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SERIES

北京大学工学院

力学与工程科学系

Liquid crystalline materials for functional surfaces



报告人：冯伟（中国科学技术大学）

时 间：9月26日 周四 16:00-17:00

地 点：北京大学工学院新奥工学大楼 2047

内容简介：

Surfaces are the contact position of functional devices. As Wolfgang Pauli indicated, “God made the bulk; the surfaces were invented by the devil”, surfaces are important for the function of devices. We developed responsive polymeric surfaces using liquid crystalline polymers. Liquid crystalline polymers can react to external stimuli including electric fields, light, humidity, etc, and thus lead to the reduction in order parameter. Due to the internal stress, the surface topography is thus changed. We reported the topographical deformation of liquid crystalline coatings using electric fields, and accompanying secondary self-oscillation of the surface. In addition, with the developed dichroic dye strategy, the surface topography can be inverted and corresponding surface adhesion underwater can be switched. By coupling the electric field and light field, we can also introduce sequential logic control to the surface topographical deformation of liquid crystalline polymers. I will also briefly introduce the recently developed electric field-coupled two-photon-polymerization technique for efficient fabrication of structural colorful microstructures.

报告人简介：

Wei Feng is a tenure-track professor at University of Science and Technology of China. He received B.S. and M.S. degrees from University of Science and Technology of China, and Ph.D. from Eindhoven University of Technology in the Netherlands under the supervision of Prof. Dirk Broer. He was a Humboldt postdoctoral fellow in the group of Prof. Metin Sitti at Max Planck Institute for Intelligent Systems in Germany. His research interests include mechanics of soft materials, surface tribology, and soft robots. He serves as junior editorial board member for *Microstructures* and *Journal of Bionic Engineering*.

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