# David Malcolm Lewis to Receive the Olney Medal

David Malcolm Lewis is this year's recipient of the Olney Medal for outstanding achievement in textile chemistry.

The Olney Medal was established in 1944 to recognize outstanding achievement in textile, polymer, or other fields of chemistry of major importance to textile science, including the development of chemical agents or processes used in textile manufacturing or for methods used in textile evaluation.

## Personal Data

A native of Amberley, Gloucestershire, UK, Lewis earned his BSc, with honors, from the University of Leeds in 1963, and a PhD from the University of Leeds in 1966.

Lewis began his career at the International Wool Secretariat (IWS) Ilkley, from 1966–1987, as principal development scientist. He worked at CSIRO, Australia, from 1978–1979, as senior research scientist. He joined the University of Leeds in 1987 and remains as professor emeritus/research professor. In addition, he's served as chief scientific officer for Perachem since 2004, and for *green chemicals plc* since 2006. He has also served as research director for Inovink since 2004.

Lewis and his wife, Barbara, originally of Gateshead, Tyne and Wear, UK, reside in Otley, West Yorkshire, UK. They have three children: Stephen David Lewis, 41, a business development manager for a speech recognition company, living in Pymble, NSW, Australia; Catherine Anne Lewis Davenport, 39, a full-time homemaker living in West Park, Leeds, UK; and Matthew James Lewis, 37, an IT senior technologist at Oracle, living in Haslemere, Surrey, UK; and seven grand-children. In his spare time, Lewis enjoys tennis, fell-walking, and gardening.

## Achievements

Lewis developed and patented Bunte Salt Polymers in 1973, were commercialized and licensed through IWS to Lankro Chemicals and, subsequently, Henkel (currently, this polymer is sold by Cognis as Securlana). At one time, the wool industry bought 50 tons per year of these products.

Lewis' fundamental studies of fiber arylation have led to patents and pilot-scale production of a novel agent coded FAA 200; its main use in the market is in anti-wrinkle finishing, and disperse dyeing wool and cotton.

Lewis and his student, Xiao Ping Lei, first studied the modification of cotton with glycidyl-trimethyl ammonium chloride and its chlorohydrin analogue. The advantages of the procedure

included dyeing in the absence of salt and almost 100 percent reactive dye fixation. Their findings were commercialized by the Virkler Company in Charlotte, N.C., USA. Subsequently, there was significant production of treated cotton in Brazil.

His studies of the effect of reactive dyes on wool setting properties led a to universal understanding of the role of fiber-reactive dyes in inhibiting wool damage during the dyeing process.

Lewis founded Perachem in 2004, as a spin-out company from the University of Leeds. The company holds patents in the fields of non-formaldehyde durable flame retardants for cellulosic fibers, new safer permanent hair dyes, novel bleaching technologies, chlorine-free anti-bacterials, and methods to make wool shrink-resistant and dyeable at lower temperatures (70C) without using chlorine. In 2004, Perachem joined the London stock exchange under the umbrella of *green chemicals plc*; currently the company has five employees with Lewis as chief scientific officer and main board director. The company is actively trialing and developing the new chlorine-free wool top shrink-resist process, hair dyeing, odor-free depilatories, a flame retardant finish for cotton and wool fabrics, and a new low-temperature wool dyeing process.

Lewis also helped develop novel infra-red absorbers and phosphors for high-security printing. The technology is currently being commercialized by Inovink Ltd., where Lewis serves as director of research. Innovink has also patented novel methods to print three-dimensional objects using the desk-top inkjet printer, thus allowing Braille to be printed cheaply at home.

Lewis has also worked on improved reactive dyeing systems for cellulosic materials, including novel four-functional dyes, nucleophilic dyes fixed with a cross-linking agent, neutral dyeing of cellulosic fibers with reactive dyes, reactive cationic agents, reactive fibers rather than reactive dyes; novel cationic reactive dyes for dyeing nylon [the cation is part of the leaving group]; formaldehyde-free cross-linking agents such as triethanolamine-tri-sulfate for giving durable press effects on cotton fabrics.

## Honors and Awards

Lewis was awarded silver medals for three research papers from the Worshipful Company of Feltmakers. In March 1985, he won a silver medal from the Society of Dyers and Colourists (SDC) for Technological Achievement. Lewis served as chair of the West Riding Region, SDC, from 1986 to 1988. He was a member and former chair of the Invited Papers Committee of the SDC. In 1984, Lewis was awarded a fellowship of the Royal Society of Chemistry. He holds visiting professorships in China at the North West Textile Institute (Xian), the University of Heilongjiang (Harbin) and the Technical University of Wuhan. He is a member and former chair of the International Association of Textile Chemists and Colourists Studentship Committee from June 1989 onward. He won a gold research medal from the Worshipful Company of Dyers for papers published on reactive dyes in January 1992.

Lewis served as president of the SDC from 1993 to 1994. He was named a liveryman for the Worshipful Company of Dyers and Freeman of the City of London in January 1995. In April 2005, the Worshipful Company of Dyers awarded Lewis a gold medal for a paper published in *Coloration Technology* regarding the dyeing of nylon with novel quaternary-ethylsulfide-ethylsulfonyl cationic reactive dyes. He was awarded the Millson Award for Invention by the AATCC in 2005. He served as chair of the 11th International Wool Research Conference held at the University of Leeds in 2005. He was also made an honorary member of the SDC in 2006.

Lewis joined AATCC in 1987 and has served on the Publications Committee. He is also a current member of the SDC, the American Chemical Society, and the Royal Society of Chemistry. He has written 219 refereed papers, one book on wool dyeing, five contributed chapters to various textbooks, and holds 40 patents.

**The Olney Medal** was established in 1944 in honor of Louis Atwell Olney, the founder and first president of AATCC. Lewis will receive a gold medal, a scroll, and an honorarium.

Lewis will deliver the traditional Olney Medal Address on Thursday, March 12, at 8:15 a.m. His topic will be "Colour and Textile Chemistry." Presentation of the medal each year is a highlight of AATCC's International Conference. This year, the Association will present the Olney Medal at the conference awards luncheon at noon on Thursday, March 12, at the Hilton Myrtle Beach Resort in Myrtle Beach, S.C., USA. For a complete list of our esteemed past award recipients, visit www.aatcc.org.