



Fred L. Cook is the 2015 Olney Medal Recipient

Fred L. Cook is the 2015 recipient of the Olney Medal for his wide-ranging contributions to the fields of polymer/textile chemistry applied to sustainable developments in textile/carpet wet processes and novel fiber/materials innovations.

Cook received his BS in Textile Chemistry from the Georgia Institute of Technology (Georgia Tech) in 1971, and a PhD in Organic/Polymer Chemistry with a minor in Chemical Engineering from Georgia Tech in 1975. He gained practical industry experience early on as a shop technician for Avondale Mills in 1969, and after graduate school, as a research chemist with the E.I. Dupont Experimental Station-Pioneering Laboratory.

Cook became assistant professor of polymer/textile chemistry in the School of Polymer, Textile, and Fiber Engineering (PTFE) at Georgia Tech in 1975. He gained tenure while becoming an associate professor in 1980, and assumed the role of founding chair of the interdisciplinary Polymer Education & Research Center as interim chair in 1979. After serving as interim director of PTFE from 1987-1989, Cook was promoted to full professor and school chair, serving in the dual roles until 2002. He is cur-

rently senior professor of polymer/textile chemistry and associate chair for undergraduate programs in the School of Materials Science and Engineering (MSE) at Georgia Tech.

Achievements

Cook's work over the past 40 years has spanned a broad range of interests, pivoting around sustainable textile/carpet wet process developments and novel fiber/materials innovations. His early work evolving from his PhD thesis delved into synthetic organic chemistry with the synthesis and applications of simple macrocyclic (crown) ethers (used to help make inorganic salts soluble in organic solvents, in a process known as phase transfer catalysis) and in crown ether polymer synthesis.

His pioneering work on energy-conserving, sustainable dyeing technologies, such as automated direct dyebath reuse, is and continues to be of major interest and practicality for the textile/carpet industries. These included aqueous-, foam-, and solvent-based dyeing technologies. Cook's research has also impacted cotton-containing yarn slashing and fabric preparation processes. He headed the team that developed the first waterless process for yarn slashing built around continuous electrostatic fluidized powder bed application of a powdered thermoplastic polymer size. Cook also headed the student team that developed the first successful combined desize-scour-bleach, single-step preparation process for fabrics. The latter work won the AATCC Intersectional Technical Paper Competition for the Southeast Section in 1981.

Later in his career, Cook conducted studies in solvent-assisted dye printing of aramid fabrics and studies in inkjet printing. Carbon fiber precursor and process development, material and chemical recovery and recycling, and infill developments for synthetic turf fields were also research topics of interest.

Cook's contributions to the synthesis and characterization of novel anisotropic (materials having physical properties that differ according to the direction measured) polyesters for high performance applications are particularly noteworthy. Included in his group's recent work is research into fiber and polymer products recycling and the study of graphite structure and fiber property relationships leading to the development of sorptive carbon yarns that can be used in chemical warfare environments. Cook's work has exemplified the importance of visionary thinking in turning ideas tested in the laboratory into practical products and processes.





Cook has also excelled as a partner in initiating and sustaining industry-wide collaborative efforts. Initially, he was instrumental in organizing the Textile Industrial Energy Extension Service for the State of Georgia. In 1989, he became a founding member of the Operating Board of the National Textile Center (NTC), a university research consortium centered at eight participating North American universities. The NTC, authorized by the United States Congress through the Department of Commerce, received continuous research funding totaling more than US\$100 M over a 19-year period. As an adjunct to NTC, Cook also conceived and started the Consortium of Competitiveness in the Carpet, Textile, and Apparel Industries (CCTI), a highly-successful research transfer to industry collaboration between Georgia Tech, The University of Georgia, Southern Polytechnic University, and the State of Georgia.

Cook has been an actively participating member of AATCC since 1968. He has served the Association in many roles, helping to achieve significant milestones, including serving as AATCC President (2009-2010), founding and chairing the Association's Materials Interest Group (2005), serving on the AATCC Board of Directors, and chairing and serving on numerous research and administrative committees, including the Executive Committee on Research (ECR). Cook helped plan and implement changes in the AATCC Constitution and By-Laws that led to the formation of the AATCC Interest Groups—Chemical Applications (CAIG), Concept-2-Consumer® (C2C), and Materials (MIG)—in 2004. Cook proposed and helped to implement the Association's Young Entrepreneur Award in 2010. Cook chaired the 2011–2014 Five-Year Strategic Planning Committee, which charted the course for AATCC for years to come. Cook has also supported AATCC's publications, serving as a reviewer for *Textile Chemist and Colorist*, *AATCC Review*, and currently serves on the Editorial Board of the new *AATCC Journal of Research* as well as contributing papers to these publications. He has also served on the Editorial Boards of other industry-based and scientific publications, including *Textile World*, *Textile Progress*, and the *Journal of Engineered Fibers and Fabrics (JEFF)*. He has also been active as a consultant and/or expert witness to a variety of textile, polymer, utility companies, and law firms. Cook was recognized for 15 years of service as PTFE School Chair at the Georgia Textile Manufacturer's Association (GTMA)/Textile Education Foundation (TEF) Joint Annual Meeting in May 2000.

Honors and Awards

Several AATCC awards have been garnered by Cook over his long years of service. His 1979 and 1981 Inter-Sectional Paper Competition (ITPC)-chaired teams won awards, the only two times in the 41-year history of the Southeastern Section that this occurred. His 1981 co-authored paper "Reusing Dyebaths in Jet Dyeing" in *Textile Chemist and Colorist* (1981, 13 (12), 266–269) was awarded The AATCC J. William Weaver paper of the year in 1982. He received the AATCC Southeastern Section Service Award in 1987. The Harold C. Chapin Award for service to AATCC was presented to Cook in 2005. The Chapin Award is the highest honor the Association offers to members who serve AATCC with distinction and long-term commitment.

Cook has been a member of and honored by many international scientific and professional organizations over the years. He is an active member of the American Chemical Society (ACS), Sigma Xi (Scientific Honorary), Delta Kappa Phi (Textile Honorary), Tau Beta Phi (Engineering Honorary), Phi Kappa Phi (Honorary), the National Council for Textile Education, and The Fiber Society.

The Olney Medal

Established in 1944 in honor of Louis Atwell Olney, the founder and first president of AATCC, the Olney Medal recognizes outstanding achievement in textile or polymer chemistry or other fields of chemistry of major importance to textile sciences. The award consists of a gold medal, a scroll, and an honorarium.

Presentation of the medal each year is a highlight of AATCC's International Conference. This year, the conference will be held at the Williamsburg Lodge in Williamsburg, VA, USA from April 19-21, 2016. The Association will present the Olney Medal at the Awards Luncheon on April 21, 2016.

Cook will deliver the traditional Olney Medal Address on April 21 at 8:15 am. The title of his talk is "Forty Years of Research Wanderings in Sustainable Textile/Carpet Wet Processes and Novel Fiber/Material Innovations."

For a complete list of our esteemed past award recipients, visit www.aatcc.org/abt/awards/olney/olney-medal-recipients

