

俞燕蕾教授



**Title:** Photodeformable Liquid Crystal Polymers and Soft Actuators

**Abstract:** By incorporating azobenzene groups into the crosslinked liquid crystal polymers (CLCPs), large deformations such as contraction and bending have been induced by UV light due to the photoisomerization of the azobenzene chromophores. Since light is an ideal stimulus for it can be localized (in time and space), selective, nondamaging, and allows for remote delivery of energy, photodeformable CLCPs present an interesting opportunity to realize soft actuators in microscope applications. Recently, we incorporated upconversion materials which absorb low-energy light and convert it to higher-energy photons in UV and visible regions, into the CLCP films and succeeded in generating fast bending of the resulting composite films upon exposure to red light and near-infrared light. It would be interesting and significant to develop photodeformable CLCPs which could be photo-regulated by such low-energy light, since it is more environment-friendly and causes less damage.

**CV:** Yanlei Yu is Professor in the Department of Materials Science at Fudan University. She graduated in applied chemistry from Anhui University in 1993 and obtained her Master's degree in polymer chemistry and physics from the University of Science and Technology of China in 1996. She gained her Doctoral degree in environmental chemistry and engineering from Tokyo Institute of Technology and was promoted to Full Professor at Fudan University in 2004. She obtained New Century Excellent Talents Fund of the Ministry of Education (2004), Shanghai Shuguang Scholar (2005), Shanghai Science and Technology Rising Star (2006), Distinguished Young Scholars Award from the National Natural Science Foundation of China (NSFC) (2012), etc.. Her research interests focus on the development of photodeformable smart materials and light-controllable interface materials with photosensitive polymers and liquid crystal polymers. She has over 50 publications in the peer-reviewed journals with more than 1500 citations, such as Nature, J. Am. Chem. Soc., Angew. Chem. Int. Ed., Adv. Funct. Mater., etc..