



# The Center for Integrated Nanotechnologies (CINT) Annual Meeting (Virtual), September 20-22, 2022 Meeting Agenda

<b>Day 1</b>	<b>Plenary Session I</b>	Tuesday, September 20
9:00 am	Welcome and Introductions	<i>Jeff Nelson, CINT Director</i>
9:10 am	Basic Energy Sciences (BES) Welcome	<i>Dr. Linda Horton, Associate Director of Science for Basic Energy Sciences</i>
9:20 am	CINT Update	<i>Adam Rondinone, CINT Co-Director</i>
9:45 am	Topological Photonics and Topological Insulator Lasers	<i>Moti Segev, Technion, Israel</i>
10:30 am	Break	
<b>Day 1</b>	<b>Parallel Symposia</b>	Tuesday, September 20
<b>Self-Assembly of Soft Materials I — Polymer Self Assembly</b> <i>Organizers: Mihee Kim, Achraf Noureddine, John Watt</i>		
10:45 am	Freeze-Burn: Polymer-Assisted Rapid Thermal Annealing for Fabricating Porous Carbon Materials.	<i>Reika Katsumata — University of Massachusetts- Amherst</i>
11:15 am	Vapor-Phase Infiltration: Enhancing Functionalities of Self-Assembled Block Copolymer Templates.	<i>Chang-Yong Nam — Brookhaven National Laboratory</i>
11:45 am	3D Printing of Nanostructured Constructs Using In Situ Self-assembly of Surfactants at the Immiscible Interface.	<i>Zahra Niroobakhsh — University of Missouri-Kansas City</i>
12:15 pm	Soft Matter Self-assembly for Nanopatterning Applications.	<i>Ricardo Ruiz — Lawrence Berkely National Laboratory</i>
<b>Microelectronics I — Unconventional Materials for Microelectronics</b> <i>Organizers: Mike Lilly, Jinkyong Yoo, Aiping Chen, Wei Pan</i>		
10:45 am	Topological insulator based quantum devices.	<i>Yong Chen — Purdue University</i>
11:15 am	Probing and Utilizing Topological Materials.	<i>Vesna Mitrovic — Brown University</i>
11:45 am	Development of Electrically Injected GeSn QW Lasers.	<i>Fisher Yu — University of Arkansas</i>
12:15 pm	Towards developing energy-efficient electronics based on diamond heterointegration with semiconductor materials.	<i>Anirudha Sumant — Argonne National Laboratory</i>
1:00 pm	<b>Special Virtual Poster Session</b>	

Day 1	<b>Evening Symposia</b>	Tuesday, September 20
<p>Nanophotonics for Transformative Technologies from Quantum to Energy I</p> <p>—</p> <p>Quantum Metasurfaces</p> <p><i>Organizers: Igal Brener, Hou-Tong Chen, Abul Azad</i></p>		
4:00 pm	<p>Space-Time Quantum Metasurfaces. <i>Diego Dalvit — Los Alamos National Laboratory</i></p>	
4:30 pm	<p>Metasurfaces for the Transformation and Measurement of Multiphoton Quantum States. <i>Kai Wang — McGill University</i></p>	
5:00 pm	<p>Nonlinear Optical Frequency Conversion in Resonant Dielectric Nanostructures. <i>Rocio Camacho Morales — Australian National University</i></p>	
5:30 pm	<p>Metasurface Imaging with Two-photon Interference. <i>Jensen Li — Hong Kong University of Science &amp; Technology</i></p>	
6:00 pm	<p>Optical Meta-devices: From Classical to Quantum. <i>Din Ping Tsai — City University of Hong Kong/National Taiwan University</i></p>	

End of Day 1

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## Meeting Agenda Day 2

Day 2	Parallel Symposia	Wednesday, September 21
<b>Self-Assembly of Soft Materials II — Theory and Characterization of Polymer Nanostructures</b> <i>Organizers: Mihee Kim, Achraf Nouredine, John Watt</i>		
10:00 am	Visualizing Polymer Liquid-Liquid Phase Separation and Self-Assembly using Liquid EM and Cryo EM. <i>Joe Patterson — University of California, Irvine</i>	
10:30 am	Computer simulation insights on the role of hydrogen bonding in coil-globule transition of amphiphilic polymers. <i>Elena Dormidontova — University of Connecticut</i>	
11:00 am	Computational design of collagen-like-peptides (CLP) for desired CLP triple helix melting transition and assembled structure. <i>Philip Taylor — Sandia National Laboratories</i>	
11:15 am	Supramolecular Bonds, Phase equilibrium, and Self-Assembly in Telechelic Polymer Blends. <i>Daniel Vigil — Sandia National Laboratories</i>	
11:30 am	Energy Exchange in DNA Origami-Nanoparticle Composites. <i>Jessica O. Winter — Ohio State University</i>	
<b>Nanophotonics for Transformative Technologies from Quantum to Energy II — Nanophotonics Enabled Advances in Energy and Environmental Sustainability Applications</b> <i>Organizers: Alex Cerjan, Andy Jones, Jennifer Hollingsworth</i>		
10:00 am	Seeded Approaches for Growth Control in III-V Nanocrystals. <i>Sohee Jeong — Sungkyunkwan University</i>	
10:30 am	Nanophotonic Control of Thermal Emission for New Energy Applications. <i>Aaswath Raman — University of California-Los Angeles</i>	
11:00 am	Enabling Technology for Optical Biosensing, Bioimaging and Spectroscopy. <i>Hatice Altug — École Polytechnique Fédérale de Lausanne</i>	
11:30 am	Nanoscale Operando Probes of Carrier-selective Electrocatalyst/semiconductor Interfaces in Photoelectrochemistry. <i>Shannon Boettcher — University of Oregon</i>	
<b>Microelectronics II — New Computing Architectures</b> <i>Organizers: Mike Lilly, Jinkyoun Yoo, Aiping Chen, Wei Pan</i>		
10:00 am	Rational Design of Memristive Devices for Neuromorphic Computing. <i>Regina Dittmann — Peter Grünberg Institute.</i>	
10:30 am	In-memory and Intelligent Computing Systems Enabled by Emerging Memory Devices. <i>Wei Lu — University of Michigan</i>	
11:00 am	A Probabilistic Future for Neuromorphic Computing. <i>James Bradley Aimone — Sandia National Laboratories</i>	
11:30 am	Analog In-Memory Computing for Neural Networks. <i>Jack Kendall — Rain Neuromorphics</i>	
Day 2	Plenary Session II	Wednesday, September 21
12:00 pm	Diblock Copolymer Melts Mimic Metallurgy. <i>Professor Frank Bates — University of Minnesota</i>	
1:30 pm	<b>Special Virtual Poster Session</b>	

End of Day 2

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## Meeting Agenda Day 3

<b>Day 3 Plenary Session III</b>		Thursday, September 22
9:00 am	Remarks by U.S. Senator Ben Ray Luján (N.M.)	
9:15 am	Accelerating Materials Innovations for Nanoelectronics. <i>Dr. Zhiyong Ma — Vice President Technology and Manufacturing Group, Intel</i>	
10:00 am	CINT User Executive Committee Presents: Best poster award	
<b>Day 3 Parallel Symposia</b>		Thursday, September 22
<b>Self-Assembly of Soft Materials III — Biomimetic Assembly</b> <i>Organizers: Mihee Kim, Achraf Nouredine, John Watt</i>		
10:15 am	Towards Design Principles of Geometrically-frustrated Building Blocks for Programmable Self-assembly. <i>Greg Grason — University of Massachusetts-Amherst</i>	
10:45 am	Voxelated Bioprinting: Digital Assembly of Viscoelastic Bio-ink Droplets. <i>Liheng Cai — University of Virginia</i>	
11:15 am	Engineering Vesicles Self-Assembled from Recombinant Fusion Proteins toward Synthetic Cell Platform. <i>Yeongseon Jang — University of Florida</i>	
11:45 am	Synthetic Structural Biology: Exploiting viral assembly principles as an anti-viral strategy. <i>Seth Fraden — Brandeis University</i>	
<b>Nanophotonics for Transformative Technologies from Quantum to Energy III — Cross-Cutting Heterogeneous Integration</b> <i>Organizers: Han Htoon, Jennifer Hollingsworth</i>		
10:15 am	Quantum Photonic Integrated Circuits – How do we Integrate Quantum Emitters? <i>Klaus D. Jöns — Pederborn University</i>	
10:45 am	Mixed-dimensional van der Waals Heterostructures for Nanophotonic Technologies. <i>Mark Hersam — Northwestern University</i>	
11:15 am	Quantum Nanophotonics with Stacked and Twisted Two-dimensional Materials. <i>Frank Koppens — Institute of Photonic Sciences, Spain</i>	
11:45 am	Designing Optical Metamaterials from Colloidal Nanocrystal Assemblies. <i>Cherie Kagan — University of Pennsylvania</i>	
12:15 pm	DNA Nanotechnology for Functional Nanophotonics. <i>Laura Na Liu — University of Stuttgart</i>	
<b>Microelectronics III — Advanced Metrology for New Devices</b> <i>Organizers: Mike Lilly, Jinkyoun Yoo, Aiping Chen, Wei Pan</i>		
10:15 am	X-ray Metrology for Semiconductor Nanostructures. <i>Joseph Kline — National Institute of Standards and Technology</i>	
10:45 am	Towards Atomic Scale Tomography of Quantum Devices. <i>Brian Gorman — Colorado School of Mines</i>	
11:15 am	High Performance GaN Transistors. <i>Yuping Zeng — University of Delaware</i>	
11:45 am	Precision Material Engineering for Quantum Information and Science. <i>Zihao Yang — Applied Materials</i>	