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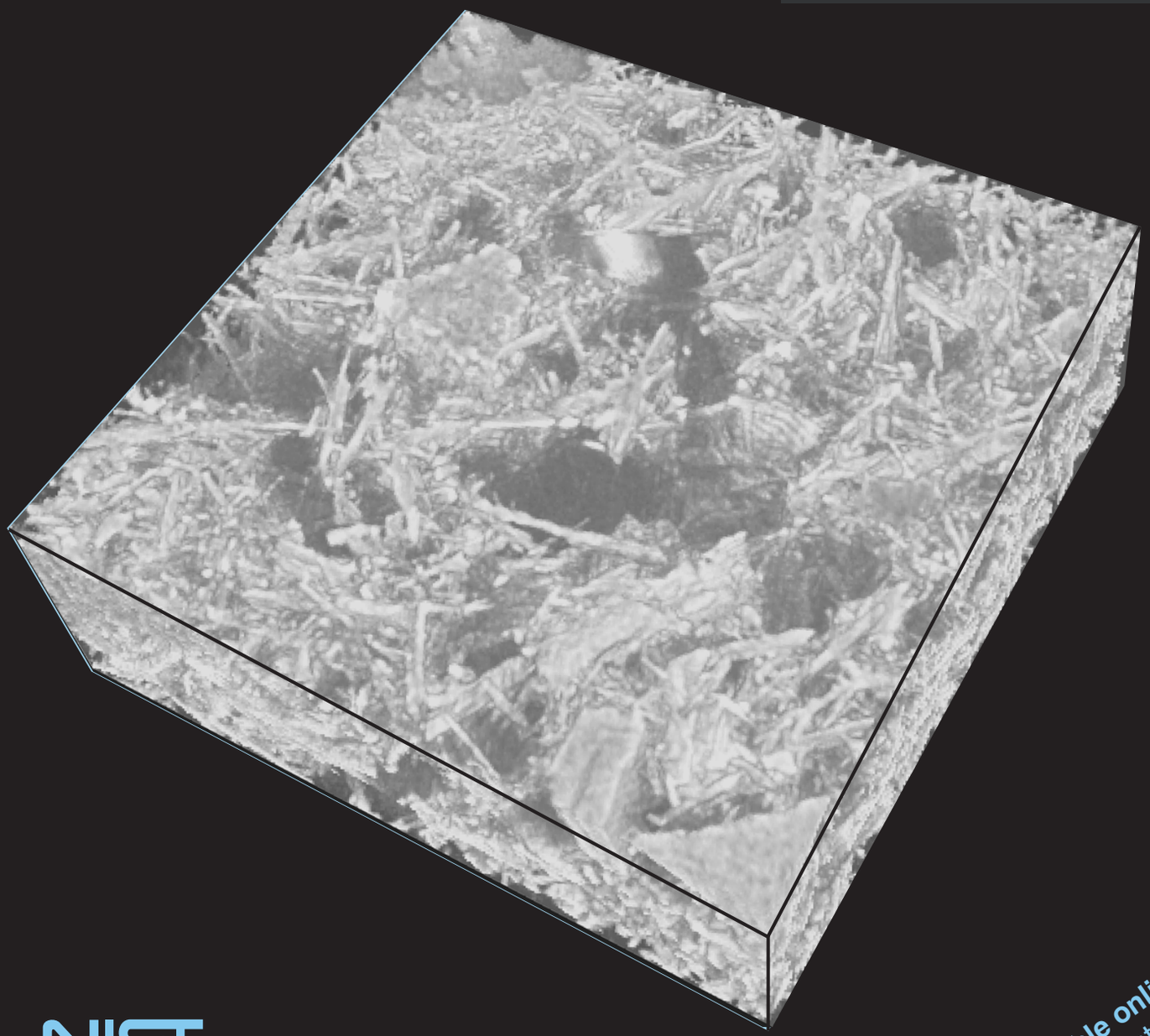

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National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

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The National Institute of Standards and Technology was established in 1988 by Congress to ''assist industry in the development of technology . . . needed to improve product quality, to modernize manufacturing processes, to ensure product reliability . . . and to facilitate rapid commercialization . . . of products based on new scientific discoveries.''

NIST, originally founded as the National Bureau of Standards in 1901, works to strengthen U.S. industry's competitiveness; advance science and engineering; and improve public health, safety, and the environment. One of the agency's basic functions is to develop, maintain, and retain custody of the national standards of measurement, and provide the means and methods for comparing standards used in science, engineering, manufacturing, commerce, industry, and education with the standards adopted or recognized by the Federal Government.

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- Magnetic Technology[1]

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- Computer Security
- Information Access
- Convergent Information Systems
- Information Services and Computing
- Software Diagnostics and Conformance Testing
- Statistical Engineering

[1] At Boulder, CO 80303.
[2] Some elements at Boulder, CO.

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U.S. Department of Commerce—**Donald L. Evans,** Secretary
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National Institute of Standards and Technology—**Arden L. Bement, Jr.,** Director

Cover: 3-D microtomographic image of hydrating Plaster of Paris (water-to-solids mass ratio of 1.0, hydrated for 4 h) obtained at the European Synchrotron Radiation Facility in Grenoble, France in September 2000. A variety of needle-like and flat plate crystals of calcium sulfate dihydrate can be seen. See article p. 137 of this issue for a description of this technique. Shown microstructure is approximately 285 μm × 285 μm × 95 μm. Cover art arranged by C. Carey.

The *Journal of Research of the National Institute of Standards and Technology,* the flagship periodic publication of the national metrology institute of the United States, features advances in metrology and related fields of physical science, engineering, applied mathematics, statistics, biotechnology, and information technology that reflect the scientific and technical programs of the Institute. The *Journal* publishes papers on instrumentation for making accurate measurements, mathematical models of physical phenomena, including computational models, critical data, calibration techniques, well-characterized reference materials, and quality assurance programs that report the results of current NIST work in these areas. Occasionally, a Special Issue of the *Journal* is devoted to papers on a single topic. Also appearing on occasion are review articles and reports on conferences and workshops sponsored in whole or in part by NIST.

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