

Matthew Murachver

Résumé

Work Experience

2019 • **National Aeronautics and Space Administration Intern**, NASA Glenn Research Center, Cleveland, OH 44135.

Liquid Crystal Facility Hardware Development Developing hardware and free-standing LC film characterization device in collaboration w/ groups from Univ. CO. Boulder, Case Western Reserve Univ. & LCI Kent State Univ. Deloped microfluidic device for custom flow channels and on-demand fluid homogenization device

2014

Graduate Research Assistant, *CPIP-LCI*, Kent, OH.

Clean room/LCD fabrication photo-lithography, wet-processing, alignment layer deposition, cell assembly, rubbing, sealant, programmable glass scribing, vacuum cell filling

LCD Characterization cell gap, response time, anchoring energy, pretilt, birefringence, electro-optical measurements

Scientific Computing generalized nonlinear regression, numerical solutions to PDEs, molecular dynamics simulation, data acquisition

2013

2017

Teaching Assistant, *Physics Dept. Kent State Univ.*, Kent, OH.

Organized, taught, and graded college physics laboratory course

2015

IRES Researcher, *Otto von Guericke Univ. Magdeburg*, 39106 Magdeburg, Germany.

Characterized electrically responsive liquid crystal fibers, modified & improved custom fibers measurement device

Educational Background

2014

PhD Chemical Physics, *Chemical Physics Interdisciplinary Program - Liquid Crystal Institute, Kent State University* (elsewhere *CPIP-LCI*), Kent, OH.

ADVISOR Professor Antal Jákli

2014

2016

MSc Chemical Physics, *CPIP-LCI*, Kent, OH.

ADVISOR Professor Antal Jákli

2010

2013

BSc Physics, *California Polytechnic State Univ. San Luis Obispo* (hereafter CalPoly-SLO), San Luis Obispo, CA.

Major in Physics, Minor in Mathematics

Research Projects

Scientific Publications

2018
● **Bending nematic liquid crystal membranes with phospholipids**, Soft Matter, 2018,14, 7003-7008.

DOI: 10.1039/C8SM01193A

Pending Publications

2016
■ **Characterization of Mixtures of Twist Bend Nematic Mesogens with Chiral Additives**, CPIP-LCI.

2014
■ **Magneto-Optical Studies on Dimeric Nematogens**, National High Magnetic Field Laboratory.

2014
2015
■ **Spontaneous Lensing by Submerged Chiral Nematic Liquid Crystals**, CPIP-LCI.

Undergraduate Research Project

2012
2013
■ **Centered-Difference Applications for Schrödinger's Equation**, CalPoly-SLO.

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ADVISOR Professor Thomas Gutierrez

Skills

Programming Python, Matlab, LabVIEW, NI-VISA, PyVISA, Arduino, \LaTeX
Proficient Programs SolidWorks, Blender, Unix, Linux, MacOS, Microsoft OS, SketchUp, Microsoft Office, MS Excel, PowerPoint

Other Skills Scientific Communication, Organization, Writing, CNC Milling & Machining
Clean Room Fabrication, Device Prototyping, Optical Device Characterization, Optical Metrology, Computer Aided Design
Interferometry, Ellipsometry

References

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