DIVISION OF POLYMERIC MATERIALS: SCIENCE & ENGINEERING

Cooperative Research Award in Polymer Science and Engineering

Sponsored by the Eastman Kodak Company

2013 Award Winners

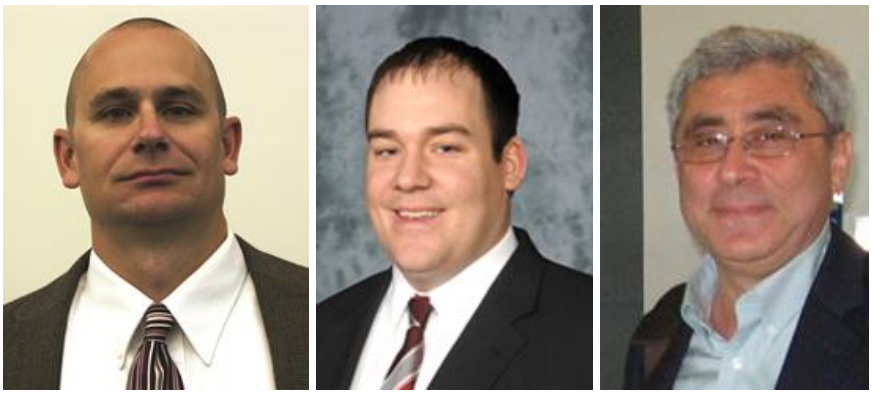
Timothy Bunning

Timothy White

Air Force Research Laboratory

Nelson Tabiryan

BEAM Engineering Corporation



American Chemical Society Division of Polymeric Materials: Science and Engineering's 2013 Award for Cooperative Research in Polymer Science and Engineering is given to Dr. Timothy Bunning [left] and Dr. Timothy White [center] from Air Force Research Laboratory and Dr. Nelson Tabiryan [right] from BEAM Engineering Corporation. This award was initiated in 1992 endowed by a generous gift from the Eastman Kodak Company.

The 2013 award is given in recognition of sustained, intensive, collaborative research spanning over last ten years on concept generation, material development, and commercialization of smart, photo-responsive materials. These researchers championed the use of light as a stimulus and added a significant tool in the hands of materials designer looking for wireless trigger of smart actions and means of massive parallelism. According to the nomination document "they have synergistically used their unique capabilities to address probably the toughest challenge facing the broader stimuli-responsive polymeric community – providing a commercially viable source of novel, highly tailorable stimuli response materials that are critical path enablers for commercial and militarily useful products."

The collaborative work covered three topical areas: (1) photomechanical polymeric materials, (2) color tunable reflective optics, and (3) polarizer-free liquid crystal devices. The need for remotely and wirelessly trigger mechanical and shape adaptive responses in smart materials was met when these researchers jointly synthesized and characterized azobenzenefunctionalized liquid crystal polymer networks photoresponsive polymeric materials. This knowledge was then expanded into construction of optical elements and the mechanisms for active flight control. Their work on photo-actuated liquid crystal systems received coverage in Nature, on the cover of the Journal of Materials Chemistry and Materials Today, as "Best of Optics in 2006", in Optics and Photonics Focus, and in Materials Views. The Crystal Scan Optical Multimeter developed by BEAM Co. based on materials developed jointly with AFRL collaboratots won the Photonics Circle of Excellence Award as one of the 25 most innovative products.

An award symposium to honor the 2013 winners will be held at the national ACS meeting in New Orleans on Tuesday, April 9 (Start: 1:30 PM, Hilton Riverside, Room: Grand Salon D19). The award will be presented at the joint Division of Polymeric Materials: Science and Engineering and Division of Polymer Chemistry joint awards reception on Wednesday evening April 10 in New Orleans.