

Cholesteric Liquid Crystals

Cholesteric liquid crystal polymers are polymers that are very sensitive to changes in temperature. Depending on the temperature, these polymers align themselves into different layers, with the aligned direction of each layer differing by an angle. This angle governs which wavelength of light is reflected – that is, different temperatures will reveal themselves as different COLORS!

This type of polymer is more popularly seen in mood rings, where the ring inset changes color as a response to body temperature. In this workshop, we will use a blend of cholesteric polymers to make liquid crystal thermometers that change color.

Materials:

Cholesteryl Oleyl Carbonate Cholesteryl Pelargonate
Transparency Sheet Packing Tape
Cotton Swabs Gloves

Procedure

1. Dab mixture onto transparency slide
2. Smear slide piece across substrate to distribute materials evenly
3. Use packing tape to seal edges

Estimated time: 10 minute per person