*Mu-Ping Nieh, PhD.*

CONTACT INFORMATION

Department of Chemical & Biomolecular Engineering (CBE)/Department of Biomedical Engineering (BME)/Institute of Materials Science (IMS), University of Connecticut (UCONN), Storrs, CT 06269, USA

Tel: 860-486-8708

Email: mu-ping.nieh@uconn.edu

EDUCATION

1998 Ph.D. University of Massachusetts, Amherst

Chemical Engineering/Polymer Science & Engineering

1989 B.Sc. National Taiwan University (NTU), Taipei

Chemical Engineering

APPOINTEMENTS

2022 – now Regular Member Connecticut Academy of Science and Engineering (CASE)

2019 – now Professor UCONN

2010 – 2019 Associate Professor UCONN

2007 – 2010 Associate Research Officer National Research Council, Canada (NRC) – Canadian

Neutron Beam Centre (CNBC)

2005 – 2007 Assistant Research Officer NRC-CNBC

2004 – 2005 Research Associate NRC-CNBC/ University of Guelph

2001 – 2004 Visiting Fellow NRC-CNBC, Chalk River Laboratories

1998 – 2001 Postdoctoral National Institute of Standards & Technology (NIST)

Researcher /Penn. State Univ. (PSU)

ACHIEVEMENTS

1. Organized sessions for the annual conferences of national scientific societies: “Biomembrane Synthesis, Structure, Mechanics, & Dynamics” (2014-now) and “Metrology of Characterization, Simulation & Theory of Biomembranes” (2015), symposia at American Chemical Society (ACS); “Structures and Dynamics of Biomimetic Membranes” focus sessions (2012, 2013) at the American Physical Society (APS).
2. Discovered novel aggregation-enhanced emission and aggregation-enhanced photoluminescence of atomically precise Au25-clusters in nanodiscs.
3. Discovered that discoidal lipid nanoparticles have higher cellular uptake than liposomes do.
4. Designed/constructed Canadian first small angle neutron scattering (SANS) instrument based on the configuration of Triple-Axis Neutron Scattering Spectrometer.
5. Supervised 15 graduate and > 40 undergraduate students conducting research
6. Initiated a webinar about “small angle X-ray scattering (SAXS)” and organize a workshop of dynamic light scattering (DLS) at UCONN for industrial researchers.

EXPERIENCES

Research:

1. Designing generalized polymerization in well-defined templates to yield various polymeric nano-morphologies (e.g., nanoring, nanoweb, nanodisc, nanosheet…)
2. Constructing universal nanoparticle-in-nanodisc (NANO2) platform for theranostics
3. Developing new (light, X-ray and neutron) scattering strategies to identify structures with the length scale from Å to micron – applicable for crystals, polymers, composites, micelles, colloids and aggregates.
4. Probing the structure-function relationship of surfactants, soft nanomaterial and biomaterials under various environments (flow, controlled temperature, salinity, humidity) and geometries (thin films, porous media)
5. Investigating kinetics of reaction- and diffusion- limited aggregation processes as well as spontaneous molecular transfer mechanism
6. Establishing the spontaneous structural diagram of external-field alignable phospholipid mixtures (“bicelles”) in solutions, commonly used as substrates for structural study on membrane-associated proteins
7. Developing low-cost, high-sensitivity, instrument-free pathogen-, cell- or toxin- detecting technology
8. Investigating the quenching mechanism of fluorescence-based polymer films for fast explosive detection

Teaching:

1. Offering Courses: “Polymeric Materials”, “Intro to Chemical Engineering Thermodynamics I & II” *(core courses)*, “*Polymer Properties” (core course); “*Nano-Structural Characterization” *– UCONN, Lanzhou Univ. & Tamkang Univ.,*
2. Lecturing “Small Angle Neutron Scattering” (2013) & “High Flux Small-Angle X-ray Scattering on Biological Complex Structures” (2017) *@ Taiwan National Synchrotron Radiation Research Center. “Small Neutron Scattering” @ 2006, 2009, 2013 CNBC summer school*
3. Hosting research sites for training high school students to conduct 4-week research projects at the UCONN Mentor Connection program since 2012 as well as for high/middle school STEM teachers (4-weeks) at Joule program (organized by the School of Engineering, SoE, UCONN) since 2015.
4. Presenting the topic “Principle & Application of Nano-Materials in Biomedical Engineering” for middle and high school teachers at da Vinci Project (organized by SoE, UCONN) since 2013

EXPERIMENTAL EXPERTISE

Small Angle Scattering, Diffraction (Neutron, X-ray and Light), Microscopy (Optical and Electron), Fluorescent Spectroscopy, Differential Scanning Calorimetry

COMMITTEES

* Editorial board member for Journals, *Sci. Rep*. (Nature Publishing Group), *Chem. Eng. & Proc. Tech*., *Indian J. Mat. Sci.* and *SOJ Mat. Sci. & Eng. Guest Editor for “Molecules” on the topic, “Phospholipid: Structures and Functions”.*
* Reviewing neutron scattering beamtime proposals for NIST Center for Neutron Research, ORNL (Spallation Neutron Source and High Flux Isotope Reactor) as well as Center for Functional Nanomaterials (CFN) at Brookhaven Nat. Lab. (BNL) user Proposals.
* Grant proposal reviewer for National Science Foundation (NSF), National Institute of Health (NIH) and Department of Energy (DoE)
* Reviewer for publications in international prestigious journals e.g., *J. Am. Chem. Soc., Nature, Angewandte Chemie, Adv. Func. Mater., Adv. Mater., Small, Phys. Rev. Lett.* *etc*.

## SCIENTIFIC OUTPUT (in APPENDICES)

Refereed Publications: 133 [w/ total citations *> 4650, h-index= 35 (scopus),* citations *> 6000, h-index= 39 (google scholar)*];In Press: 1; Patents: 3; Book Editing: 2; Invited Talks (after 2000): 96; Book Chapters: 9; Conference Contributions: 102

AWARDS/FUNDINGS

Funding (see appendix) Prior to UCONN: $105K

External 7 NSF grants (5 as a PI and 2 as a co-PI); 3 GAANN grants as a co-PI, Industrial Projects (Pfizer, Moderna therapeutix and Beohringer Ingelheim); 1 National Lab (LLNL) grant as a co-PI; in total: ~ $4.0 M (NSF: $2.174M, GAANN: $1.48M, LLNL: $60K, and Industry: $400K)

Internal 4 UCONN grants as a PI (Bioscience Pipeline, START, Research Excellence Program and Faculty Large Research Grant) - $120K or co-PI (Research Excellence Program) – $25K

Awards:

2023 – 2024 M1 Presidential Mentorship Award, the Cato T. Laurencin Institute for Regenerative Engineering, UCONN

2017 – 2018 Director’s Award for Faculty Excellence, IMS, UCONN

2012 – 2013 Director’s Award for Faculty Excellence, IMS, UCONN

2008 NRC – Steacie Institute for Molecular Sciences (SIMS) *“Significant Partnership”* Award

1986 – 1989 3 times of NTU “Book Coupon Awards” (for top 5% academic performance students)

*\*17 Awards to Advisees*

## MEMBERSHIPS

CASE, APS, American Chemical Society, Biophysical Society, Neutron Scattering Society of America, Storrs Chinese Christian Church

