

*David Q. McDowell, Editor*

This Standards Update focuses on the work of American Society for Testing and Materials (ASTM) Committee E12 on Color and Appearance and on one of the ASTM publications for which E12 is responsible: *International Standards on Color and Appearance Measurement*.

I recently received a copy of this publication and was reminded again of its value and of the excellent work done by ASTM and in particular Committee E-12. It seemed an appropriate time to revisit ASTM in our Standards Update and also highlight the availability of the seventh edition of this valuable book.

For most of us in the imaging community, ASTM is not a familiar standards body. The majority of the ASTM committees are involved with issues far removed from imaging. However, Committee E12 (along with committees D01 on Paint and Related Coatings, Materials and Applications, D06 on Paper and Paper Products, and E43 on SI Practice) provides many useful tools for our use.

#### What is ASTM?

ASTM is a not-for-profit international organization that provides a forum for the development and publication of voluntary consensus standards for materials, products, systems, and services. ASTM develops documents in 130 areas, covering subjects such as metals, paints, plastics, textiles, petroleum, construction, energy, the environment, consumer products, medical services and devices, computerized systems, electronics, and many others.

ASTM develops six principal types of documents. These are:

**Standard Test Method**, a definitive procedure for the identification, measurement, and evaluation of one or more qualities, characteristics, or properties of a material, product, system, or service that produces a test result.

**Standard Specification**, a precise statement of a set of requirements to be satisfied by a material, product, system, or service that also indicates the procedures for determining whether each of the requirements is satisfied.

**Standard Practice**, a definitive procedure for performing one or more specific operations or functions that does not produce a test result.

**Standard Terminology**, a document comprising terms, definitions of terms, descriptions of terms, explanations of symbols, abbreviations, or acronyms.

**Standard Guide**, a series of options or instructions that do not recommend a specific course of action.

**Standard Classification**, arrangement or division of materials, products, systems, or services into groups based on similar characteristics such as origin, composition, properties, or use.

While many ASTM standards are processed as ANSI standards, most of the more than 10,000 ASTM standards published each year carry only the ASTM logo.

Several of the ASTM committees also serve as the Secretariat and/or USTAG to ISO committees.

#### What is Committee E12?

The scope of E12 is to promote knowledge of color and appearance properties and characteristics, and to encour-

age the improvement and development of standards for describing and evaluating color and appearance properties.

In many ways, E12 provides the practical tools for the industrial implementation of the work of the CIE. Many of the standard practices developed by E12 build directly on the more general principals defined by the CIE. In all cases, the E12 Specifications and Standard Practices are more specific and/or tailored to a given application area.

An excellent example of the synergy between the work of E12 and the CIE is ASTM E308, Standard Practice for Computing the Colors of Objects by Using the CIE System. The introduction to E308 states: "Standard tables of color matching functions and illuminant spectral power distributions have since 1931 been defined by the CIE, but the CIE has eschewed the role of preparing tables of tristimulus weighting factors for the convenient calculation of tristimulus values.

There have subsequently appeared numerous compilations of tristimulus weighting factors in the literature with disparity of data resulting from, for example, different selections of wavelength intervals and methods of truncating abbreviated wavelength ranges.

In 1970, Foster et al. proposed conventions to standardize these two features, and Stearns published a more complete set of tables. Stearns' work and later publications, such as the 1985 revision of E 308, have greatly reduced the substantial variations in methods for tristimulus computation that existed several decades ago."

#### The Book

The seventh edition of ASTM Standards on Color and Appearance Measurement, compiled by ASTM Committee E-12, continues the series as originally conceived by Richard S. Hunter, the former Chairman of ASTM Committee E-12. Published in 2004, it includes all revisions to existing standards made since the publication of the sixth (2000) edition as well as a number of new standards.

It is intended to provide guidance in the instrumental and visual appraisal of the appearance of materials, to include specific measurement instruments and techniques for their use. Appearance appraisal involves standard illuminants and observers, as well as actual light sources and human observers.

Materials include those which reflect and transmit light, and which are self-luminous. 113 ASTM standards are included, most of which relate to a variety of materials. The titles of 146 additional ASTM standards are given where applicable to only one class of materials or where appearance is only a small part of the overall standard.

The Introduction and accompanying tables continue to provide a basic overview of the science of appearance. While it is not intended to be an all encompassing reference, the important distinctions between the various optical properties of materials are covered along with the appropriate standard test methods. Several U.S. industry specific organizations also have standards for the analysis of appearance of materials. For the purpose of identification, the applicable methods of three of these industries are listed in the tables. These include the titles of 26 TAPPI (Technical Association of the Pulp and Paper Industry) standards, three

AATCC (American Association of Textile Chemists and Colorists) methods and seven Evaluation Procedures, and twelve SAE (Society of Automotive Engineers) methods applicable to automotive materials. Also included are the titles of 16 ISO and JIS standards applicable to appearance measurement for several different types of materials.

### Why should you care?

This is not only a complete compendium of the ASTM standards for color and appearance measurement but an index and roadmap to most existing standards in this area. It is a robust 779 pages. No other such index and roadmap exists and ASTM E12 (and Richard Harold the editor) deserve our thanks for this newest edition.

### How to get it?

The seventh edition of ASTM Standards on Color and Appearance Measurement is available either as a CD-ROM or as a printed publication. In either form the cost is \$165.00. (By the way, this cost is far less than the cost of buying even a few of the standards included as individual documents.) It can be ordered from the ASTM store at [www.astm.org](http://www.astm.org).

The CD-ROM contains all of the documents as PDF files and includes easy access via indexes and search tools.

For suggestions for (or input to) future updates, or standards questions in general, please contact the author at [mcdowell@npes.org](mailto:mcdowell@npes.org) or [mcdowell@kodak.com](mailto:mcdowell@kodak.com).

## Berg and Chibisov Prizes Awarded at ICIS'06

*Annabel Muentzer*

As part of the International Congress of Imaging Science '06, held in Rochester, NY in early May, the International Committee for Imaging Science (ICIS) was very pleased to present the 2006 Berg and Chibisov Prizes to Dr. Mel Sahyun and Dr. Paul Gilman. The awards were presented at the festive Congress reception held at the George Eastman House International Museum of Photography and Film on the evening of May 9 by Dr. Tadaaki Tani, President of ICIS.

The Berg Prize was established in memory of Prof. W. F. Berg, for many years the President of ICIS under its previous name of the International Committee on the Science of Photography (ICSP). Prof. Berg made many significant contributions to silver halide photography and to unconventional photographic processes and was a dedicated promoter of international collaboration in the imaging science community. The prize recognizes distinguished scientists and technologists who have done important work in the area of silver halide photography, unconventional photographic processes, and/or new materials and processes for imaging science and technology. Significant contributions to the development of international collaboration in the field of imaging science and technology are also an important qualification for the prize. In awarding Dr. Sahyun the 2006 Berg Prize, the International Committee honors his distinguished contributions to the field of imaging science and technology in acting for nearly 10 years as the editor of the *Journal of Imaging Science and Technology*. He has further contributed by his strong and enthusiastic involvement in imaging science and technology as an organizer, chairperson, and presenter at various international meetings for many years. He has also published many important papers featuring his breadth of knowledge of the imaging field, especially photothermography, which was originally "unconventional" and is now a very active area in silver halide photography.

Mel recognizes that this Award is as much to the *Journal* as to himself, personally, and is thus really shared by all those IS&T members who have supported the *Journal* as authors, reviewers, Associate Editors, and finally subscrib-



*From left to right, Mary and Paul Gilman and Mel and Irene Sahyun*

ers. The Award was also enabled by the staff and Board of Directors of IS&T who have provided continuous support for the *Journal* over the tenure of Mel's editorship, and to whom he expressed particular gratitude on occasion of the presentation.

The Chibisov Prize was established in memory of the first Honorary President of ICSP, Prof. K. V. Chibisov, and in recognition of his contributions to the science of silver halide photography. The prize is given for distinguished contributions to the physics and chemistry of silver halide crystals and/or the technology of silver halide materials and processes. The 2006 Prize recognizes Dr. Gilman's significant scientific contributions to the progress of silver halide photography over many years by presenting important papers and lectures on photographic science, especially on spectral sensitization and supersensitization of silver halide photographic materials. In addition, he has contributed to the international activity of the same field as an organizer and a key driving force of important international meetings, symposia, and cooperation including the East-West Symposia, ICPS'78, and the Vogel Centennial. All of his contributions have been notable for his enthusiastic championship of new ideas and directions in photography.