Chiral Nematic (or Cholesteric) liquid crystals has potential applications to be developed as optical sensors due to its unique optical properties. On shining light on the cholesteric material, wavelength of the incident light that is reflected varies depending on the length of the helical pitch. Therefore, if an analyte acts as a trigger for inducing a change in the helical pitch of the material, that material can be used as an optical sensor for the analyte.

We, therefore, plan to devise stimuli responsive cholesteric liquid crystal-based nanoporous materials which can selectively bind to analytes which are of biomedical importance.

Fig. Schematic showing change in color of a cholesteric film on binding to an analyte

Project:
✓ To synthesize Cholesteric particles
✓ To tune the selectivity and specificity of the cholesteric material by changing the pore dimension and functionalization of the material
✓ to fabricate breath sensor

For details, please contact:
Monali Moirangthem (M.Moirangthem@tue.nl) STO 0.28, tel. 040-247 8781
prof. dr. Albert Schenning (A.P.H.J.Schenning@tue.nl) STO 0.34, tel. 040-2473264