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

**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

**DSA of Plasmonic heterostructure in LCE**
- Pattern design to trap plasmonic particles
  - Responsive to temperature change

**Materials used**
- Liquid crystal elastomers
- Crosslinker
- Polymer chain
- Mesogen
- Temperature

**References**