ADVANCED MATERIALS AND LIQUID CRYSTAL INSTITUTE
at Kent State University

NEWS

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Research Highlights

Tunable lenses with chiral ferroelectric nematic LCs

Electrically Tunable Polymer Stabilized Chiral Ferroelectric Nematic Liquid Crystal Microlenses by **Antal Jákli** *et al.*, *Adv. Opt. Mater.*, 2302500 ASAP (2023).

Shape change of an N-LC droplet from tactoid to torus

Topological transformations of a nematic drop by **Oleg Lavrentovich** *et al.*, *Sci. Adv.* **9**, eadf3385 (2023).

Full-color optical image combiner for AR heads-up display

Full-color optical combiner with good imaging quality and a wide angle of incident light acceptance by **Phil Bos** *et al.*, *Appl. Opt.* **62**, 8918-8923 (2023).

Funding News

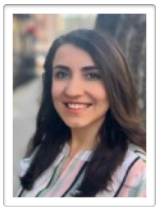
Antal Jakli & **Oleg Lavrentovich** were awarded $126,000 from NATO for a collaborative project with Ukraine scientists focusing on unique approaches for "New photosensitive polymers with embedded intelligence."

Marianne Prévôt (PI) & **Torsten Hegmann** (co-PI) as well as an Ohio industry partner (Ohio Lumex) were awarded $592,000 from the Ohio Bureau of Workers' Compensation for a project on multianalyte-capable toxic gas and vapor sensors for first responders.

Hanbin Mao & **Hao Shen** were awarded $386,000 from NSF for their proposal entitled: "Harnessing the chirality matching principle for enhanced catalytic reactivity."

Awards

Senay Ustunel, a recent graduate from our Material Science Graduate Program (under the mentorship of Dr. Elda Hegmann) was recently awarded the **Julian Baumert PhD Thesis Award** for conducting outstanding thesis work that included significant measurements at the NSLC-II (Brookhaven National Laboratory).



- Dr. **Mietek Jaroniec** again on 2023 list of Highly Cited Researchers (Clarivate™ Web of Science).
- 9 AMLCI scientists on Stanford's 2% List.

Other News

- **AMLCI early-career hire: Dr. Marianne E. Prévôt** was hired as an Assistant Professor (tenure-track) in the Department of Chemistry and Biochemistry. Dr. Prévôt previously managed the AMLCI X-ray Scattering Facility.

- **Mary Ann Kopcak**, after 13+ years as Business Manager at the (AM)LCI, retired in 09/2023. She will be missed.
- **Familiar Faces: Ashley White** is now the new AMLCI Business Manager and **Kyle Neiss** became the new Coordinator (Operations & Special Projects). Congrats!
- The **2024 AMLCI Materials Day** will be held on April 5-6, 2024. The theme for 2024 is **"Optics & Devices"**. Our Keynote Speaker will be **Prof. Nick Abbott** from Cornell University, who will speak on chemomechanics in LCs. **The event will also recognize the 2024 AMLCI Fellowship winners.**

Intel Summer School

This past summer, the AMLCI hosted and co-led the first cohort for the new 5-week Intel Semiconductor Education & Research Program (ISERP) Summer Institute (06.08 - 07.12, 2023) focusing on Cleanroom Technology & Semiconductor Processes. The key to success was a close collaboration between academic institutions as well as industry partners. This approach created an engaging learning experience for all participants.

New NLO Microscope

In July 2023, the AMLCI installed a multimode nonlinear optical microscope in the lower level of the ISB with funding from the KSU Game Changer Program as well as additional financial support from the AMLCI and BHRI.

We have now run all training sessions on the microscope and users should reach out to Dr. Rajib Paul for training and use.

X-ray Scattering Facility

In the Fall of 2023, the AMLCI together with Xenocs has finalized the integration of its 3-D robotic printer with the X-ray Scattering Instrument. Now, 3-D printing is available as a SAXS-WAXS in-operando tool for structural studies on the dynamics of as-printed filaments.