

Smart Materials based on Liquid Crystal Polymers

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Smart materials which change their properties in response to a stimulus are one of the focal points in materials science. The self-assembly of liquid crystals has proven to be an extremely useful tool in the development of such materials. Liquid crystalline polymer materials are appealing as microscopic changes in the molecular order and orientation can lead to macroscopic changes in shape and optical properties. In my lecture, I will discuss stimuli responsive polymers based on liquid crystals that can be applied as soft actuators, robots, color changing materials and sensors (Figure 1).

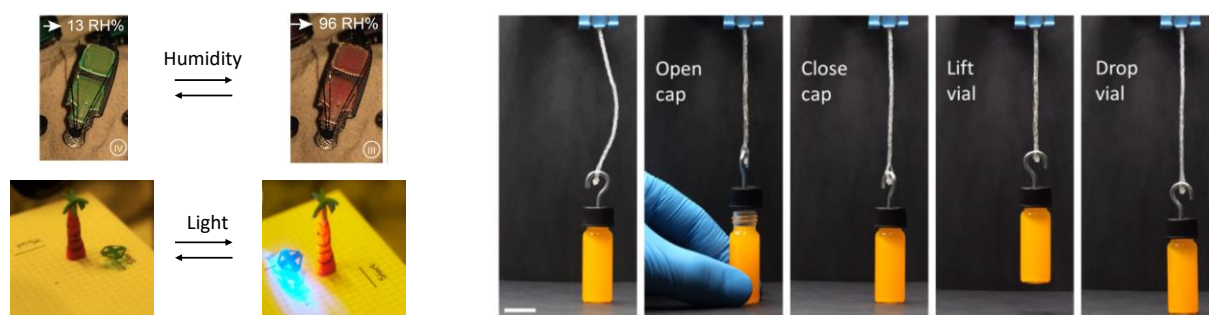


Figure 1. Examples of smart materials based on liquid crystal polymers which respond to temperature (right), humidity (top, left), and/or light (bottom, left) by changing their shape and/or color.

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