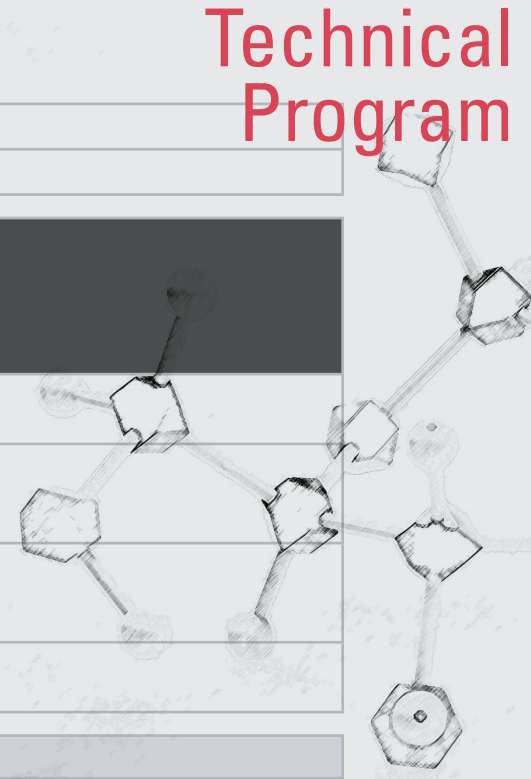


Monday, September 12 Ohio Union, 1739 North High Street, Columbus, Ohio

Technical Program

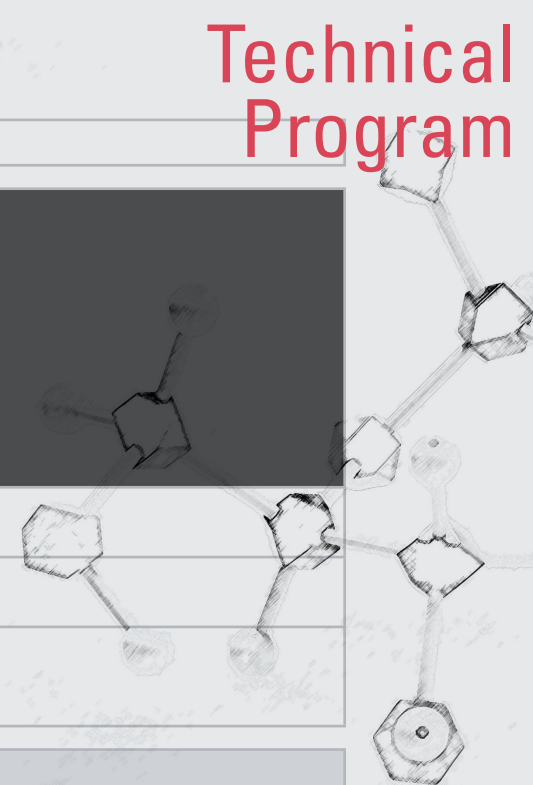


8:00 AM – 8:45 AM	Registration (Ohio Union, Great Hall Meeting Room)	
8:45 AM – 9:00 AM	Introductions	
	Plenary Session 1: Carbon-Based Materials Ohio Union, Great Hall Meeting Room Session Chair: Mark Rudner, The Ohio State University Co-Chair: P. Chris Hammel, The Ohio State University	
9:00 AM - 9:40 AM	Graphene-based Electronics for RF Communications and Sensing Tomas Palacios, Massachusetts Institute of Technology	
9:40 AM - 10:20 AM	Probing Dirac Fermions in Graphene: from Landau Levels to Twist-Induced van Hove Singularities Eva Andrei, Rutgers, The State University of New Jersey	
10:20 AM - 11:00 AM	Ultrafast Photocurrent in the Nanotube PN Junction: Probing the Interplay Between Electron-Hole Pair Creation and Annihilation Nathaniel Gabor, Massachusetts Institute of Technology	
11:00 AM - 11:40 AM	One, Two, Three -- Quantum Transport in Suspended Graphene Devices Chun Ning (Jeanie) Lau, University of California, Riverside	
11:40 AM – 1:00 PM	Lunch on your own	
	Technical Session 1: 2-D Materials Beyond Graphene Ohio Union, Great Hall Meeting Room 3 Session Chair: Joshua Goldberger, The Ohio State University Co-Chair: Patrick Woodward, The Ohio State University	Technical Session 2: Materials Design and Catalysis Ohio Union, Great Hall Meeting Rooms 1 & 2 Session Chair: Aravind Asthagiri, The Ohio State University Co-Chairs: Anne Co, The Ohio State University; Jay Gupta, The Ohio State University
1:00 PM - 1:30 PM	Synthesis of Functional Materials through Topochemical Reactions of Layered Solids Thomas Mallouk, Pennsylvania State University	Anode Catalysts for the Hydrocarbon Solid Oxide Fuel Cells Steven Chuang, University of Akron
1:30 PM - 2:00 PM	Towards Stable Layered Silicon Joshua Goldberger, The Ohio State University	Spectroscopic Properties of Chromophores in an Artificial Photosynthetic System Michael Severance, The Ohio State University
2:00 PM - 2:30 PM	Strong Spin-Orbit Coupling and Strain Effect in $\text{Sr}_2\text{CrReO}_6$ Epitaxial Films with Nearly Ideal Double Perovskite Ordering Fengyuan Yang, The Ohio State University	Gated Molecular Encapsulation and Reactivity Jovica Badjic, The Ohio State University
2:30 AM – 3:00 PM	Break	
3:00 PM - 3:30 PM	Chemical Control of the Structures and Properties of Layered Chalcogenides and Pnictides Simon Clarke, Oxford University	Computational Catalysis and Materials Design from First Principles Jeffrey Greeley, Argonne National Laboratory
3:30 PM - 4:00 PM	High Temperature Superconductivity: Yesterday, Today and Tomorrow Jie Yong, The Ohio State University	STM Studies of Charge Transfer at the Single Molecule Level Jay Gupta, The Ohio State University
4:00 PM - 4:30 PM	Panel Discussion	Extraordinary Infrared Transmission of Metal Films with Subwavelength Hole Arrays for the Study of Catalytic Reactions in Thin Film Coatings James Coe, The Ohio State University
5:00 PM – 7:00 PM	Student Poster Session and Reception Ohio Union, Potter Plaza	Poster Topics: Bio-based and Biological Materials; Energy, Environment and Power; Nanoelectronics and Nanophotonics

Tuesday, September 13 Ohio Union, 1739 North High Street, Columbus, Ohio

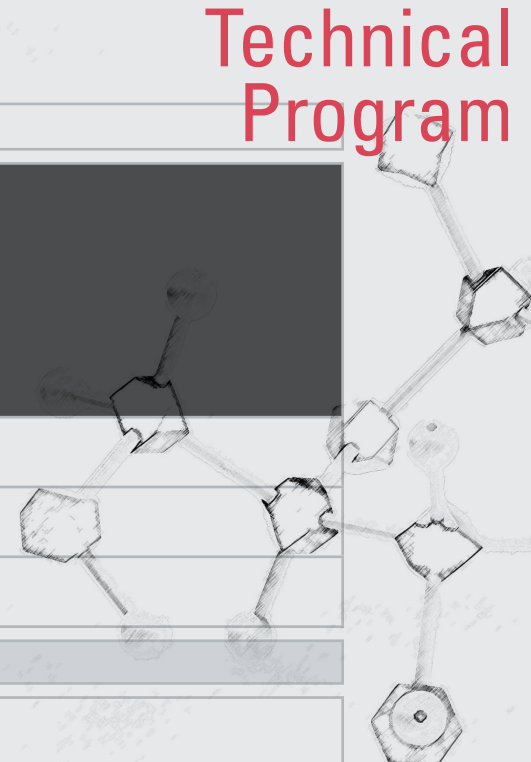
Technical Program

8:00 AM – 9:00 AM	Registration (Ohio Union, Great Hall Meeting Room)	
	<p>Plenary Session 2: Biological Materials: From the Nano to Macro Scale Ohio Union, Great Hall Meeting Room Session Chair: Michael Poirier, The Ohio State University Co-Chair: Peter Anderson, The Ohio State University Carlos Castro, The Ohio State University Jianjun Guan, The Ohio State University Joshua Goldberger, The Ohio State University</p>	
9:00 AM - 9:50 AM	<p>Reverse Engineering Biological Crystal Growth Derk Joester, Northwestern University</p>	
9:50 AM - 10:40 AM	<p>On the Biomechanics of Native and Engineered Valvular Tissues Michael Sacks, University of Pittsburgh</p>	
10:40 AM - 11:30 AM	<p>Programming Biological Self-Assembly for the Design of Nanoscale Engineering Tools and Materials Carlos Castro, The Ohio State University</p>	
11:40 AM – 1:00 PM	Lunch on your own	
	<p>Technical Session 3: Thermal Spintronics Ohio Union, Great Hall Meeting Room 3 Session Chairs: Joseph Heremans, The Ohio State University Roberto Myers, The Ohio State University</p>	<p>Technical Session 4: Terahertz (THz) Materials Ohio Union, Great Hall Meeting Rooms 1 & 2 Session Chairs: Siddharth Rajan, The Ohio State University John Volakis, The Ohio State University Co-Chair: Kubilay Sertel, The Ohio State University</p>
1:00 PM - 1:30 PM	<p>Spin Current Generation Using Heat and Magnetic Dynamics Eiji Saitoh, Tohoku University</p>	<p>Metallo-dielectric Composites for THz Devices and Components* Elliott Brown, Wright State University</p>
1:30 PM - 2:00 PM	<p>Moving Spins with Heat: Spin-Seebeck Effect in a Ferromagnetic Semiconductor Roberto Myers, The Ohio State University</p>	<p>Dual Wavelength Quantum Dot Laser Diodes Luke Lester, The University of New Mexico</p>
2:00 PM - 2:30 PM	<p>Phonon Drag and the Origin of the Spin-Seebeck Effect Joseph Heremans, The Ohio State University</p>	<p>Physics, Applications, and the State-of-the-Art in the THz Spectral Region Frank De Lucia, The Ohio State University</p>
2:30 AM – 3:00 PM	Break	
3:00 PM - 3:30 PM	<p>Theory of Phonon-Drag Spin Seebeck Effect Hiroto Adachi, Advanced Science Research Center, Japan Atomic Energy Agency</p>	<p>First Results of an 80 x 64 Pixel, Broadband, Real-Time THz Imager Lee Mosbacker, Trayer Diagnostic Systems</p>
3:30 PM - 4:00 PM	<p>Galilean Thermodynamics of Continuous Media with Electromagnetic Fields Sylvain Bréchet, École Polytechnique Fédérale de Lausanne</p>	<p>Seeing in Terahertz: Focal Plane Array Sensors for Real-Time THz Imaging Kubilay Sertel, The Ohio State University</p>
4:00 PM - 4:30 PM	Panel Discussion	
5:00 PM – 7:00 PM	<p>Student Poster Session and Reception Ohio Union, Potter Plaza</p>	<p>Poster Topics: Electronic, Magnetic and Molecular Materials; Multiscale Modeling and Computational Materials Science; Materials Education Research</p>



Wednesday, September 14 Ohio Union, 1739 North High Street, Columbus, Ohio

Technical Program



8:00 AM – 8:30 AM	Registration (Ohio Union, Great Hall Meeting Room)
	<p>University – Industry Interactions in Materials: New Approaches for Lighter, and more Sustainable Multi-Material Vehicle Structures Ohio Union, Great Hall Meeting Room</p> <p>Session Chair: Glenn Daehn, The Ohio State University; Sharell Mikesell, The Ohio State University Co-Chair: David Emerling, The Ohio State University</p>
8:30 AM - 8:40 AM	<p>Welcoming Remarks and themes for the day Glenn Daehn/Sharell Mikesell</p>
8:40 AM - 9:20 AM	<p>Challenges in Lightweight Vehicle Design Duane Detwiler, Honda R&D Americas</p>
9:20 AM - 9:45 AM	<p>Magnesium Alloy for Design in Vehicle Structures & Powertrains David Greer, Jr., Meridian Lightweight Technologies, Inc.</p>
9:45 AM – 10:00 AM	Break
10:00 AM - 10:20 AM	<p>Advances in Joining Methods for Lightweight Structures George Ritter, Edison Welding Institute</p>
10:20 AM - 11:30 AM	<p>Short Faculty overviews of relevant OSU work:</p> <ul style="list-style-type: none"> • Broad Overview of OSU Research in Multi-Material Vehicle Structures: Glenn Daehn, The Ohio State University • The OSU Industry Liaison Office: Advancing New Models of Holistic Industry/ University Engagement and Alliance: Daniel Kramer, The Ohio State University • Corrosion and Protection for Lightweight Vehicle Structures: Rudy Buchheit, The Ohio State University • Welding Materials System Approach to Deploy Lighter Multi-Materials Concepts – Challenges and Engineering Solutions: Sudarsanam Suresh Babu, The Ohio State University • Impulse Forming: Glenn Daehn, The Ohio State University • Multi-Functional Smart Structures via Ultrasonic Additive Manufacturing: Marcelo Dapino, The Ohio State University • Joining of Electromagnetic Frame Structures: Anthony Luscher, The Ohio State University
11:30 AM – 1:00 PM	<p>Materials Week Luncheon and Student Poster Awards Ohio Union, Archie M. Griffin West Ballroom</p>
1:00 PM - 1:30 PM	<p>Nanotechnology</p> <ul style="list-style-type: none"> • Next Generation Nanocomposites for Lightweight, Fuel Efficient Structures: Lance Criscuolo, Zyvex Performance Materials • Production of Nanocomposites for Aerospace Applications: Stephanie Rice, NanoSpense, LLC
1:30 PM - 2:10 PM	<p>Aerospace Aluminum - The Empire Strikes Back Daniel Goodman, Alcoa Aerospace</p>
2:10 PM - 2:25 PM	Break
2:25 PM - 3:00 PM	<p>An Overview of a Low Mass, Multi-Material Automotive Body Structure Gregg Peterson, Lotus Engineering</p>
3:00 PM - 3:45 PM	Roundtable Discussion of all speakers
3:45 PM	Adjourn