Thursday, March 16th, 2023
Harris Engineering Center (HEC), Room 101

Registration desk
Atrium HEC from 7:30 am – 5:00 pm

Session 1.1: Introduction and Welcome

	Time Slot	Title	Speaker
1	8:00 am – 8:05 am	Introduction and Welcome	Professor Saiful Khondaker Physics, PREM: C-UDCEM Director, University of Central Florida
2	8:05 am – 8:10 am	Opening Remarks - UCF	Professor Winston Schoenfeld College of Optics & VP of Research University of Central Florida
3	8:10 am – 8:20 am	Opening Remarks - NSF	Dr. Shadi Mamaghani National Science Foundation Washington DC

Session 1.2: Structure – Property Evolution in Quantum Materials

Chair: Professor Michael Chini

1	8:30 am – 9:10 am	(**Invited**) Electronic structure evolution in magnetic topological materials	Professor Madhab Neupane Physics, University of Central Florida
2	9:10 am – 9:50 am	(**Invited**) Magnetism in Quantum Flatland: Novel Excitons and Moiré Physics from First Principles	Professor Ting Cao Physics and Materials Science & Engineering, University of Washington
3	9:50 am - 10:05 am	(**Contributed**) Observation of Flat and Weakly Dispersing Bands in the Electronic Structure of a Breathing Kagome Semiconductor	Sabin Regmi Physics, University of Central Florida
4	10:05 am - 10:20 am	(**Contributed**) An Extensive Raman Study on Quantum Material Nb_3Cl_8: From Bulk to Thin Layer	Dylan Jeff Nano Science & Technology, Physics and PREM C.UDCEM, University of Central Florida
5	10:20 am - 10:35 am	(**Contributed**) Modulating Magnetization and Magnetic Damping across YIG/2D-TMD/Pt Interfaces	Chang-Ming Hung Physics, University of South Florida

10:35 am – 11:00 am Coffee Break

Session 1.3: Materials Synthesis and Properties of Quantum Materials

Chair: Professor Saiful Khondaker

	Time Slot	Title	Speaker

1	11:00 am – 11:40 am	(**Invited**) Exploring Atomically Thin Metals, Semiconductors, and Insulators (Zoom® cast)	Professor Joshua Robinson Materials Science & Engineering, Pennsylvania State University
2	11:40 am – 12:20 pm	(**Invited**) Strain-tuned Superconducting and Topological Transitions in Layered Quantum Materials	Professor Jiun-Haw Chu, Physics and Materials Science & Engineering, University of Washington

12:20 pm – 1:00 pm Lunch

	Time Slot	**Title**	**Speaker**
3	1:00 pm – 1:15 pm	(**Contributed**) Pulsed Laser Deposition Growth of Two-Dimensional WS_2 Thin Films for Spintronics and Spin-Caloritronics	Derick De Tellem Physics, University of South Florida
4	1:15 pm – 1:30 pm	(**Contributed**) Determination of the Impact of Thermal Annealing on the Interface Between Monolayer MoS_2 and Au by *in situ* Raman Spectroscopy	Stephanie Lough, Physics and Nanoscience and Technology, University of Central Florida
5	1:30 pm – 1:45 pm	(**Contributed**) High Harmonic Generation from Epitaxial Zinc Oxide Films	Troie Journigan Physics, PREM C.UDCEM, University of Central Florida
6	1:45 pm – 2:00 pm	(**Contributed**) Raman Study of the Anisotropic Layered Quadrupole Topological Insulator $Ta_2Ni_3Te_5$	Kamal Harrison Physics, Nano Science & Technology Center and PREM C.UDCEM, University of Central Florida

2:00 pm – 2:30 pm Coffee Break

Session 1.4: Light-Matter Interaction in Quantum Materials

Chair: Professor Madhab Neupane

	Time Slot	**Title**	**Speaker**
1	2:30 pm – 3:10 pm	(**Invited**) Novel topological transport induced by non-coplanar spin textures in centrosymmetric van der Waals Ferromagnets	Professor Luis Balicas Physics, Florida State University
2	3:10 pm – 3:50 pm	(**Invited**) 2D spin bistable molecules	Professor Xiao-Xiao Zhang Physics, University of Florida
3	3:50 pm – 4:05 pm	(**Contributed**) Observation of band splitting by paramagnetic spin-fluctuations in $EuZn_2Sb_2$	Milo Sprague, Physics, University of Central Florida
4	4:05 pm – 4:20 pm	(**Contributed**) Light-induced and Microwave-excited Spin-to-Charge Conversion Across the Interface of Ferromagnet/3D topological Insulator	Weiping Wu Physics, University of Delaware

5	4:20 pm – 4:35 pm	(**Contributed**) Carrier Envelope Phase Dependence of High-Order Harmonics from Monolayer MoS_2	Christian Cabello Physics and PREM C.UDCEM, University of Central Florida

Poster Session and Dinner / Reception
5:00 – 7:30 @ Atrium HEC

1.5.1Q	UTILIZING MACHINE VISION FOR AUTOMATED IDENTIFICATION OF GRAPHENE	Anna Bowman Physics, University of Central Florida
1.5.2Q	CURRENT CONTROLLED MAGNETO-OPTIC KERR EFFECT OF TWO-DIMENSIONAL Fe_3GeTe_2 FILMS	Alexander Prieto Physics, PREM C.UDCEM, University of Central Florida
1.5.3Q	OBSERVATION OF ANISOTROPIC DIRAC CONES IN THE TOPOLOGICAL MATERIAL Ti_2Te_2P	Iftakhar Bin Elius Physics, University of Central Florida
1.5.4Q	OBSERVATION OF FERMI ARCS AND WEYL NODES IN A NON-CENTROSYMMETRIC MAGNETIC WEYL SEMIMETAL	Mazharul Islam Mondal, Physics, University of Central Florida
1.5.5Q	OBSERVATION OF FLAT BANDS IN NIOBIUM HALIDE SEMICONDUCTOR	Alexis J. Agosto-Cuevas Physics, PREM C.UDCEM, University of Central Florida
1.5.6Q	SINGLE-SHOT FIELD SAMPLING FOR SHORT-WAVE INFRARED LASER PULSES	Tran-Chau Truong Physics, University of Central Florida
1.5.7Q	GAPLESS NODAL LINES IN A RARE-EARTH-BASED SEMIMETAL	Nathan A Valadez Physics, PREM C.UDCEM, University of Central Florida
1.5.8Q	LAYER DEPENDENT RAMAN STUDY OF Nb_3Br_8	Favian Gonzalez Physics, Nano Science & Technology Center, PREM C.UDCEM, University of Central Florida
1.5.9Q	OBSERVATION OF FLAT BANDS AND DIRAC CONES IN A WEAKLY CORRELATED SEMIMETAL YRu_2Si_2	Anup Pradhan Sakhya Physics, University of Central Florida
1.5.10Q	ENHANCED MAGNETIC INTERACTION AT C60/PdCo INTERRFACE	Hong V. Bui Physics, University of South Florida
1.5.11Q	A FIELD INDUCED GAP OBSERVED IN METAL-OXALATE FRAMEWORK $[(C_2H_5)_3NH]_2CU_2(C_2O_4)_3$ VIA SPECIFIC HEAT CAPACITY MEASUREMENTS	Charuni Dissanayake Physics, University of Central Florida
1.5.12Q	RAMAN STUDY OF ANTIFERROMAGNETIC AND CHARGE DENSITY WAVE QUANTUM MATERIAL GDTE3*	Dylan Jeff Physics and PREM C.UDCEM, University of Central Florida
1.5.13Q	LARGE-AREA EXFOLIATION OF QUANTUM MATERIALS VIA METAL MEDIATED EXFOLIATION	Giulianna De La Torre, Physics and PREM C.UDCEM, University of Central Florida
1.5.14Q	SOFT-POINT-CONTACT SPECTROSCOPY OF THE TOPOLOGICAL NODAL-LINE SEMIMETAL CANDIDATE $Sn_XNbSe_{2-\delta}$	Kapila Kumarasinghe Physics, University of Central Florida

1.5.15Q	SURFACE CHARGE TRANSFER DOPING OF 2D TRANSITION METAL DICHALCOGENIDES USING SODIUM AZIDE	Gabriel Marciaga Physics and Nano Science and Technology Center and PREM C.UDCEM, University of Central Florida
1.5.16Q	THE IMPACT OF DIFFERENT PROCESSING PARAMETERS ON THE METAL-MEDIATED EXFOLIATION OF MONOLAYER MOS_2	Ravindra Sharma Physics and Nano Science and Technology Center and PREM C.UDCEM, University of Central Florida
1.5.17Q	METROLOGY AND CHARACTERIZATION OF DEFECTS IN TRANSITION METAL DICHALCOGENIDES USING SCANNING TUNNELING MICROSCOPY ENHANCED WITH MACHINE LEARNING	Darian Smalley Physics and Nano Science and Technology Center, University of Central Florida
1.5.18Q	ELECTRONIC AND MAGNETIC PROPERTIES OF 2D BREATHING-KAGOMÉ MAGNETS; AND STEM PALS	Tharindu Fernando Physics, University of Washington
1.5.19C	SIGNIFICANT ROLE OF HYDROXYL-RICH ZrO_2 SUPPORT PRECURSOR on CuO/ZrO_2 CATALYST FOR ENVIRONMENTAL CATALYSIS	Murtadha Almousawi Civil Environmental and Construction Engineering, University of Central Florida
1.5.20C	DEFECT ENGINEERING OF CERIUM OXIDE THIN FILMS	Keith Blackman Physics, PREM C.UDCEM, University of Central Florida
1.5.21C	DEPOSITION OF ZINC OXIDE AND DOPED ZINC OXIDE THIN FILMS USING SUCCESSIVE IONIC LAYER ADSORPTION AND REACTION	Luis Tomar Materials Science and Engineering, PREM C.UDCEM University of Central Florida
1.5.22C	CATALYTIC HYDROGENATIONS WITH MONOLITH-SUPPORTED Pt	Kemah Kamiru-White Chemistry, University of Central Florida
1.5.23C	TRACKING THE ULTRAFAST DISSOCIATION DYNAMICS OF $Fe(CO)_5$ ON OXIDE SURFACES	Laura M. Killingsworth Physics, University of Central Florida
1.5.24C	SIMPLE TECHNIQUE COMBINING GENETIC ALGORITHMS WITH MACHINE LEARNING FOR MATERIALS DISCOVERY, EXEMPLIFIED BY AuPd NANOCLUSTERS	Johnathan von der Heyde Physics, University of Central Florida
1.5.26C	INTERPLAY OF THE METAL SURFACE ELECTRONIC STATE AND NON-COVALENT MOLECULAR BONDS IN SYNERGISTIC MOLECULAR ASSEMBLY FORMATION ON Au(111)	Dave Austin Physics, University of Central Florida
1.27.C	ANATASE CRYSTALLINE PHASE DISCOVERY ON ULTRA-THIN LAYER TiO_2 FILMS DURING LOW-TEMPERATURE ALD ON FLUORINE-RICH CARBON SUBSTRATES	Brian Butkus Materials Science and Engineering, University of Central Florida

1.5.28O	LOW-COST PAPER-BASED ELECTRODES TO DETECT ASCORBIC ACID, DOPAMINE, AND URIC ACID	Makeiyla Begay Chemistry, Navajo Technical University
1.5.29O	HOW S.T.E.M. IS EMBEDDED IN NAVAJO WEAVING	Keanu Simpson Department of Dine Culture, Navajo Technical University
1.5.30O	DESIGN AND FABRICATION OF FLEXIBLE PAPER-BASED, ELECTROCHEMICAL SENSORS TO DETECT THE PRESENCE OF HEAVY METALS IN GROUND WATER	Justin Platero Chemistry, Navajo Technical University
1.5.31O	SIMPLIFYING THE DESIGN OF A TENDON ACTUATED SOFT GRIPPER INTO AN EASY-TO-FOLLOW, LOW-COST TOOLKIT FOR K-12 STUDENTS	Jonathan Chinana Navajo Technical University
1.5.32O	ENHANCING FIRST YEAR UNDERGRADUATE STUDENTS' INTEREST AND AWARENESS IN EMERGENT MATERIALS RESEARCH VIA USING ONLINE LEARNING MODULES	Professor Zhongzhou Chen Physics and Co-PI C.UDCEM, University of Central Florida
1.5.33O	OPTICAL NONLINEAR RESPONSE OF $Cu_{0.33}In_{1.30}P2S_6$ BULK HETEROSTRUCTURE	Aamir Mushtaq Materials Science and Engineering, Ohio State University
1.5.34O	SOLUTION PROCESSED NICKEL-BASED HOLE TRANSPORT LAYERS AND PEROVSKITE GRAIN SIZE ENGINEERING FOR AMBIENT FABRICATED PEROVSKITE SOLAR CELLS	Leaford Nathan Henderson Materials Science and Engineering, University of Central Florida
1.5.35Q	COLLOIDAL METAL OXIDE NANOCRYSTALS FOR QUANTUM COMMUNICATION	Jacob Baillie and Stephen Gibbs Chemistry, University of Washington

Friday, March 17th, 2023
Harris Engineering Center (HEC), Room 101

Session 2.1: Nanomaterials for Catalysis

Chair: Professor Titel Jurca

	Time Slot	Title	Speaker
1	8:30 am – 9:10 am	(**Invited**) TBD	Professor Daniel Gamelin Chemistry, MRSEC MEM.C Director, University of Washington
2	9:10 am – 9:50 am	(**Invited**) Nanostructural Sulvanites: A Nanotechnologist's Dream	Professor Daniela Radu Mechanical & Materials Engineering, PREM IMPAQT Director Florida International University
3	9.50 am -10.05 am	(**Contributed**) Developing Cu Nanowire Electrocatalyst for the Recycling of Nitrate to Ammonia	Kaige Shi Physics, University of Central Florida
4	10.05 am -10.20 am	(**Contributed**) A nano-sized $Co_xZn_{1-x}O$ Catalyst for efficient CO_2 hydrogenation	Kailong Ye Civil, Environmental and Construction Engineering, University of Central Florida
5	10.20 am - 10.35 am	(**Contributed**) Systematic investigation of Pt clusters and nanoparticles stability on $CeO_2(111)$ ultrathin films	Corine Smith Physics, University of Central Florida

10:35 am – 11:00 am Coffee Break

Session 2.2: Catalysts theory, metrology and scale-up

Chair: Professor Parag Banerjee

	Time Slot	Title	Speaker
1	11:00 am – 11:40 am	(**Invited**) Advances in Computational Molecular Spectroscopies	Professor Xiaosong Li, Chemistry MRSEC MEM.C Executive Director of Education & Outreach, University of Washington
2	11:40 am – 12:20 pm	(**Invited**) Industrial Heterogeneous Catalysis at Shell®	Dr. Tracy L. Lohr Research Scientist, Shell® Catalyst and Technologies, Houston

12:20 pm – 1:00 pm Lunch

	Time Slot	Title	Speaker
3	1:00 pm – 1:15 pm	(**Contributed**) Photothermal Lens Spectroscopy of Upconversion Nanoparticles	Ameen Zerrad Physics, Delaware State University
4	1:15 pm – 1:30 pm	(**Contributed**) Stabilization of CO_2 adsorption on Bi(111) electrode in electrochemical environment using	Theodoros Panagiotakopoulos Physics, University of Central Florida

		non-metallic cations: A first principles study.	
5	1:30 pm – 1:45 pm	(**Contributed**) Size-Dependency of Optical and Catalytic Properties in Material Science: A Theoretical Study.	Tian Wang Chemistry, University of Washington

Session 2.3: The PREM Experience

Chair: Professor Zhongzhou Chen

	Time Slot	Title	Speakers
1	1:45 pm – 2:45 pm	Student experiences at the PREM – C-UDCEM	Luis Tomar, Kamal Harrison and Favian Gonzales

2:45 pm – 3:00 pm Coffee Break

Session 2.4: Light-Matter Interaction in Energy Materials

Chair: Professor Mihai Vaida

	Time Slot	Title	Speaker
1	3:00 pm – 3:40 pm	(**Invited**) Nanomodular Electronics	Professor Michael Filler Chemical & Biomolecular Engineering, Georgia Tech
2	3:40 pm – 4:20 pm	(**Invited**) Elucidating the Origin of Plasmon-Generated Hot Holes in Water Oxidation	Professor. Wei David Wei Chemistry, University of Florida
3	4:20 pm – 4:35 pm	(**Contributed**) Black TiO_2 synthesized using ALD - Application as Photocatalysts and Passivation Layers in Solar Cells	Terrick Mcnealy-James Physics and PREM C.UDCEM University of Central Florida
4	4:35 pm – 4:50 pm	(**Contributed**) The Effects of Aging on the Optoelectronic Function of Nanocrystalline Lead Halide Perovskites	Mirra B. Mogensen Chemistry, Nano Science & Technology Center, Materials Science and Engineering, University of Central Florida

4:50 – 5:00 pm: Closing Remarks – Professor Saiful Khondaker