(WBI) Wright Brothers Institute Dayton [444]
444 E. 2nd Street
Dayton, OH 45402

Agenda Day One – Monday, June 10, 2024

TIME	TOPIC	SPEAKER
8:00–8:10	Registration/Admin/Speaker Set-up	
8:10-8:30	Welcome and Introductory Remarks	**Ken Caster** Air Force Office of Scientific Research
8:30-10:00	Session 1	**Abby Juhl** Materials & Manufacturing Directorate
8:30-9:00	Structural and Architectural Control of Order in Block Copolymers	**Thomas Russell, Javid Rzayev** University of Massachusetts, Amherst, State University at Buffalo, SUNY
9:00-9:30	Hybrid Nanostructured Polymer Materials Exhibiting Responsive Nonlinear Optical and Photonic Band Gap Properties	**Rob Hickey, Rob Mathers** Pennsylvania State University
9:30-10:00	Molecular Design of Viscoelasticity and Damping Properties in Vitrimers	**Chris Evans** University of Illinois, Urbana-Champaign
10:00-10:15	**BREAK**	
10:15-11:30	Session 2	**Ryan Selhorst** Materials & Manufacturing Directorate
10:15-10:45	(LRIR) Mechanically Robust and Reconfigurable Epoxy Nanocomposite by Dynamic Covalent Reactions	**Dhriti Nepal, Luke Baldwin, Ajit Roy** Materials & Manufacturing Directorate
10:45-11:15	Compatibilization of Polyolefin Blends through Chemo- and Regioselective Radical Relay C–H Functionalization	**Frank Leibfarth** University of North Carolina, Chapel Hill
11:15-11:30	(Special Topic) Cornell High Energy Synchrotron Source (CHESS) Overview	**Hilmar Koerner** Materials & Manufacturing Directorate
11:30-13:00	**LUNCH**	
13:00-14:30	Session 3	**Ryan Selhorst** Materials & Manufacturing Directorate
13:00-13:30	(LRIR) Improved Mechanical Properties of Additively-Manufactured Elastomers through Polymer Modification and Thiol-ene Curing Chemistry	**Levi Moore, Kam Ghiassi** Propulsion Directorate–Edwards AFB
13:30-14:00	(YIP) Vicinal Frustrated Lewis Pair Polymers for Dynamic, Stimuli-Responsive, and Energy-Dissipating Materials	**Nathan Romero** University of California, San Diego
14:00-14:30	(LRIR) Low Temperature Sintering of Polycrystalline Hybrid Organic-Inorganic Perovskites	**Tod Grusenmeyer** Materials & Manufacturing Directorate
14:30-14:45	**BREAK**	
14:45-17:00	Session 4	**Kirk Schanze** University of Texas, San Antonio

14:45-15:15	(YIP) Dinuclear Polymerization and Self-Assembly of Conjugated Polymer Nanowire Heterojunctions Toward Structure Photodetection Relationships	**Aleksandr 'Alex' Zhukhovitskiy** University of North Carolina, Chapel Hill
15:15-15:45	(LRIR) Graphene-Polymer Multilayers for Simultaneous IR-RF Detection	**Jarrett Vella** Sensors Directorate
15:45-16:15	(LRIR) Beyond Shielding: Towards Intrinsic and Extrinsic Radiation Resistance in Polymer-Based Hybrid Materials for Space Environments	**Larry Drummy** Materials & Manufacturing Directorate
16:15-16:45	Compositionally Tunable Stimuli-Responsive Nanoparticles Having Uniform Sizes, Shapes, and Core-Shell Architectures	**T. Randall Lee** University of Houston
17:00	**ADJOURN FOR THE DAY**	

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Agenda Day Two – Tuesday, June 11, 2024

TIME	TOPIC	SPEAKER
8:00–8:10	Registration/Admin/Speaker Set-up	
8:10-8:30	Welcome and Introductory Remarks	**Ken Caster** Air Force Office of Scientific Research
8:30-10:00	Session 5	**Kara Martin** Propulsion Directorate-WPAFB
8:30-9:00	(LRIR) Hybrid Inorganic/Organic Liquid Crystalline Materials for Low Cost Infrared Optics	**Moira Lauer, McConney, Scott Iacono** Materials & Manufacturing Directorate, US Air Force Academy
9:00-9:30	(YIP) Polarization-Specific Photocatalysis for Materials Chemistry	**Zachariah 'Zak' Page** University of Texas, Austin
9:30-10:00	(AOARD) One-Dimensional Ladder-Type Coordination Polymers (1D LCPs) Based on Organic Electronics Building Blocks	**Pichaya Pattanasattayavong** Vidyasirimedhi Institute of Science and Technology (VISTEC)
10:00-10:15	**BREAK**	
10:15-11:45	Session 6	**Anesia Auguste** Materials & Manufacturing Directorate
10:15-10:45	Stretchable Polymer Semiconductors	**Zhenan Bao** Stanford University
10:45-11:15	Mechanisms of Elasticity in Semiconducting Polymers	**Darren Lipomi** University of California, San Diego
11:15-11:45	Soft Hybrid Materials for Flexible, Stretchable, Patternable Electronics	**Tobin Marks** Northwestern University
11:45-13:15	**LUNCH**	
13:15-14:45	Session 7	**Jeff Ethier** Materials & Manufacturing Directorate
13:15-13:45	(LRIR) Helicene Containing Polymers and Fibers for Improved Melt Processability, Thermal Stability and *In-situ* Strain Sensing	**Davide Simone, Vikas Varshney** Materials & Manufacturing Directorate
13:45-14:15	(EOARD) Machine-Learning Aided Screening of Organic-Inorganic Perovskites as Efficient Photoabsorbers	**Gabor Csanyi, Chris Sutton** University of Cambridge, University of South Carolina
14:15-14:45	Ultrafast Transformations for Materials Synthesis and Mechanisms of Formation	**Jim Tour** Rice University
14:45-16:45	**Poster Session**	

	Additive Manufacturing of Imine-based Covalent Organic Frameworks	**Ly Tran** Materials & Manufacturing Directorate
	Orientation and Morphology Control in Acid-catalyzed Covalent Organic Framework Thin Films	**Dayanni Bhagwandin** Materials & Manufacturing Directorate
	Development of a Novel, All-Aromatic High Tensile Modulus Liquid Crystalline Polyimide for Fused Filament Fabrication Applications	**Zhenning Yu, Mia Carrola, Bingqian Zheng, Loon-seng Tan, Christopher Crouse, Hilmar Koerner** Materials & Manufacturing Directorate
	Photocontrolled Synthesis of π-Conjugated Polymers	**Julia Kalow, Jonathan Sklar** Northwestern University
	Systematic Photoalignment of Sidechain Liquid Crystal Polymers	**Joy Zhou, Yutong Liu, Connor O'Dea, Jaechul Ju, Holden Robinson, Yudian Wu, Zachariah A. Page** University of Texas, Austin
	Polymer Macroligands Passivate Halide Perovskite Surfaces	**Mykyta Dementyev, Michael Brennan, Tod Grusenmeyer, Seth Waugaman, Rob Mathers, Rob Hickey** Pennsylvania State University, Materials & Manufacturing Directorate
	Maximizing Nanoparticle Loading in Swollen Polymer Networks	**Seth Waugaman, Mykyta Dementyev, Rob Mathers, Rob Hickey** Pennsylvania State University
	3D Printing of Polychloroprene Using Vat Photopolymerization	**Maren Summers** Propulsion Directorate
	Chalcogenide/Liquid Crystal Hybrid Polymers: Efforts Toward Responsive, Infrared Transparent Devices	**Kyle J. Carothers, Kyung Min Lee, Peter Stevenson, Michael McConney, Nicholas Godman** Materials & Manufacturing Directorate
	Exploring the Relationship between Molecular Chirality and Chiral Phonons	**Hanggai Nuomin, Peng Zhang, David N. Beratan** Duke University
	Nitrogen Rich Molecular Saddle with Highly Planarized Cyclooctatetraene Core and Near-Infrared Absorption	**Daniel Martinez, Timothy M. Swager** Massachusetts Institute of Technology
	Nitrogen-Rich Contorted Nanographenes and Helicenes	**Abdusalom A. Suleymanov, Timothy M. Swager** Massachusetts Institute of Technology
	Polycrystalline and Supercluster Nanoparticles: Flexibility in Manipulating Nano-Magnetism and Unexplored Potential in Biomedical Applications	**Minh Dang Nguyen, Maggie Fuller, Liangzi Deng, Ching-Wu Chu, T. Randall Lee, S.B. Attanayake, Manh-Huong Phan** University of Houston, University of South Florida
	Gold Organometallics as Nonlinear Optical Chromophores	**Julia Marshall, Greg Sutton, Thomas Gray** Case Western Reserve University
17:00	**ADJOURN FOR THE DAY**	

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Agenda Day Three – Wednesday, June 12, 2024

TIME	TOPIC	SPEAKER
8:00–8:10	Registration/Admin/Speaker Set-up	
8:10-8:30	Welcome and Introductory Remarks	**Ken Caster** Air Force Office of Scientific Research
8:30-10:00	Session 8	**Kam Ghiassi** Propulsion Directorate–Edwards AFB
8:30-9:00	(LRIR) The Design, Synthesis and Conversion of Preceramic Polymers using Modular Chemistry	**Tim Pruyn, Matt Dickerson** Materials & Manufacturing Directorate
9:00-9:30	(LRIR) Covalent Organic Framework Sensors and Electronics	**Nick Glavin, Luke Baldwin** Materials & Manufacturing Directorate
9:30-10:00	(EOARD) A Sustainable Strategy for Synthesizing Conjugated Porous Organic Frameworks	**Onder Metin** KOC Universitesi
10:00-10:15	**BREAK**	
10:15-11:45	Session 9	**Tim Pruyn** Materials & Manufacturing Directorate
10:15-10:45	Silicon Diamondoid Nanoclusters: Precision Synthesis and Quantum Transport Properties	**Timothy Su** University of California, Riverside
10:45-11:15	(HBCU/MSI) Structurally Controlled Synthesis of BCN Materials	**Aleksandrs 'Alex' Prokofjevs** North Carolina A&T State Univ
11:15-11:45	(AOARD) Highly Activated Low-Valent Main Group Compounds for the Selective Transformation of Inert Molecular Substrates	**Cameron Jones** Monash University
11:45-13:15	**LUNCH**	
13:15-14:45	Session 10	**Luke Baldwin** Materials & Manufacturing Directorate
13:15-14:05	(Special Lecture) Chiral-Induced Spin Selectivity (CISS)	**Ron Naaman** Weizmann Institute
14:05-14:35	Understanding the Relationships Between the Structural, Optical, Electronic and Spintronics Properties of Chiral Organic Semiconducting and Conducting Materials	**Seth Marder, Valy Vardeny** University of Colorado, Boulder, University of Utah
14:35-14:50	(Special Topic) Flow Chemistry	**Luke Baldwin** Materials & Manufacturing Directorate
15:00-17:00	National Museum of the USAF, 1100 Spaatz St., Dayton, OH 45433 https://www.nationalmuseum.af.mil Free entrance and free parking	

18:30-20:00	No Host Dinner	**The Wandering Griffin Brewery** 3725 Presidential Drive, Beavercreek, OH, (https://wanderinggriffin.com/)

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Agenda Day Four – Thursday, June 13, 2024

TIME	TOPIC	SPEAKER
8:00–8:10	Registration/Admin/Speaker Set-up	
8:10-8:30	Welcome and Introductory Remarks	**Ken Caster** Air Force Office of Scientific Research
8:30-9:40	Session 11	**Larry Drummy** Materials & Manufacturing Directorate
8:30-9:10	(MURI) Electron Spin Selectivity of Chiral Matter, from Molecules and Supramolecular Assemblies to Life	**David Waldeck** University of Pittsburgh
9:10-9:25	(Special Topic) AFRL "Devices for Emergent Electronics and Photonics (DEEP)" Laboratory	**Nick Glavin** Materials & Manufacturing Directorate
9:25-9:40	(Special Topic) AFRL Verdet/Magneto-Optical Measurement and Z-Scan Capabilities	**Alan Martinez** Materials & Manufacturing Directorate
9:40-9:55	**BREAK**	
9:55-11:35	Session 12	**Randy Lee** University of Houston
9:55-10:35	(MURI) Elucidating Interplays of Chirality and Spin in Chiral Assemblies	**Dali Sun** North Carolina State University
10:35-11:05	(EOARD) Chiral Polymers as Spin Filters and Terahertz emitters	**Yossi Paltiel, Ron Naaman** Hebrew University; Weizmann Institute
11:05-11:35	(YIP) Precision Synthesis and Assembly of Chiral 2D Polymers for Spintronics	**Yu Zhong** Cornell University
11:35-13:00	**LUNCH**	
13:00-14:30	Session 13	**Bryan Boudouris** University of Alabama
13:00-13:30	(International) The Role of Chirality in Energy Transfer	**Jessica Wade, Matthew Fuchter** Imperial College London
13:30-14:00	New Electronic Topologies in Organic Electronic Materials	**Tim Swager** Massachusetts Institute of Technology
14:00-14:30	Chirality Control of Multiphoton Excitations, Dynamics, and Magneto-optic Behavior in Hybrid Systems	**Paras Prasad** University of Buffalo
14:30-14:45	**BREAK**	

14:45-16:45	Session 14	**Yu Zhong** Cornell University
14:45-15:15	Design, Characterization, and Dynamical Response of Bespoke Detection Materials for the Short Wavelength Infrared Spectral Regime	**Michael Therien** Duke University
15:15-15:45	Narrow Bandgap Conjugated Polymers with Strong Correlations and Open-Shell Electronic Structures	**Jason Azoulay** University of Southern Mississippi
15:45-16:15	Deciphering Thermalization of Hybrid Charge Transfer States	**Parag Deotare** University of Michigan
16:15-16:45	(HBCU-MSI) Optical Control of Charge and Energy Transfer in Molecular Wires	**Kirk Schanze** University of Texas, San Antonio
17:00	**ADJOURN**	

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Agenda Day Five – Friday, June 14, 2024

TIME	TOPIC	SPEAKER
8:00–8:10	Registration/Admin/Speaker Set-up	
8:10-8:30	Welcome and Introductory Remarks	**Ken Caster** Air Force Office of Scientific Research
8:30-9:30	Session 15	**Luke Baldwin** Materials & Manufacturing Directorate
8:30-9:00	Late Transition Metal Organometallics as Nonlinear Optical Materials	**Thomas Gray** Case Western Reserve University
9:00-9:30	(YIP) Harnessing Photo-Induced Phase Transition of Organic Materials for Catalyst Recycling	**Grace Han** Brandeis University
9:30-9:45	**BREAK**	
9:45-11:45	Session 16	**Tom Russell** University of Massachusetts, Amherst
9:45-10:15	Mechanisms of Elasticity in Semiconducting Polymers	**Bryan Boudouris, Brett Savoie** University of Alabama, Purdue University
10:15-11:30	High Contrast Molecular Electrochromism	**John Reynolds, Aime'e Tomlinson** Georgia Tech, University of North Georgia
11:30-11:45	Concluding Comments – Adjourn Meeting	**Ken Caster** Air Force Office of Scientific Research