost any Size Metal Structure</td>
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<td>Modular Apparatus for Laundry Dryer Heat Recovery</td>
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<td>Mechanically Infinitely Variable Speed Transmission for Automotive Use to Save Fuel</td>
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<td>Frank W Hochmuth</td>
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<td>Steam Generator With Integral Down-Draft Dryer</td>
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<td>Holland Oil Well Pumping System</td>
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<td>Mark Holzapfel</td>
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<td>Microwave Reflection by Synthetic Metals</td>
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<td>The World's First Gas Fired, Forced Air, High Efficiency, Furnace That Requires No Electricity</td>
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<td>Method and Tool for Logging-While-Drilling</td>
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<td>Jack Wade McIntyre</td>
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<td>George McLean</td>
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<td>Ralph A Messing</td>
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<td>Jay Read</td>
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<td>Binary Azeotropic, Hot Gas, Fat Extraction Process</td>
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<td>Machine and Method for Producing Energy-Saving Transformers Incorporating Amorphous Metal Cores</td>
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<td>Douglas R Reich</td>
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<td>Method and Means for Preventing Frost Damage to Crops</td>
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<td>Albert S Richardson, Junior</td>
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<td>A Low Cost Galloping Indicator</td>
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<td>John W Richardson</td>
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<td>R L Risberg</td>
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<td>High Energy Semiconductor Switch</td>
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<td>Robert M Roeglin</td>
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<td>Robert N Rose</td>
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<td>Aldo Ruoza</td>
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<td>Cotton Stalk and Shredder with Re-Bedder</td>
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<td>Milan Rybak</td>
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<td>Recuperator of Flue Gas Heat</td>
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<td>Apparatus for Enhancing Chemical Reactions</td>
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<td>Portable Ultrasonic Inspection System for Oil Country Tubulars</td>
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<td>Hot Control of Unit Volume Energy of Grinding Engine with Rotary Shaft Output</td>
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<td>J Donald Snitgen</td>
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<td>Complete System for Large Solar Water Heating and Storage</td>
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<td>Method and Apparatus for Scrubbing Gas - Scrubbing Apparatus</td>
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<td>William P Strumbos</td>
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<td>Multiple Heat-Range Spark Plug</td>
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<td>David A Summers</td>
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<td>A Waterjet Mining Machine</td>
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<td>Claude V Swanson</td>
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<td>David L Swartz</td>
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<td>Three Tenths Degree Kelvin Closed Cycle Refrigeration System</td>
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<td>Ronald S Tabery</td>
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<td>Aluminum Reduction Cell Spent Potlining Fluid Bed Incinerator</td>
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<td>E M Talbott</td>
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<td>New Automatic Transmission for Road Vehicles</td>
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<td>Particle Densitometer Based on the Acoustical Resonance Measurement</td>
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<td>An Efficiency Computer for Heated or Air Conditioned Buildings</td>
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<td>&quot;Fire Jet&quot; Automatic Anthracite Burner</td>
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<td>Method and Apparatus for Irrigating Container Grown Plants</td>
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<td>Textured Substrate and Method for the Direct, Continuous Casting of Metal Sheet Exhibiting Improved Uniformity</td>
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<td>Frank W Hochmuth</td>
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<td>Steam Generator With Integral Down-Draft Dryer</td>
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<td>Holland Oil Well Pumping System</td>
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<td>Method for Monitoring Thinning of Pipe Wall</td>
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<td>Measurement of Liquid Volumes with Compensation for Temperature Induced Variations</td>
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<td>Preparation of Extremely Fine, Superalloy Powders and Their Fabrication into Dense, Sintered, Net Shape Superalloy Parts</td>
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<td>Bob Johnson</td>
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<td>A Planing Mining Machine to Produce Ultra-Fine Coal</td>
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DATE: 30 SEPTEMBER 1990
## CONTACT  |  DOE NO.  |  TITLE
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James S Jones  | 0463  | Carburetor Fuel Feed System with Bidirectional Passages
Kathie Kidder Jones  | 0518  | SHE-INAL - A Stand-Alone Female Urinal Fixture for Public Restrooms
Ray L Jones  | 0312  | The "Jones AWT", a Micro-Computer-Based Automatic Well Tester for Use of Producing Oil Wells
William A Jones  | 0259  | Hydrostatic Support Sleeve and Rod - Gas Release Probe
Gary D Justis  | 0466  | Coal Log Fuel Pipeline Transportation System
Eskil L Karlson  | 0346  | Ultra-Pure Water System for Hospitals
Eskil L Karlson  | 0422  | High Efficiency Ozone Generating System
Jay Hilary Kelley  | 0394  | Variable Wall Mining Machine
E A Kiessling  | 0251  | Process and Apparatus for Reducing the Energy Required to Separate Liquids by Distillation
Robert Killoren  | 0438  | Microwave Reflection by Synthetic Metals
Robert Killoren  | 0452  | Magnetic Thin Films Formed in a Glow Discharge
Max Klein  | 0314  | Rolling Filter Apparatus
Peter Kneaskern  | 0410  | The World's First Gas Fired, Forced Air, High Efficiency, Furnace That Requires No Electricity
Robert J Koester  | 0282  | Insulated Siding
Charles H Koster  | 0497  | Downhole Casing Repair System
Joyce A Kostura  | 0415  | Oil Recovery by Modified Steam Drive Employing High Velocity Non-Condensible Gas
Oleg Kotlyar  | 0471  | Method and Tool for Logging-While-Drilling
Emerson L Kumm  | 0470  | Flat Belt Continuously Variable High Speed Drive
Michael R Ladisch  | 0494  | Recovery of Dilute Aqueous Butenol by Adsorption on Lignin
Roy N Laney  | 0490  | Laney Belt Terracer
Lawrence W Langley  | 0426  | Eddy Current Transducing System
Roland Lau  | 0503  | Method and Apparatus for Introducing Normally Solid Materials into Substrate Surfaces
W N Lawless  | 0401  | A Miniature, Inexpensive Oxygen-Sensing Element
Leon Lazare  | 0362  | Improved Solvents for the Puraaq Seawater Desalination Process
Leon Lazare  | 0377  | A Novel Method of Producing Ice-Water Slurries
Maurice W Lee, Junior  | 0322  | Electrical Resistance Cooking Apparatus with Automatic Circuit Control
Leonard R Lefkowitz  | 0363  | Impactor Separator
Robert C LeMay  | 0309  | Process of Smelting with Submerged Burner
Donald E Lewis  | 0397  | In Service Tank Bottom Leak Detection and Repair System
George S Lewis  | 0387  | Quiet Operating Internal Combustion Engine with Complete Highly Efficient Expansion Cycle
John S Lievois  | 0454  | Mercury-Free PVT Apparatus for Thermophysical Property Analyses of Hydrocarbon Reservoir Fluids
L Kenyon Liljegren  | 0505  | Vertical Axis Wind Turbine
William Lindner  | 0334  | So-Luminaire Natural Daylighting Unit
Waylon A Livingston  | 0393  | Method and Apparatus for Ultrasonic Testing of Tubular Goods
John B Long  | 0479  | Solar Cooker
Mary Jane Luddy  | 0398  | Hydraulic Test Unit - Test Plugs - Mechanical Seal Plugs
Kenneth E Lunde  | 0427  | Non-Catalytic Steam Hydrolysis of Fats
William C Lyons  | 0338  | Downhole Pneumatic Turbine Motor for Geothermal Energy
Calvin D MacCracken  | 0481  | Refrigerant Mixture of R-11 and R-216 to Provide Ice Making Abilities in Centrifugal Compressors
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DATE: 30 SEPTEMBER 1990
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**PAGE 4-14**

30 SEPTEMBER 1990
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DATE: 30 SEPTEMBER 1990  PAGE 4-25
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DATE: 30 SEPTEMBER 1990
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## APPENDIX B
### TECHNICAL CATEGORIES AND ASSOCIATED INVENTION CLASSIFICATIONS

**TECHNICAL CATEGORY**

**ASSOCIATED INVENTION CLASSIFICATIONS**

1. **Fossil Fuel Production**
   - 1.00000 FUELS AND LUBRICANTS ACQUISITION, PRODUCTION, DISTRIBUTION
   - 1.01000 GEOPHYSICAL PROSPECTING
   - 1.10000 FOSSIL FUELS
   - 1.11000 COAL
   - 1.11100 COAL LIQUIFICATION
   - 1.11200 COAL GASIFICATION
   - 1.11300 GREATER RESOURCE RECOVERY METHODS
   - 1.11400 GREATER RESOURCE RECOVERY EQUIPMENT
   - 1.12000 OIL
   - 1.12100 GREATER RESOURCE RECOVERY METHODS
   - 1.12200 GREATER RESOURCE RECOVERY EQUIPMENT
   - 1.12300 OIL AND GAS WELL PUMPS AND DRILLS
   - 1.12400 OIL AND GAS PIPELINES
   - 1.13000 OIL SHALE
   - 1.13100 TAR SANDS
   - 1.14000 NATURAL GAS
     - 1.14100 CHEMICAL CONVERSION OF GAS TO LIQUIDS

2. **Direct Solar**
   - 2.10000 SOLAR COLLECTORS
   - 2.11000 SOLAR TO DIRECT MECHANICAL ENERGY
   - 2.12000 SOLAR ELECTRIC POWER GENERATING SYSTEMS
   - 2.13000 PHOTOVOLTAIC DEVICES
   - 2.14000 SOLAR CONCENTRATORS - PHOTOVOLTAIC
   - 2.15000 SOLAR CONCENTRATORS - THERMAL
   - 6.22000 SOLAR HEATERS
   - 6.22100 SOLAR HEATERS - HEAT STORAGE
   - 6.31100 SOLAR HEATERS

3. **Other Natural Sources**
   - 1.20000 ALTERNATE FUELS
   - 1.21000 PROPANE
   - 1.22000 METHANE
   - 1.23000 HYDROGEN
   - 1.24000 ALCOHOLS
   - 1.25000 HYBRID FUELS
   - 1.26000 FUEL CELLS
   - 1.27000 FUEL ADDITIVES
   - 1.28000 BIOENGINEERING AND MEDICAL
   - 1.28100 BIOMASS
   - 1.29000 MISCELLANEOUS SYNTHETIC PROCESSES
   - 2.00000 ENERGY CONVERSION FROM NATURAL SOURCES (NOT INCLUDED BELOW)
   - 2.20000 GEOTHERMAL
   - 2.21000 ELECTRICAL POWER GENERATION
   - 2.30000 OCEAN THERMAL
   - 2.40000 WIND
   - 2.41000 WIND DRIVEN MOTORS & COMPONENTS THEREOF
   - 2.42000 WIND PROCESSES USING ENERGY FROM WIND

B-1
## APPENDIX B

**TECHNICAL CATEGORIES AND ASSOCIATED INVENTION CLASSIFICATIONS**

### TECHNICAL CATEGORY

#### ASSOCIATED INVENTION CLASSIFICATIONS

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3.00000 ENERGY CONVERSION FROM SECONDARY SOURCES (NOT INCLUDED BELOW)

3.01000 ENERGY CONVERSION FROM SECONDARY SOURCES - THERMODYNAMICS

4. **Combustion Engines & Components**

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3.21000 STEAM ENGINES AND TURBINES, THERMO

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5.40000 HIGHWAY VEHICLES AND SYSTEMS

5.41000 HIGHWAYS, STREETS AND TRAFFIC CONTROL

5.42000 VEHICULAR POWER SYSTEMS (NOT INCLUDED BELOW)

5.42100 COMBUSTION ENGINE VEHICLES

5.42200 ELECTRIC VEHICLES

5.42300 STEAM VEHICLES

5.42400 HYBRID VEHICLES

5.43000 VEHICULAR COMPONENTS

5.43100 VEHICLE TRANSMISSIONS

5.43200 VEHICLE BRAKING SYSTEMS (INCLUDES REGEN. BRAKING SYSTEMS, ETC.)

5.43300 VEHICLE WHEELS AND TIRES
# APPENDIX B

## TECHNICAL CATEGORIES AND ASSOCIATED INVENTION CLASSIFICATIONS

### TECHNICAL CATEGORY

### ASSOCIATED INVENTION CLASSIFICATIONS

5. **Transportation Systems: Vehicles & Components (cont.)**
   - 5.43400 VEHICLE SUSPENSIONS
   - 5.43500 VEHICLE BODY AND CHASSIS DESIGN
   - 5.43600 VEHICLE LUBRICATION SYSTEMS
   - 5.43700 DRIVER AND FUEL ECONOMY CONTROL SYSTEMS
   - 5.43800 VEHICLE AIR CONDITIONING

6. **Building, Structures & Components**
   - 6.00000 BUILDINGS, STRUCTURES AND COMPONENTS
   - 6.10000 DESIGN, CONSTRUCTION AND CONSTRUCTION PRACTICES
   - 6.20000 HEATING, COOLING, VENTILATING
   - 6.20100 HEATING, COOLING AND VENTILATING INSTRUMENTS AND CONTROLS
   - 6.21000 FIREPLACES
   - 6.23000 BOILERS AND FURNACES (INDUSTRIAL)
   - 6.23100 SMALL BOILERS, FURNACES AND STOVES
   - 6.23100 BOILER AND FURNACE FLUE HEAT RECOVERY
   - 6.23200 BOILER AND FURNACE AIR AND OXYGEN INDUCTORS AND INJECTORS
   - 6.23300 BOILERS AND FURNACES FLUE VENT CONTROL
   - 6.23400 BOILER AND FURNACE OIL BURNERS
   - 6.23500 BOILER AND FURNACE STOKERS (INDUSTRIAL)
   - 6.23600 BOILER AND FURNACE COMBUSTION CONTROLS AND EQUIPMENTS
   - 6.23700 BOILER AND FURNACE COAL-OIL-WATER MIXTURES
   - 6.23800 COMBUSTION, CHEMICAL
   - 6.24000 ELECTRIC HEAT
   - 6.25000 HEAT PUMPS
   - 6.26000 AIR CONDITIONING & REFRIGERATION
   - 6.27000 VENTILATING SYSTEMS
   - 6.28000 HUMIDIFICATION SYSTEMS
   - 6.29000 SOLAR AIR CONDITIONING
   - 6.30000 HOT WATER SUPPLY
   - 6.31000 HEATING SYSTEMS (HOT WATER)
   - 6.32000 HOT WATER CONSERVATION DEVICES AND PRACTICES
   - 6.40000 INSULATION AND INSULATING PRACTICES
   - 6.50000 ELECTRICAL WIRING AND FIXTURES
   - 6.60000 PLUMBING AND FIXTURES

7. **Industrial Processes**
   - 7.00000 INDUSTRIAL PROCESSES (NOT INCLUDED BELOW)
   - 7.01000 CHEMICAL, CHEMICAL PROCESS INDUSTRIES UNIT OPERATIONS
   - 7.01100 IRON AND STEEL
   - 7.01200 PRIMARY NON-FERROUS METALS
   - 7.01300 FABRICATED METAL PRODUCTS
   - 7.01400 AIR SEPARATION
   - 7.01500 WATER AND WASTE TREATMENT
   - 7.01600 PACKAGING AND CONTAINERS
   - 7.01700 MISCELLANEOUS - DESALINATION - ELECTROLYSIS
   - 7.01800 SOLAR DISTILLATION PROCESSES
   - 7.01900 SOLAR EVAPORATION PROCESSES
   - 7.02000 TEXTILES, FABRICS, RUGS, CLOTHING
   - 7.02100 POWDER METALLURGY
## APPENDIX B

### TECHNICAL CATEGORIES AND ASSOCIATED INVENTION CLASSIFICATIONS

<table>
<thead>
<tr>
<th>TECHNICAL CATEGORY</th>
<th>ASSOCIATED INVENTION CLASSIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. <strong>Industrial Processes (cont.)</strong></td>
<td></td>
</tr>
<tr>
<td>7.02200 CERAMICS</td>
<td></td>
</tr>
<tr>
<td>7.02300 COMPOSITE MATERIALS</td>
<td></td>
</tr>
<tr>
<td>7.02400 STACK GAS SCRUBBERS</td>
<td></td>
</tr>
<tr>
<td>7.03000 FOOD, FEEDS, LEATHER, FURS, FEATHERS, ETC.</td>
<td></td>
</tr>
<tr>
<td>7.04000 LUMBER, WOOD, WOOD PRODUCTS INDUSTRIAL PROCESSES</td>
<td></td>
</tr>
<tr>
<td>7.05000 PAPER AND ALLIED PRODUCTS</td>
<td></td>
</tr>
<tr>
<td>7.06000 PETROLEUM, OIL AND NATURAL GAS INDUSTRIES</td>
<td></td>
</tr>
<tr>
<td>7.07000 RUBBER AND PLASTICS</td>
<td></td>
</tr>
<tr>
<td>7.08000 STONE, CLAY AND GLASS</td>
<td></td>
</tr>
<tr>
<td>7.09000 PRIMARY METALS</td>
<td></td>
</tr>
<tr>
<td>7.10000 CIVIL ENGINEERING</td>
<td></td>
</tr>
<tr>
<td>7.20000 AGRICULTURE EQUIPMENT AND FARM EQUIPMENT</td>
<td></td>
</tr>
<tr>
<td>7.30000 OIL SPILL RECOVERY</td>
<td></td>
</tr>
<tr>
<td>7.40000 MECHANICAL CONTRIVANCES (NON-VEHICULAR)</td>
<td></td>
</tr>
<tr>
<td>7.50000 SOLAR INDUSTRIAL</td>
<td></td>
</tr>
<tr>
<td>8. <strong>Miscellaneous</strong></td>
<td></td>
</tr>
<tr>
<td>1.30000 GREASES AND LUBRICANTS</td>
<td></td>
</tr>
<tr>
<td>1.40000 Refined Petroleum Products and Additives</td>
<td></td>
</tr>
<tr>
<td>3.30000 AIR COMPRESSORS AND MOTORS</td>
<td></td>
</tr>
<tr>
<td>3.40000 HYDRAULIC PUMPS AND MOTORS</td>
<td></td>
</tr>
<tr>
<td>3.50000 ELECTRIC MOTORS AND GENERATORS</td>
<td></td>
</tr>
<tr>
<td>3.51000 MISCELLANEOUS ELECTRIC POWER GENERATING SYSTEM</td>
<td></td>
</tr>
<tr>
<td>3.60000 CHEMICAL THERMODYNAMICS</td>
<td></td>
</tr>
<tr>
<td>3.61000 PHOTO CHEMICAL</td>
<td></td>
</tr>
<tr>
<td>3.70000 MECHANICAL THERMODYNAMICS</td>
<td></td>
</tr>
<tr>
<td>3.80000 HEAT PUMPS AND REFRIGERATION</td>
<td></td>
</tr>
<tr>
<td>3.90000 HIGHWAY POWER GENERATORS</td>
<td></td>
</tr>
<tr>
<td>4.00000 ENERGY STORAGE AND DISTRIBUTION (NOT INCLUDED BELOW)</td>
<td></td>
</tr>
<tr>
<td>4.10000 ELECTRICAL TRANSMISSION</td>
<td></td>
</tr>
<tr>
<td>4.11000 ELECTRICAL STORAGE (BATTERIES)</td>
<td></td>
</tr>
<tr>
<td>4.12000 ELECTRICAL DISTRIBUTION (TRANSFORMERS, SWITCHGEARS, CONTROLS)</td>
<td></td>
</tr>
<tr>
<td>4.20000 MECHANICAL ELECTRICAL GENERATION, STORAGE, DISTRIBUTION</td>
<td></td>
</tr>
<tr>
<td>4.30000 THERMAL ENERGY STORAGE</td>
<td></td>
</tr>
<tr>
<td>4.40000 PNEUMATIC ENERGY GENERATION, STORAGE, DISTRIBUTION</td>
<td></td>
</tr>
<tr>
<td>4.50000 HYDRAULIC (WATER, PUMPED ENERGY STORAGE, ETC.)</td>
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</tr>
<tr>
<td>4.60000 MISCELLANEOUS POWER GENERATOR, STORAGE AND TRANSMISSION</td>
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</tr>
<tr>
<td>8.00000 CONSUMER PRODUCTS</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B

TECHNICAL CATEGORIES AND ASSOCIATED INVENTION CLASSIFICATIONS

TECHNICAL CATEGORY
ASSOCIATED INVENTION CLASSIFICATIONS

8. Miscellaneous (cont.)

8.10000 CONSUMER EDUCATION AND BEHAVIOR
8.20000 APPLIANCES
8.30000 TOOLS
8.40000 LAMPS AND LIGHT BULBS (6.5 FOR LIGHTING FIXTURES)
9.00000 MISCELLANEOUS
9.50000 INSTRUMENTATION
9.50100 CHEMICAL, BIOCHEMICAL SENSORS AND INSTRUMENTATION
9.50200 ELECTRONIC, OPTICAL SENSORS AND INSTRUMENTATION
9.50300 HEAT TRANSFER, FLUID MECHANICS INSTRUMENTATION
9.51000 ELECTRICAL DEMAND, OVERLOAD OR CONSUMPTION INDICATORS
9.60000 COMPUTER - DATA STORAGE AND RETRIEVAL
9.70000 COMMUNICATION SYSTEMS AND EQUIPMENT
9.80000 PRINTING SYSTEMS AND EQUIPMENT

9. Out of Scope and Unclassifiable

9.10000 NOT ENERGY-RELATED
9.20000 NUCLEAR
9.30000 PERPETUAL MOTION
9.40000 UNINTERPRETABLE
**4. TITLE AND SUBTITLE**

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**11. ABSTRACT (A 200-WORD OR LESS FACTUAL SUMMARY OF MOST SIGNIFICANT INFORMATION. IF DOCUMENT INCLUDES A SIGNIFICANT BIBLIOGRAPHY OR LITERATURE SURVEY, MENTION IT HERE.)**

A brief description of the Energy-Related Inventions Program and all inventions recommended by the National Institute of Standards and Technology to the Department of Energy since the inception of the program, including a brief summary of the current status of each.

**12. KEY WORDS (6 TO 12 ENTRIES; ALPHABETICAL ORDER; CAPITALIZE ONLY PROPER NAMES; AND SEPARATE KEY WORDS BY SEMICOLONS)**

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