

MATERIALS SCIENCE GRADUATE PROGRAM

SEMINAR ON LIQUID CRYSTALS

FALL 2024



**WEDNESDAY,
DECEMBER 4TH
3:20PM**

AMLCI 101



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Recent Work in Dynamic Response of Polymer Stabilized Cholesteric Liquid Crystals

Cholesteric liquid crystals (CLCs) can self-assemble into helical superstructures, and their resulting optical properties allow CLCs to have a variety of industrial applications, including reflective displays, tunable mirrorless lasers, optical storage devices, tunable color filters, and smart windows. Polymer-stabilized CLC (PSCLC) exhibits a dynamic optical response that can be induced by external stimuli. In this seminar, I will discuss the electro-optic response and potential mechanisms of PSCLCs with negative or positive dielectric anisotropy reported over the past decade by our liquid crystals team. The electric field-induced electro-optic response of PSCLC, including bandwidth broadening and red and blue tuning, is mainly discussed. Recent studies on the phase behavior and electro-optical response of polymer-stabilized blue-phase LC with the addition of amorphous cross-linkers or nanoparticles of various shapes and sizes are also discussed.



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