

#### Photochemical Control:

Fibers were made with a neat 5CB core and a polymer sheath made of a solution containing 12.5 wt% PVP and 3.0 wt % C<sub>4</sub>AzoC<sub>6</sub>PEG<sub>3</sub>. Fibers were deposited onto a microscope slide and are viewed backlit under crossed polarizers. Irradiation with 365 nm light causes the loss of birefringence and irradiation with 400-500 nm light causes the birefringence to return. The “on”/”off” cycle is repeated multiple times.

#### Thermal Control:

Fibers were made with a neat 5CB core and a polymer sheath made of a solution containing 12.5 wt% PVP and 1.0 wt % C<sub>4</sub>AzoC<sub>6</sub>PEG<sub>3</sub>. Fibers were deposited onto a microscope slide and are viewed backlit under crossed polarizers. The sample is heated above its nematic to isotropic transition temperature (c.a. 31 °C) using gentle heating from a heat gun at approximately 20 cm away from the sample. After heating, the birefringence loss can be seen as the LC core becomes isotropic. The birefringence returns upon cooling back below the transition temperature. The “on”/”off” cycle is repeated multiple times.