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IAPME Seminar

Stimuli-Directing Liquid Crystalline Materials: From Tunable Photonics to Deformable Soft Systems and Beyond

20 November 2024

Prof. Quan LI
Southeast University

Venue: N23-1004b
Time: 10:00 – 11:00
Hosted by: Prof. Songnan QU

Abstract

Liquid crystals (LCs) represent a fascinating state of matter that combines order and mobility on a molecular and supramolecular level. The unique combination of order and mobility results in that LC is typically “soft” and responds easily to external stimuli. The responsive nature and diversity of LCs provide tremendous opportunities as well as challenges for insights in fundamental science, and open the door to various applications. Conventional nematic LCs have become the quintessential materials of LC displays. With the LC displays ubiquitous in our daily life, the research and development of LCs are moving rapidly beyond display applications and evolving into entirely new and fascinating scientific frontiers. In my talk, I will present our recent research and development on stimuli-directing liquid crystalline materials with focus on light and electric field as two stimuli: from tunable photonics to photodeformable soft systems.

Biography

Prof. Quan LI is a Distinguished Chair Professor and Director of Institute of Advanced Materials at Southeast University, China. He is the honorary Editor-in-Chief of "Chinese Journal of Liquid Crystals and Displays", the founding Editor-in-Chief of Wiley "Responsive Materials", an editor of Springer Nature “Light: Science & Applications” etc. Li held appointments in USA, Germany, and France. In the past decade, Prof. Li has been a Principal Investigator and Project Director in awarded federal grants from US Air Force Office of Scientific Research, US Air Force Research Laboratory, US Army Research Office, US Department of Energy, US Department of Defense Multidisciplinary University Research Initiative (MURI), US National Aeronautics and Space Administration, and US National Science Foundation, and has advised over 20 postdoctoral fellows and many Ph.D. students. He has edited eight books (2 Wiley-VCH, 2 Wiley, and 4 Springer books), and has co-authored 40 chapters including the invited author of the entry entitled “Liquid Crystals” in the prestigious Kirk-Othmer Encyclopedia. Prof. Li was Alexander von Humboldt Fellow in Germany. He has won the Kent State University Outstanding Research and Scholarship award. He is a Fellow of the Royal Society of Chemistry (FRSC). He has been elected as a member of European Academy of Sciences and a member of European Academy of Sciences and Arts. He has also been honored as Professor and Chair Professor at several universities. Prof. Li’s current research interest spans from stimuli-responsive smart soft matter, advanced photonics, and optoelectronic materials for energy harvesting and energy saving to functional biomedical materials and nanoparticles to nanoengineering and device fabrication. More info about Prof. Li: http://www.quanlilab.com