Professor Xiao Li

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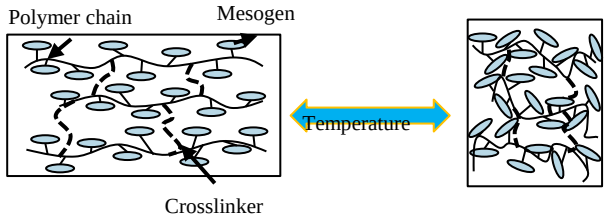
Polymer thin film, Liquid Crystal, Directed Self-assemble soft matters, Membrane, Functional Surface Coatings, Sensor, Nanofabrication
Research Group: 2 PhD, 2 MS students

Liquid crystal elastomer (LCE) enabled temperature sensor by directed self-assembled plasmonic heterostructure

Liquid crystal elastomers

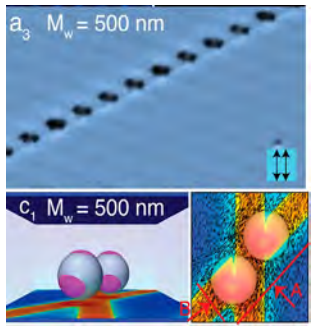
- Polymer networks formed by cross linking liquid crystalline polymers
- Macroscopic deformation of liquid crystal polymer networks
- Reversible shape changes



Nat. Commun., 2017, 8, 15854. *PNAS,* 2017, 114, 10011-10016. *Adv. Funct. Mater.*, 2010, 20(2), 259-265.

Particle directed self-assemble in Liquid crystal

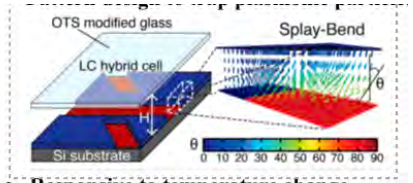
- 2D chemically patterned surfaces to create topological defects
- Particles are assembled in precisely defined locations through defects
- Tunable interparticle distance at nanoscale dimensions.



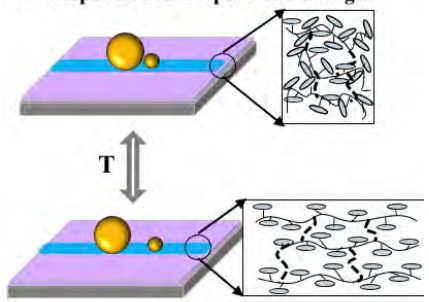
ACS Nano, 2017, 11, 6492-6501.
Adv. Mater. 2015, 27, 7314–7319.

DSA of Plasmonic heterostructure in LCE

- Pattern design to trap plasmonic particles



- Responsive to temperature change



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