

## CONTENTS OF VOLUME 18.

	Page.
439. SENSITOMETRY OF PHOTOGRAPHIC EMULSIONS AND A SURVEY OF THE CHARACTERISTICS OF PLATES AND FILMS OF AMERICAN MANUFACTURE. . <i>Raymond Davis and F. M. Walters, jr.</i>	I
440. THE SPECTRAL TRANSMISSIVE PROPERTIES OF DYES: I. SEVEN PERMITTED FOOD DYES IN THE VISIBLE, ULTRA-VIOLET, AND NEAR INFRA-RED. . . . . <i>K. S. Gibson, H. J. McNicholas, E. P. T. Tyndall, M. K. Frehafer, and W. E. Mathewson . .</i>	121
441. NOTES ON STANDARD WAVE LENGTHS SPECTROGRAPHS, AND SPECTRUM TUBES. . . . . <i>W. F. Meggers and Keivin Burns</i>	185
442. WAVE LENGTH MEASUREMENTS IN THE ARC SPECTRA OF NEODYMIUM AND SAMARIUM. . . . . <i>C. C. Kiess</i>	201
443. MEASUREMENT OF THE COLOR TEMPERATURE OF THE MORE EFFICIENT ARTIFICIAL LIGHT SOURCES BY THE METHOD OF ROTARY DISPERSION. . . . <i>Irwin G. Priest</i>	221
444. PRACTICAL SPECTROGRAPHIC ANALYSIS. . . . . <i>W. F. Meggers, C. C. Kiess, and F. J. Stimson</i>	235
445. A PIEZO-ELECTRIC METHOD FOR THE INSTANTANEOUS MEASUREMENT OF HIGH PRESSURES. . . . . <i>J. C. Karcher</i>	257
446. SPECTROPHOTO-ELECTRICAL SENSITIVITY OF ARGENTITE ( $Ag_2S$ ). . . . . <i>W. W. Coblenz</i>	265
447. THEORY, CONSTRUCTION, AND USE OF THE PHOTOMETRIC INTEGRATING SPHERE. . . . . <i>E. B. Rosa and A. H. Taylor</i>	281
448. DECARBURIZATION OF FERROCHROMIUM BY HYDROGEN. . . . . <i>Louis Jordan and F. S. Swindells</i>	327
449. RADIO-FREQUENCY AMPLIFIERS. . . . . <i>P. D. Lowell</i>	335
450. AN ELECTRON TUBE AMPLIFIER USING 60-CYCLE ALTERNATING CURRENT TO SUPPLY POWER FOR THE FILAMENTS AND PLATES. . . . . <i>P. D. Lowell</i>	345
451. SPECTROPHOTO-ELECTRICAL SENSITIVITY OF BOURNONITE AND PYRARGYRITE. . . . . <i>W. W. Coblenz and J. F. Eckford</i>	353
452. STRUCTURE OF MARTENSITIC CARBON STEELS AND CHANGES IN MICROSTRUCTURE WHICH OCCUR UPON TEMPERING. . . . . <i>Henry S. Rawdon and Samuel Epstein</i>	373
453. PREPARATION AND PROPERTIES OF PURE IRON ALLOYS: I. EFFECTS OF CARBON AND MANGANESE ON THE MECHANICAL PROPERTIES OF PURE IRON. . . . . <i>Robert P. Neville and John R. Cain</i>	411
454. ACTION OF CHARRED PAPER ON THE PHOTOGRAPHIC PLATE AND A METHOD OF DECIPHERING CHARRED RECORDS. . . . . <i>Raymond Davis</i>	445
455. TABLES FOR THE CALCULATION OF THE INDUCTANCE OF CIRCULAR COILS OF RECTANGULAR CROSS SECTION . . . . . <i>Frederick W. Grover</i>	451
456. SPECTROPHOTO-ELECTRICAL SENSITIVITY OF SOME HALIDE SALTS OF THALLIUM, LEAD, AND SILVER. . . . . <i>W. W. Coblenz and J. F. Eckford</i>	489
457. GASES IN METALS: I. THE DETERMINATION OF COMBINED NITROGEN IN IRON AND STEEL AND THE CHANGE IN FORM OF NITROGEN BY HEAT TREATMENT. . . . . <i>Louis Jordan and F. E. Swindells</i>	499
458. APPARATUS FOR THE DETERMINATION OF THE MAGNETIC PROPERTIES OF SHORT BARS. . . . . <i>M. F. Fischer</i>	513

	Page.
459. THE STRUCTURE OF FUCOSE.....	<i>E. P. Clark</i> 527
460. FURTHER TESTS OF STELLAR RADIOMETERS AND SOME MEASUREMENTS OF PLANETARY RADIATION.....	<i>W. W. Coblenz</i> 535
461. SPHERICAL ABERRATION OF THIN LENSES.....	<i>T. Townsend Smith</i> 559
462. VARIOUS PHOTO-ELECTRICAL INVESTIGATIONS.....	<i>W. W. Coblenz</i> 585
463. PREPARATION AND PROPERTIES OF PURE IRON ALLOYS: II. MAGNETIC PROPERTIES OF IRON-CARBON ALLOYS AS AFFECTED BY HEAT TREAT- MENT AND CARBON CONTENT.....	<i>W. L. Cheney</i> 609
464. PREPARATION AND PROPERTIES OF PURE IRON ALLOYS: III. EFFECT OF MANGANESE ON THE STRUCTURE OF ALLOYS OF THE IRON-CARBON SYSTEM.....	<i>Henry S. Rawdon and Frederick Sillers, jr.</i> 637
465. COMPOSITION, PURIFICATION, AND CERTAIN CONSTANTS OF AMMONIA....	<i>E. C. McKelvy and C. S. Taylor</i> 655
466. WAVE LENGTH MEASUREMENTS IN THE ARC SPECTRA OF GADOLINIUM AND DYSPROSIUM.....	<i>C. C. Kiess</i> 695
467. SPECIFIC VOLUME OF SATURATED AMMONIA VAPOR.....	<i>C. S. Cragoe, E. C. McKelvy, and G. F. O'Connor</i> 707
468. FORMULAS AND TABLES FOR THE CALCULATION OF THE INDUCTANCE OF COILS OF POLYGONAL FORM.....	<i>Frederick W. Grover</i> 737