

EFRC and DOE Research and Networking Poster Reception

Thursday, May 26, 2011, 6:00 – 7:30 pm

Department of Energy Programs

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P1-J1 Advanced Research Projects Agency – Energy (ARPA-E)Contacts: Karma Sawyer, karma.sawyer@hq.doe.gov; Robert Conrado, robert.conrado@hq.doe.govWebsite: <http://arpa-e.energy.gov/>**P1-J2 Office of Energy Efficiency and Renewable Energy, Biomass Program**

Contact: Paul F. Bryan, Program Manager

Website: www.biomass.energy.gov**P1-J3 Office of Energy Efficiency and Renewable Energy (EERE), Office of Vehicle Technologies, Batteries for Advanced Transportation Technologies (BATT)**Contacts: Tien Duong, EERE, tien.duong@ee.doe.gov, 202-586-7836Venkat Srinivasan, LBNL, vsrinivasan@lbl.gov, 510-495-2679Website: <http://berc.lbl.gov/batt/>**P1-J4 Office of Environmental Management, Office of Technology Innovation & Development****P1-J5 Office of Fossil Energy**

DIVISION OF ADVANCED ENERGY SYSTEMS

Samuel Tam, Director, Division of Advanced Energy Systems

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DIVISION OF CARBON CAPTURE AND STORAGE

Mark Ackiewicz, Director, Division of Carbon Capture and Storage Research

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DIVISION OF CROSSCUTTING RESEARCH

Regis Conrad, Director, Division of Crosscutting Research

Regis.Conrad@hq.doe.govWebsite: <http://fossil.energy.gov>**P1-J6 National Nuclear Security Administration, Office of Inertial Confinement Fusion, Laboratory for Laser Energetics at the University of Rochester**Contact: David D. Meyerhofer, ddm@lle.rochester.eduWebsite: www.lle.rochester.edu**P1-J7 Office of Nuclear Energy, Fuel Cycle Technology**

FUEL RESOURCES

Dr. Sheng Dai, National Technical Director, Dais@ornl.gov

MICROCALORIMETRY FOR ULTRA HIGH RESOLUTION SPECTROSCOPY

Daniel Vega, daniel.vega@nuclear.energy.govwww.lanl.gov**P1-J8 Office of Nuclear Energy, Office of Space and Defense Power Systems**

Contacts: Tim Frazier, Dirk Cairns-Gallimore, Won Yoon, and Scott Harlow

Scott.Harlow@nuclear.energy.govWebsite: <http://nuclear.energy.gov/space/neSpace2a.html>**P1-J9 Office of Science, Advanced Scientific Computing Research**Contact: Barbara Helland, Barbara.Helland@science.doe.govWebsite: <http://science.energy.gov/ascr/>

P1-J10 Office of Science, Basic Energy Sciences, Nanoscale Science Research Centers

CENTER FOR FUNCTIONAL NANOMATERIALS

Grace Webster, cfnuser@bnl.gov<http://www.bnl.gov/cfn/>

CENTER FOR INTEGRATED NANOTECHNOLOGIES

Neal Shinn, ndshinn@sandia.gov<http://www.lanl.gov/cint/>

CENTER FOR NANOPHASE MATERIALS SCIENCES

Tony Haynes, cnmsuser@ornl.gov<http://cnms.ornl.gov/>

CENTER FOR NANOSCALE MATERIALS

Katie Carrado Gregar, kcarrado@anl.gov<http://nano.anl.gov/>

THE MOLECULAR FOUNDRY

David Buzow, dabuzow@lbl.gov<http://foundry.lbl.gov/>**P1-J11 Office of Science, Basic Energy Sciences, Electron-Beam Microcharacterization Centers**

ELECTRON MICROSCOPY CENTER FOR MATERIALS RESEARCH (EMCMR)

Dean J. Miller, Director, miller@anl.gov<http://www.msd.anl.gov/groups/emc/>

NATIONAL CENTER FOR ELECTRON MICROSCOPY

Ulrich Dahmen, Director, udahmen@lbl.gov<http://ncem.lbl.gov/>

SHARED RESEARCH EQUIPMENT (SHARE) USER FACILITY

Karren More, Director, morek1@ornl.gov<http://www.ornl.gov/sci/share/>**P1-J12 Office of Science, Basic Energy Sciences, Neutron Scattering Facilities**

LOS ALAMOS NEUTRON SCIENCE CENTER (LANSCE)

Kurt Schoenberg, kurts@lanl.govwww.lansce.lanl.gov

SPALLATION NEUTRON SOURCE (SNS)

Judy Trimble, User Program Manager, trimblejl@ornl.gov<http://neutrons.ornl.gov/facilities/SNS/>

HIGH FLUX ISOTOPE REACTOR (HFIR)

Judy Trimble, User Program Manager, trimblejl@ornl.gov<http://neutrons.ornl.gov/facilities/HFIR/>

P1-J13 Office of Science, Basic Energy Sciences, X-Ray Light Sources

ADVANCED LIGHT SOURCE (ALS) AT LAWRENCE BERKELEY NATIONAL LABORATORY

Scientific Contact: Roger Falcone, RWFalcone@lbl.gov

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ADVANCED PHOTON SOURCE (APS) AT ARGONNE NATIONAL LABORATORY

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LINAC COHERENT LIGHT SOURCE (LCLS) AT SLAC NATIONAL ACCELERATOR LABORATORY

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User Program: Cathy Knotts, knotts@slac.stanford.edu

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NATIONAL SYNCHROTRON LIGHT SOURCE (NSLS) AT BROOKHAVEN NATIONAL LABORATORY

Scientific Contact: Qun Shen, qshen@bnl.gov

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STANFORD SYNCHROTRON RADIATION LIGHTSOURCE (SSRL) AT SLAC NATIONAL ACCELERATOR LABORATORY

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P1-J14 SunShot Initiative

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Website: <http://www1.eere.energy.gov/solar/sunshot/>

EFRC Research Posters
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P1-A01 - POLARITON LASING BY INTRA-CAVITY PUMPING AND APPLICATIONS TO ULTRA-FAST OPTICAL MODULATION

[CE] Gleb Akselrod¹, Elizabeth Young¹, Scott Bradley¹, and Vladimir Bulovic¹

¹*Massachusetts Institute of Technology*

P1-A02 - NONDIABATIC QUANTUM MOLECULAR DYNAMICS SIMULATIONS OF RAPID ENERGY TRANSPORT IN LIGHT-HARVESTING MOLECULES

[CEN] Aiichiro Nakano¹, Rajiv. K. Kalia¹, and Priya Vashishta¹

¹*University of Southern California*

P1-A03 - PROBING NANOMETER-SCALE ENERGETICS AND ORIENTATION OF MOLECULES AT INTERFACES

[CISSEM] Bradley MacLeod¹, Matthew Schalnaf², Dallas Matz², David Ginger¹, Jeanne Pemberton², Sergio Paniagua³, Seth Marder³, Ajaya Sigdel⁴, Joseph Berry⁴, Mariola Macech², Hong Li³, and Jean-Luc Bredas³

¹*University of Washington*; ²*University of Arizona*; ³*Georgia Institute of Technology* and ⁴*National Renewable Energy Laboratory*

P1-A04 - FULLERENE SELF-ASSEMBLY AS A MEANS TO CONTROL MORPHOLOGY IN POLYMER/FULLERENE BULK HETEROJUNCTION SOLAR CELLS

[MEEM] Christopher Tassone¹, Alexander Ayzner¹, Robert Kennedy¹, Yves Rubin¹, Benjamin Schwartz¹, and Sarah Tolbert¹

¹*UCLA*

P1-A05 - P3HT/PCBM BULK HETEROJUNCTION ORGANIC PHOTOVOLTAICS: CORRELATING EFFICIENCY AND MORPHOLOGY

[PHaSE] Dian Chen¹, Atsuhiko Nakahara², Dongguang Wei³, and Thomas P. Russell⁴

¹*U Mass Amherst*; ²*Kurashiki Research Center*; ³*Carl Zeiss NTS LLC* and ⁴*U Mass Amherst*

P1-A06 - SELF-ASSEMBLY OF MIXTURES OF NANORODS IN BINARY, PHASE-SEPARATING BLENDS

[PHaSE] Anna Balazs¹, Li-Tang Yan¹, Egor Maresov¹, and Gavin A Buxton²

¹*Univ of Pittsburgh* and ²*Robert Morris University*

P1-A07 - DESIGN, SYNTHESIS, AND CHARACTERIZATION OF CHEMICALLY TAILORED SEMICONDUCTOR NANOPARTICLES

[RPEMSC] Brandi Cossari¹

¹*Columbia University*

P1-B01 - NEW TYPE OF SEMICONDUCTOR NANOCRYSTALS AND SEMICONDUCTOR-METAL NANOHYBRIDS FOR EFFICIENT CAPTURE OF SOLAR RADIATION

[CASP] Anshu Pandey¹, Liang Li¹, Bishnu P. Khanal¹, Hsinhan Tsai¹, Hsing-Lin Wang¹, Jeffrey M. Pietryga¹, and Victor I. Klimov¹

¹*Los Alamos National Laboratory*

P1-B02 - CHEMICAL MODIFICATION OF PbSE QUANTUM DOT ARRAYS TO ENHANCE MULTIPLE EXCITON GENERATION AND IMPROVE DEVICE EFFICIENCY

[CASP] Octavi E. Semonin¹, Joseph M. Luther¹, Jianbo Gao¹, Sukgeun Choi¹, Matthew C. Beard¹, and Arthur J. Nozik¹

¹*National Renewable Energy Laboratory*

P1-B03 - INGAN/GAN QUANTUM WELL SOLAR CELLS FOR MULTI-JUNCTION CONCENTRATOR APPLICATION

[CEEM] Carl Neufeld¹, Samantha Cruz¹, Robert Farrell¹, Michael Iza¹, Stacia Keller¹, Shuji Nakamura¹, Steven DenBaars¹, James Speck¹, and Umesh Mishra¹

¹*UCSB*

P1-B04 - THREE-DIMENSIONAL NANOJUNCTION DEVICE ARCHITECTURES FOR THIN-FILM PHOTOVOLTAICS

[CNEEC] Artit Wangperawong¹ and Stacey F. Bent¹

¹*Stanford University*

P1-B05 - GIANT ANHARMONIC PHONON SCATTERING IN PbTe: INELASTIC NEUTRON SCATTERING AND PHONON CALCULATIONS
[S3TEC] Olivier Delaire¹, Karol Marty¹, Jie Ma¹, Andrew May¹, Michael McGuire¹, Mao-Hua Du¹, David Singh¹, and Brian Sales¹
¹ORNL

P1-C01 - ULTRAFast ELECTRON TRANSFER AND PHOTOCHEMICAL HYDROGEN PRODUCTION VIA COVALENT CHROMOPHORE-HYDROGENASE MODEL COMPLEX ASSEMBLIES
[ANSER] Samuel, Amanda P. S.¹, Co, Dick T.¹, Poddutoori, Premaladha¹, Vagnini, Michael T.¹, and Wasielewski, Michael R.¹
¹Northwestern University

P1-C02 - TAILORING THE ARCHITECTURE OF LIGNIFIED WALLS
[C3Bio] Jeong Im Kim¹, Joe Cox¹, Anna Olek¹, Nick Carpita¹, Maureen McCann¹, Dan Szymanski¹, and Clint Chapple¹
¹Purdue University

P1-C03 - REDUCTIVE ACTIVATION OF FATTY ACID SYNTHASE - A MECHANISM OF REGULATING FATTY ACID BIOSYNTHESIS
[CABS] Hui Chen¹, Huimin Man¹, Jinxia Wu¹, and Oliver Yu¹
¹Donald Danforth Plant Science Center

P1-C04 - USING COMBINED OMICS TOOLS TO INVESTIGATE REGULATION OF METABOLISM IN CHLAMYDOMONAS
[CABS] Jeong-Jin Park¹, Mahmoud Gargouri¹, and David R. Gang¹
¹Washington State University

P1-C05 - POROUS ANTIMONY TIN OXIDE AS A CONDUCTIVE HOST FOR A FUNCTIONALIZED DNA NANOCAGE
[BISfuel] Chad R. Simmons¹, Xixi Wei¹, Alex Volosin¹, Dominik Schmitt¹, Dong-Kyun Seo¹, Yan Liu¹, and Hao Yan¹
¹Arizona State University

P1-C06 - TOWARDS BIO-INSPIRED MANGANESE-CALCIUM BIMETALLIC CENTERS FOR ELECTROCATALYTIC WATER OXIDATION
[BISfuel] Matthieu Koepf¹, Benjamin D. Sherman¹, Ana L. Moore¹, Devens Gust¹, and Thomas A. Moore¹
¹Arizona State University

P1-C07 - MOLECULAR SIEVE CATALYSTS AND ADSORBENTS FOR EFFICIENT SYNTHESIS AND PURIFICATION PROCESSES OF 5-HYDROXYMETHYL FURFURAL AND ITS ETHERS
[CCEI] Nafiseh Rajabbeigi¹ and Michael Tsapatsis¹
¹University of Minnesota

P1-C08 - ACCURATE COMPUTED THERMOCHEMISTRY AND KINETICS FOR THE REACTION BETWEEN N-BUTANOL AND THE HYDROPEROXYL RADICAL
[CEFRC] Ionut Alecu¹, Tao Yu¹, Jingjing Zheng¹, and Donald Truhlar¹
¹University of Minnesota

P1-C09 - NANOMECHANICAL IMAGING AND MAPPING OF PLANT CELL WALLS BY ATOMIC FORCE MICROSCOPY
[CLSF] Sahar Maghsoudy-Louyeh¹, Tian Zhang¹, Yong Bum Park¹, Daniel J. Cosgrove¹, and Bernhard R. Tittmann¹
¹The Pennsylvania State University

P1-C10 - MOLECULAR ELECTROCATALYSTS FOR HYDROGEN PRODUCTION AND OXIDATION
[CME] Jenny Y. Yang¹, Uriah J. Kilgore¹, Monte Helm¹, Stuart E. Smith¹, John A. Roberts¹, Michael P. Stewart¹, Douglas P. Pool¹, Daniel L. DuBois¹, Mary Rakowski DuBois¹, and R. Morris Bullock¹
¹Pacific Northwest National Laboratory

P1-C11 - Ni(II) COMPLEXES FOR HYDROGEN OXIDATION AND HYDROGEN PRODUCTION: AN AB-INITIO MOLECULAR DYNAMICS INVESTIGATION
[CME] Raugei Simone¹, Chen Shentan¹, Ho Ming-Hsun¹, Rousseau Roger¹, Dupuis Michel¹, DuBois Daniel, and Bullock R. Morris¹
¹ Pacific Northwest National Laboratory

P1-C12 - TEMPERATURE AND IONIC STRENGTH EFFECTS ON THE CHLOROSOME LIGHT-HARVESTING ANTENNA COMPLEX
[PARC] Joseph K.-H. Tang¹, Liying Zhu¹, Volker S. Urban², Aaron M. Collins¹, Pratim Biswas¹, and Robert E. Blankenship¹

¹Washington University in St. Louis and ²Oak Ridge National Laboratory

P1-C13 - SYNTHESIS AND CHARACTERIZATION OF NANO-BIOHYBRID LIGHT HARVESTING COMPLEXES FOR SOLAR UTILIZATION
[PARC] Woo-Jin An¹, Joseph K.H. Tang¹, Robert E. Blankenship¹, and Pratim Biswas¹

¹Washington University in St. Louis

P1-C14 - STRUCTURE-PROPERTY RELATIONSHIPS OF PHOSPHONATE-BASED RUTHENIUM(II) BIPYRIDINE DYES ON NANOCRYSTALLINE TiO₂ IN AN AQUEOUS ENVIRONMENT

[UNC] Kenneth Hanson¹, M. Kyle Brennaman¹, Hanlin Luo¹, Mike Norris¹, Christopher Glasson¹, Javier J. Concepcion¹, Wenjing Song¹, and Thomas J. Meyer¹

¹UNC

P1-D01 - AUTONOMIC PROTECTION, REPAIR, AND SHUTDOWN OF LI-ION BATTERIES

[CEES] B. Blaiszik¹, M. Baginska¹, S. Odom¹, E. Jones¹, S. Kang¹, A. Abouimrane², W. Weng², Z. Zhang², J. Moore¹, S. White¹, N. Sottos¹, and K. Amine¹

¹University of Illinois Urbana Champaign and ²Argonne National Laboratory

P1-D02 - CENTER FOR ELECTRICAL ENERGY STORAGE: AN OVERVIEW

[CEES] M. Thackeray¹, P. Fenter¹, J. Elam¹, L. Curtiss¹, H. Kung², M. Hersam², A. Gewirth³, and J. Moore³

¹Argonne National Laboratory; ²Northwestern University and ³University of Illinois Urbana Champaign

P1-D03 - 'CLICK' IMMOBILIZATION OF CATALYSTS ON ELECTRODES

[CETM] Christopher E. D. Chidsey¹, Vadim R. Ziatdinov¹, and Ali Hosseini¹

¹Stanford University

P1-D04 - SURFACE-MODIFIED SILICON NANOSTRUCTURES FOR ENHANCED ENERGY STORAGE

[CST] Justin T. Harris¹, Sankaran Murugesan¹, Anthony Dylla¹, Aaron M. Chockla¹, Keith J. Stevenson¹, and Brian A. Korgel¹

¹University of Texas at Austin

P1-D05 - COMPUTATIONAL MODELING OF CAPACITIVE CHARGE STORAGE IN NANOSTRUCTURED OXIDES

[MEEM] Fei Zhou¹ and Vidvuds Ozolins¹

¹UCLA

P1-D06 - EXPLORING ELECTROCHEMICAL PROCESSES OF METAL FLUORIDE/OXYFLUORIDE NANOCOMPOSITES AS CATHODE MATERIALS FOR LI ION BATTERIES

[NECCES] Lin-Shu Du¹, James P. Pastore¹, Clare P. Grey¹, Feng Wang², Yimei Zhu², Jason Graetz², Andrew Gmitter³, Nathalie Pereira³, Glenn G. Amatucci³, Olaf Borkiewicz¹, Karena W. Chapman¹, and Peter J. Chupas¹

¹Stony Brook University; ²Brookhaven National Laboratory and ³Rutgers University

P1-E01 - HIGH EFFICIENCY NONPOLAR AND SEMIPOLAR INGAN LEDs

[CEEM] James Speck¹, Ravi Shivaraman¹, Elisa Matioli¹, Dobri Simenov¹, Steve DenBaars¹, Shuji Nakamura¹, and Claude Weisbuch¹

¹UCSB

P1-E02 - TOWARDS ACCURATE THERMOCHEMICAL KINETICS OF BIODIESEL COMBUSTION FROM MULTIREFERENCE CONFIGURATION INTERACTION CALCULATIONS

[CEFRC] Victor Oyeyemi¹, Ting Tan¹, Michele Pavone¹, and Emily A. Carter¹

¹Princeton University

P1-E03 - THERMAL ANALYSIS OF HIGH INTENSITY OLEDs USING A TRANSMISSION MATRIX APPROACH

[CEN] Xiangfei Qi¹ and Stephen Forrest¹

¹University of Michigan

P1-E04 - PAIRS AND VORTICES ABOVE AND BELOW TC

[CES] Wai-Kwong Kwok¹, Ulrich Welp¹, George Crabtree¹, Mike Norman¹, Juan Atkinson¹, Dale Van Harlingen², Raffi Budakian², Gregory Polshyn², Peter Johnson³, and Seamus Davis^{3,4}

¹Argonne National Laboratory; ²University of Illinois at Urbana-Champaign; ³Brookhaven National Laboratory and ⁴Cornell University

P1-E05 - NEW SUPERCONDUCTORS BY DESIGN

[CES] Wai Kwon Kwok¹, Tony Leggett², Laura Greene², Philip Phillips², Cedomir Petrovic³, Ivan Bozovic³, Peter Abbamonte², Mao Zheng², Weicheng Lee², Yize Li², James Lee², and Jim Eckstein²

¹Argonne National Lab; ²University of Illinois, Urbana-Champaign and ³Brookhaven National Lab

P1-E06 - ATOMIC CONFIGURATION STUDIES IN CUBIC AND TETRAGONAL YTTRIA-STABILIZED ZIRCONIA

[HeteroFoaM] Hepeng Ding¹ and Feng Liu¹

¹University of Utah

P1-E07 - SOLID-STATE LIGHTING: AN ENERGY ECONOMICS PERSPECTIVE

[SSLS] JY Tsao¹, HD Saunders², JR Creighton¹, ME Coltrin¹, and JA Simmons¹

¹Sandia National Laboratories and ²Decision Processes Incorporated

P1-E08 - ON THE SYMMETRY OF EFFICIENCY-VERSUS-CARRIER-CONCENTRATION CURVES IN GAINN/GAN LIGHT-EMITTING DIODES AND RELATION TO DROOP-CAUSING MECHANISMS

[SSLS] Qi Dai¹, Qifeng Shan¹, Jaehee Cho¹, E. Fred Schubert¹, Mary H. Crawford², and Daniel D. Koleske²

¹Rensselaer Polytechnic Institute and ²Sandia National Laboratories

P1-F01 - MULTISCALE NUMERICAL METHODS FOR MODELING THE EARTH'S SUBSURFACE

[CFSES] Benjamin Ganis¹, Gergina Pencheva¹, Mary Wheeler¹, Todd Arbogast¹, Hailong Xiao¹, Guangri Xue¹, Mojdeh Delshad¹, and Xianhui Kong¹

¹University of Texas at Austin

P1-F02 - THE COUPLED EFFECTS OF MICROBIAL AND PHYSIC-CHEMICAL PROCESSES ON GEOLOGICAL CARBON STORAGE

[CFSES] Matthew Kirk¹, Susan Altman¹, Philip Bennett², Bayani Cardenas², Thomas Dewers¹, Mojdeh Delshad², Eugenio Santillan², Wen Deng¹, Kuldeep Chaudhary¹, and Hongku Yoon¹

¹Sandia National Laboratories and ²University of Texas at Austin

P1-F03 - FLEXIBLE POROUS FRAMEWORK MATERIALS FOR CARBON CAPTURE

[CGS] Daqiang Yuan¹, Jinhee Park¹, Weigang Lu¹, Jian-Rong Li¹, and Hong-Cai Zhou¹

¹Texas A&M University

P1-F04 - SUB-NANOMETER POROUS MEMBRANES WITH MOLECULAR LEVEL CONTROL OVER PORE CHEMISTRY FOR GAS SEPARATION

[CGS] Rami Hourani¹, Nana Zhao¹, Rob van der Weegen², Beverly Zhang¹, Brett A. Helms², and Ting Xu^{1,2}

¹University of California, Berkeley and ²Lawrence Berkeley National Laboratory

P1-F05 - BIOLOGICAL AND BIOMIMETIC APPROACHES TO CONTROL CARBONATE MINERALIZATION

[NCGC] Jenny Cappuccio¹, Chun-Long Chen¹, Joanne Emerson², Jillian Banfield², Jim DeYoreo¹, Ronald Zuckermann¹, and Caroline Ajo-Franklin¹

¹Lawrence Berkeley National Laboratory and ²University of California, Berkeley

P1-G01 - SYNTHESIS AND CHARACTERIZATION OF HCP METALS WITH CONTROLLED DISLOCATION STRUCTURES

[CDP] Masafumi Tsunekane¹ and Sharvan Kumar¹

¹Brown University

P1-G02 - ELECTROCALORIC EFFECT IN LiNbO₃ AS FUNCTIONS OF PRESSURE AND TEMPERATURE

[EFree] Ronald Cohen¹, Maimon Rose¹, Qing Peng², and P. Ganesh³

¹Carnegie Institution of Washington; ²RPI and ³ORNL

P1-G03 - AN INVESTIGATION OF RADIATION DAMAGE EFFECTS ON MAGNETIC STRUCTURE OF IRON

[CDP] Yang Wang^{1,2}, Malcolm Stocks³, Don Nicholson³, Roger Stoller³, and Aurelian Rusanu³
¹Pittsburgh Supercomputing Center, ²Carnegie Mellon University and ³Oak Ridge National Laboratory

P1-G04 - MD SIMULATIONS OF FREE SURFACE EFFECTS ON ATOMIC DISPLACEMENT CASCADES.

[CDP] Yury Osetskiy¹, Andy Calder², and ¹Roger Stoller
¹ORNL and ²University of Liverpool

P1-G05 - SIMULATION OF DISPLACEMENT CASCADE EVOLUTION USING MONTE CARLO METHODS

[CDP] Haixuan Xu¹, Yury Osetsky¹, and Roger Stoller¹
¹Oak Ridge National Lab

P1-G06 - LARGE SCALE DENSITY FUNCTIONAL THEORY MODELING OF MAGNETIC PROPERTIES OF SCREW DISLOCATIONS IN ALPHA-IRON

[CDP] Khorgolkhuu Odbadrakh¹, Aurelian Rusanu¹, George Stocks¹, Yang Wang², German Samolyuk¹, and Don Nicholson¹
¹ORNL and ²PSC

P1-G07 - FOUR-DIMENSIONAL CHARACTERIZATION OF DISLOCATION-DEFECT INTERACTIONS IN THE TEM

[CDP] Virginia McCreary¹, Grace S. Liu¹, Martha Briceno¹, and Ian M. Robertson¹
¹University of Illinois, Urbana

P1-G08 - QUANTITATIVE TENSILE TESTING OF MO-ALLOY NANO-FIBERS IN A TEM

[CDP] Chisholm, Claire^{1,2}, Bei, Hongbin², Oh, Jason⁴, Syed Asif, S.A.⁵, Warren, Oden L.⁵, Shan, Zhiwei^{5,6}, George, Easo P.^{4,7}, and Minor, Andrew M.^{1,2}
¹University of California, Berkeley ²Lawrence Berkeley National Laboratory; ⁴Oak Ridge National Laboratory; ⁵Hysitron Incorporated; ⁶Xi'an Jiaotong University and ⁷University of Tennessee

P1-G09 - ATOMISTIC MODELING AND LASER EXPERIMENTS ON SHOCKED CU/NB NANOLAYERED COMPOSITES

[CMIME] Timothy C. Germann¹, Ruifeng Zhang¹, Jian Wang¹, Xiang-Yang Liu¹, Shengnian Luo¹, Weizhong Han¹, Irene Beyerlein¹, and Amit Misra¹
¹LANL

P1-G10 - GRAIN BOUNDARY RESPONSE IN SHOCKED COPPER MULTICRYSTALS: TEM CHARACTERIZATION AND ATOMISTIC MODELING

[CMIME] Alejandro Perez-Bergquist¹, Christian Brandl¹, Juan Pablo Escobedo¹, Carl Trujillo¹, Ellen Cerreta¹, George Gray III¹, and Timothy Germann¹
¹LANL

P1-G11 - MICROSTRUCTURAL AND INTERFACIAL EVOLUTIONS OF CU-NB COMPOSITES SUBJECTED TO SEVERE PLASTIC DEFORMATION

[CMIME] E. Ekiz¹, N. Q. Vo¹, Y. Ashkenazy^{1,2}, P. Bellon³, R. S. Averback¹, N. Mara¹, M. Pouryazdan Panah⁴, and H. Hahn⁵
¹University of Illinois at Urbana-Champaign, ²Racah Institute of Physics, ³Hebrew University of Jerusalem; ⁴Los Alamos National Laboratory; ⁵Institute of Nanotechnology and Karlsruhe Institute of Technology (KIT)

P1-G12 - THE ROLE OF GRAIN BOUNDARIES IN RADIATION DAMAGE EVOLUTION IN SRTiO₃ AND TiO₂

[CMIME] Aylin Karakuscu¹, Blas Uberuaga¹, and Chris Stanek¹
¹Los Alamos National Laboratory

P1-G13 - ANALYTICAL PREDICTIONS OF HETEROINTERFACE INTERACTIONS WITH DEFECTS

[CMIME] Kedarnath Kolluri¹, Aurelien Vattre¹, Abishek Kashinath¹, and Michael J. Demkowicz¹
¹Massachusetts Institute of Technology

P1-G14 - HELIUM BUBBLE FORMATION AT GOLD TWIST BOUNDARIES

[CMIME] Michael Nastasi¹, Zengfeng Di¹, Qiangmin Wei¹, Amit Misra¹, Richard Hoagland¹, Yongqiang Wang¹, Jonghan Won¹, Xian Ming Bai¹, Blas Uberuaga¹, Enrique Saez¹, Jeffery Hetherly¹, and Alfredo Caro¹
¹LANL

P1-G15 - EFFECTS OF RADIATION AND ANNEALING ON MICROSTRUCTURE AND THERMAL TRANSPORT IN CeO_2
 [CMSNF] Clarissa Yablinsky¹, Peng Xu¹, Anthony Schulte¹, David Hurley², Jian Gan², and Todd Allen³
¹University of Wisconsin-Madison; ²Idaho National Laboratory and ³University of Wisconsin-Madison

P1-G16 - CHARACTERIZATION OF NUCLEAR FUEL WITH 3D ATOM PROBE
 [CMSNF] Hunter Henderson¹, Billy Valderrama¹, and In-Wook Park²
¹University of Florida ; ²Colorado School of Mines

P1-G17 - DEPOSITION AND POST-ANNEALING OF CERIA FILMS DEPOSITED BY PULSED UNBALANCED MAGNETRON SPUTTERING
 [CMSNF] In-Wook Park¹, John Moore¹, Jianliang Lin¹, Michele Manuel², Anter El-Azab³, Todd Allen⁴, Peng Xu⁴, David Hurley⁵, Marat Khafizov⁵, and Jian Gan⁵
¹Colorado School of Mines ; ²University of Florida ; ³Florida State University ; ⁴University of Wisconsin-Madison and ⁵Idaho National Laboratory

P1-G18 - STRUCTURE AND DYNAMICS OF IONIC LIQUID-RHODAMINE 6G SOLUTIONS: NMR, FLUORESCENCE CORRELATION SPECTROSCOPY AND MOLECULAR MODELING
 [FIRST] Jianchang Guo¹, Kee Sung Han¹, Song Li², Guang Feng², P. Ganesh³, Paul R.C. Kent³, Sheng Dai³, Peter T. Cummings², Shannon W. Mahurin³, Edward W. Hagaman³, and Robert W. Shaw³
¹Oak Ridge National Laboratory; ²Vanderbilt University and ³Oak Ridge National Laboratory

P1-G19 - ACTINIDE MATERIALS UNDER EXTREME CONDITIONS: AN EXPERIMENTAL AND COMPUTATIONAL APPROACH
 [MSA] Fuxiang Zhang¹, Maik Lang¹, Jiaming Zhang¹, Jianwei Wang¹, Udo Becker¹, and R.C. Ewing¹
¹University of Michigan

P1-G20 - NANO-SCALED MATERIALS UNDER HIGH PRESSURES
 [EFree] Lin Wang¹, Wenge Yang¹, Yang Ding¹, Yugang Sun², Wendy L. Mao³, and Ko-Kwang Mao⁴
¹Carnegie Institution of Washington; ²Argonne National Laboratory; ³Stanford University and ⁴Carnegie Institution of Washington

P1-G21 - HIGH PRESSURE DISCOVERY OF RHH_2 AND AMBIENT PRESSURE RECOVERY
 [EFree] Bing Li¹, Yang Ding¹, Wenge Yang¹, and Ho-Kwang (Dave) Mao¹
 Geophysical Lab Carnegie Institution of Washington¹

P1-G22 - PERSISTENCE OF JAHN-TELLER DISTORTION UP TO THE INSULATOR TO METAL TRANSITION IN LaMnO_3
 [EFree] Maria Baldini¹, Viktor V. Struzhkin¹, Alex F. Goncharov¹, Paolo Postorino², and Wendy L. Mao³
¹Carnegie Institution of Washington; ²University Sapienza and ³Stanford University

P1-G23 - MELTING OF REFRACTORY MATERIALS IN EXTREME ENVIRONMENTS
 [EFree] Amol¹, Liuxiang¹, and Reinhard¹
Karandikar¹; Yang¹ and Boehler¹
¹Carnegie Institution of Washington

P1-G24 - MAKING SUPERCONDUCTING TRANSITION TEMPERATURE HIGHER FOR ENERGY APPLICATION
 [EFree] Xiao-Jia Chen¹, Viktor V. Struzhkin¹, Alexander F. Goncharov¹, Russell J. Hemley¹, and Ho-Kwang Mao¹
¹Carnegie Institution of Washington

P1-G25 - HIGH PRESSURE CHEMISTRY WITH PERIODIC MESOSTRUCTURES
 [EFree] Kai Landskron¹, Paritosh Mohanty¹, Manuel Weinberger¹, Yingwei Fei², Ho-Kwang Mao², Dong Li, Tianbo Liu¹, Neil Coombs¹, Ilke Arslan³, Nigel Browning⁴, and Volkan Ortalan⁴
¹Lehigh University; ²Carnegie Institution of Washington; ³University of Toronto and ⁴University of California at Davis

P1-H01 - SYNTHESIS, MODELING AND APPLICATION OF MIXED RARE EARTH OXIDES
 [CALCD] Kerry Dooley¹, Michael Janik², Adam Mayernick², Rui Li¹, Matthew Krcha², Joseph Bridges¹, Sumana Adusumilli¹, and Weishi Kong¹
¹Louisiana St. Univ. and ²Pennsylvania St. Univ.

P1-H02 - A COMPUTATIONAL APPROACH TO EVALUATING CATALYST PARTICLE SIZE AND STRUCTURE EFFECTS: COMPARISONS OF HOMOGENEOUS 13-ATOM AND CORE-SHELL 38-ATOM BIMETALLIC CLUSTERS

[CALCD] Ming He¹, James McAliley¹, and David Bruce¹
¹*Clemson University*

P1-H03 - ROOM TEMPERATURE WATER SPLITTING AT THE SURFACE OF MAGNETITE

[CALCD] Gareth Parkinson¹, Zbynek Novotny¹, Peter Jacobson¹, Michael Schmid¹, and Ulrike Diebold¹
¹*TU Wien*

P1-H04 - MULTI-SCALE MODELING OF CATALYSTS FOR CO₂ REDUCTION TO ALCOHOLS

[CALCD] Aravind Asthagiri¹, Susan Sinnott², Tao Liang², Tzu-Ray Shan², Bryce Devine², Donghwa Lee², Yu-Ting Cheng², Beverly Hinojosa², Simon Phillpot², Michael Janik³, and John Flake⁴
¹*The Ohio State University*; ²*University of Florida*; ³*Penn State University* and ⁴*Louisiana State University*

P1-H05 - A DENSITY FUNCTIONAL THEORY STUDY OF SYNGAS CLEANUP WITH CERIA-BASED RARE EARTH OXIDES

[CALCD] Matthew Krcha¹, Adam Mayernick¹, Rui Li², Kerry Dooley², and Michael Janik¹
¹*Pennsylvania State University* and ²*Louisiana State University*

P1-H06 - AB INITIO CALCULATION OF REDOX POTENTIALS IN TRANSITION METAL COMPLEXES

[CETM] Steven J. Konezny¹, Mark D. Doherty², C. Moyses Araujo³, Oana R. Luca³, Robert H. Crabtree³, Grigori L. Soloveichik², and Victor S. Batista³
¹*Yale University*; ²*GE Global Research* and ³*Yale University*

P1-H07 - INVERSE BAND STRUCTURE OF NANOSTRUCTURES: FINDING ATOMIC CONFIGURATIONS OF SI AND GE THAT PRODUCE DIRECT GAP SUPERSTRUCTURES

[CID] Mayeul d'Avezac¹, Jun-Wei Luo¹, Alex Zunger¹, and Stephan Lany¹
¹*NREL*

P1-H08 - COMPUTATIONAL DISCOVERY AND HIGH THROUGHPUT SYNTHESIS OF NEW A₂BX₄ AND ABX SEMICONDUCTORS FOR SOLAR ENERGY

[CID] Vladan Stevanovic¹, Xiuwen Zhang¹, Andriy Zakutayev¹, David Ginley¹, and Alex Zunger¹
¹*NREL*

P1-H09 - WILL A DOPED WIDE GAP MATERIAL CONDUCT? POLARON VS. BANDS IN SOLAR OXIDES

[CID] Arpun Nagaraja¹, Nicola Perry¹, Thomas Mason¹, Yang Tang¹, Matthew Grayson¹, Tula Paudel², Stephan Lany², and Alex Zunger²
¹*Northwestern University* and ²*NREL*

P1-H10 - DESIGN AND DISCOVERY OF A NEW CLASS OF A₃B₀ P-TYPE CONDUCTORS

[CID] Giancarlo Trimarchi¹, Stephan Lany², and Kenneth Poepelmeier¹
¹*Northwestern University* and ²*NREL*

P1-H11 - PHONON LIFETIMES AND THERMAL CONDUCTIVITY IN UO₂: AN INTEGRATED SIMULATION AND EXPERIMENTAL APPROACH

[CMSNF] Aleksandr Chernatynskiy¹, Charles Flint¹, Judy Pang², William Buyer³, Bennett Larson², Mark Lumsden², Douglas Abernathy², and Simon Phillpot¹

¹*University of Florida*; ²*Oak Ridge National Laboratory* and ³*National Research Council, Chalk River Laboratory*

P1-H12 - ORDER-DISORDER TRANSITIONS OF FILLER SPECIES IN SKUTTERUDITES

[CSTEC] Hyounghchul Kim¹, Massoud Kaviany¹, John C. Thomas¹, Anton Van der Ven¹, Ctirad Uher¹, and Baoling Huang²
¹*The University of Michigan* and ²*Hong Kong University of Science and Technology*

P1-H13 - THEORETICAL DEVELOPMENTS AND COMPUTATIONAL MATERIALS SCIENCE FOR ENERGY SYSTEMS

[EMC2] Robert Berger¹, Kendra Weaver², Ravishankar Sundararaman², Tomas Arias², Craig Fennie², and Jeff Neaton¹
¹*Lawrence Berkeley Lab* and ²*Cornell University*

P1-H14 - DYNAMICS OF CONFINED WATER AND ELECTROLYTES

[FIRST] Suresh M. Chathoth¹, Eugene Mamontov¹, Alexander I. Kolesnikov¹, Gernot Rother¹, Michael Rouha², Peter T. Cummings², Pasquale Fulvio¹, X. Wang¹, Sheng Dai¹, Jake McDonough³, Volker Presser³, and Yury Gogotsi³
¹Oak Ridge National Laboratory; ²Vanderbilt University and ³Drexel University

P1-H15 - STRUCTURE OF ELECTROLYTES AT CARBON ELECTRODE SURFACES: COUPLING X-RAY AND NEUTRON SCATTERING WITH MOLECULAR MODELING

[FIRST] Hua Zhou¹, Paul Fenter¹, Volker Presser², Jake McDonough², Yury Gogotsi², Matthew Wander², Kevin Shuford², P. Ganesh³, Paul R.C. Kent³, De-en Jiang³, Gernot Rother³, Ariel Chialvo³, Pasquale Fulvio³, Sheng Dai³, Michael Rouha⁴, Guang Feng⁴, and Peter T. Cummings⁴
¹Argonne National Laboratory; ²Drexel University; ³Oak Ridge National Laboratory and ⁴Vanderbilt University

P1-H16 - A QUANTUM CHEMICAL STUDY OF URANYL-PEROXIDE NANOCLUSTER GROWTH MECHANISMS

[MSA] Bess Vlasisavljevich¹, Pere Miro¹, Christopher Cramer¹, Peter C. Burns², and ¹Laura Gagliardi
¹University of Minnesota and ²University of Notre Dame

P1-H17 - NANOSCALE CONTROL OF ACTINIDE MATERIALS

[MSA] Peter C. Burns¹, Ginger E. Sigmon¹, Daniel K. Unruh¹, Jie Ling¹, Jie Qiu¹, Christine Wallace¹, and Jennifer E.S. Szymanowski¹
¹University of Notre Dame

P1-H18 - OXYGEN-EXCHANGE STUDIES OF URANYL COMPLEXES BY NMR

[MSA] Rene L. Johnson¹, Stephen J. Harley¹, C. Andre Ohlin¹, Adele F. Panasci¹, and William H. Casey¹
¹University of California, Davis

P1-H19 - TEMPLATING EFFECTS ON ASSEMBLY OF ACTINIDE NANO-CAPSULES

[MSA] May Nyman¹
¹Sandia National Laboratory

P1-H20 - IRRADIATION-INDUCED GRAIN GROWTH IN NANOCRYSTALLINE CERIA

[MSA] Yanwen Zhang^{1,2}, Philip Edmondson¹, Tamas Varga³, Sandra Moll³, Fereydoon Namavar⁴, and William J. Weber^{1,2}
¹Oak Ridge National Laboratory and ²University of Tennessee, Knoxville; ³Pacific Northwest National Laboratory and ⁴University of Nebraska Medical Center

P1-H21 - USING ATOMIC LAYER DEPOSITION TO HINDER SOLVENT DECOMPOSITION IN LITHIUM ION BATTERIES: FIRST PRINCIPLES MODELING AND EXPERIMENTAL STUDIES

[NEES] Kevin Leung¹, Yue Qi², Kevin Zavadil¹, Yoon Seuk Jung³, Ann Dillon³, and Andrew Cavanaugh⁴
¹Sandia National Laboratories; ²General Motors; ³National Renewable Energy Laboratory and ⁴University of Colorado

P1-H22 - ELECTRONIC STRUCTURE AND TRANSPORT IN HEUSLER ALLOYS WITH PSEUDO-GAPS*

[RMSSEC] S. D. (Bhanu) Mahanti¹
¹Michigan State University

P1-H23 - COMBINED COMPUTATIONAL AND EXPERIMENTAL STUDY OF METAL-MEDIATED C-O BOND FORMATION

[CCHF] Joanna R. Webb¹, Travis M. Figg², Mark J. Pouy¹, Bruce M. Prince², T. Brent Gunnoe¹, Thomas R. Cundari², and John T. Groves³
¹University of Virginia; ²University of North Texas and ³Princeton University

P1-H24 - LIGHT INDUCED SELF ASSEMBLY OF SWITCHABLE COLLOIDS

[NERC] Prateek Jha¹, Vladimir Kuzovkov², Bartosz Grzybowski¹, and Monica Olvera de la Cruz¹
¹Northwestern University and ²University of Latvia

P1-H25 - SELF-ASSEMBLY OF SWITCHABLE COLLOIDS

[NERC] Antonio Osorio¹, Igal Szleifer², and Sharon Glotzer¹
¹University of Michigan and ²Northwestern University

P1-I01 - MULTIMODAL IMAGING AND MODELING OF LIGNOCELLULOSIC BIOMASS

[C3Bio] Lee Makowski¹, Mike Crowley², Michael Himmel², Shi-You Ding², Bryon Donohoe², Jeremy Madden³, Garth Simpson³, Jyotsana Lal, and Ross Harder

¹*Northeastern University*; ²*NREL*; ³*Purdue University* and ⁴*Argonne National Laboratory*

P1-I02 - HIGH-RESOLUTION X-RAY IMAGING OF DISLOCATIONS AND THEIR INTERACTIONS

[CDP] Eliot Specht¹, Jon Tischler¹, Ben Larson¹, Matt Brandes², Jonghan Kwon², Michael Mills², Wenjun Liu³, and Gene Ice¹

¹*Oak Ridge National Laboratory*; ²*Ohio State University* and ³*Advanced Photon Source*

P1-I03 - A NEW APPROACH TO MODELING PORE-SCALE REACTIVE TRANSPORT PROCESSES

[NCGC] Sergi Molins-Rafa¹, David Trebotich¹, Chaopeng Shen¹, and Carl Steefel¹

¹*Lawrence Berkeley National Laboratory*

P1-I04 - PROBING AND MAPPING ELECTRODE PROPERTIES USING RAMAN SPECTROSCOPY

[HeteroFoaM] Kevin Blinn¹, Xiayi Li¹, Samson Lai¹, Mostafa El-Sayed¹, Andreas Heyden², and Meilin Liu¹

¹*Georgia Institute of Technology* and ²*University of South Carolina*

P1-I05 - EXPLORING CELLULOSE STRUCTURE BY SFG SPECTROSCOPY

[CLSF] Seong H. Kim¹, Christopher Lee¹, Daniel J. Cosgrove¹, Yong Bum Park¹, Jeffrey M. Catchmark¹, Jin Gu¹, Anna Barnette¹, and Laura Bradley¹

¹*The Pennsylvania State University*

P1-I06 - REVEALING SOLAR FUEL GENERATION PATHWAYS USING X-RAYS

[ANSER] Lin X. Chen^{1,2}, David M. Tiede¹, Michael Mara¹, Jier Huang², and Oleksandr Kokhan¹

¹*Argonne National Laboratory* and ²*Northwestern University*

P1-I07 - DESIGN AND CONTROLLED SYNTHESIS OF SINTERING-RESISTANT CU/ZNO METHANOL SYNTHESIS CATALYSTS NANOCONFINED IN MESOPOROUS HOSTS

[CALCD] Dr. Gonzalo Prieto¹, Jovana Zecevic¹, Dr. Heiner Friedrich¹, Prof. Krijn P. de Jong¹, and Dr. Petra E. de Jongh¹

¹*Utrecht University (The Netherlands)*

P1-I08 - CROSS-CUTTING RESEARCH THRUSTS IN THE CATALYSIS CENTER FOR ENERGY INNOVATION

[CCEI] Jingguang Chen¹

¹*University of Delaware*

P1-I09 - FULLY PHASE-COHERENT MULTIDIMENSIONAL SPECTROSCOPY: NOVEL METHODS FOR EXPLORING EXCITON DYNAMICS

[CE] Patrick Wen¹, Dylan H. Arias¹, Katherine W. Stone¹, and Keith A. Nelson¹

¹*Massachusetts Institute of Technology*

P1-I10 - ADVANCED TOOLS FOR THE DEVELOPMENT OF NOVEL PHOTOVOLTAIC MATERIALS: COMBINATORIAL DEPOSITION AND ANOMALOUS X-RAY DIFFRACTION

[CID] Joanna Bettinger¹, Yezhou Shi¹, Andriy Zakutayev², Paul Ndione², Philip Parilla², John Perkins², David Ginley², and Michael Toney¹

¹*SLAC National Accelerator Laboratory* and ²*NREL*

P1-I11 - THE TOOLS OF INTERFACE CHARACTERIZATION: THE CENTER FOR INTERFACE SCIENCE: SOLAR ELECTRIC MATERIALS

[CISSEM] Neal Armstrong¹, Mariola Macech¹, Gordon MacDonald¹, Samuel Graham², Yongjin Kim², Jeanne Pemberton¹, Oliver Monti, Anne Simon¹, Brooke Beam¹, Scott Saavedra¹, Bradley Macleod¹, and David Ginger³

¹*University of Arizona*; ²*Georgia Institute of Technology* and ³*University of Washington*

P1-I12 - SPATIALLY RESOLVED THERMAL TRANSPORT IN SURROGATE NUCLEAR FUEL MATERIALS WITH ENGINEERED MICROSTRUCTURES

[CMSNF] Marat Khafizov¹, David Hurley¹, In-Wook Park², John Moore², Jianliang Lin², Ryan Deskins³, and Anter El-Azab⁴

¹*Idaho National Laboratory*; ²*Colorado School of Mines*; ³*Florida State University* and ⁴*Florida State University*

P1-I13 - PHASE FIELD MODELING OF VOIDS NUCLEATION AND GROWTH IN IRRADIATED MATERIALS

[CMSNF] Srujan Rakkam¹, Thomas Hochrainer¹, Todd Allen², and ³Anter El-Azab

¹Florida State University; ²University of Wisconsin-Madison and ³Florida State University

P1-I14 - CONTROLLED NANOSTRUCTURE FABRICATION FOR PHOTOVOLTAICS AND STORAGE USING STM-ALD

[CNEEC] Philip Van Stockum¹, James Mack¹, and Fritz Prinz¹

¹Stanford University

P1-I15 - STRUCTURE OF Li[LIM]O₂ ELECTRODES FOR LITHIUM-ION BATTERIES

[CST] Karalee Jarvis¹, Zengquiang Deng¹, Eun Sung Lee¹, Penghao Xiao¹, Graeme Henkelman¹, Arumugam Manthiram¹, and Paulo Ferreira¹

¹University of Texas at Austin

P1-I16 - INSTRUMENTATION FOR NANOSCALE THERMOMETRY AND PICOWATT CALORIMETRY

[CSTEC] Pramod Reddy¹, Seid Sadat¹, Yi-Jie Chau¹, and Aaron Tan¹

¹University of Michigan

P1-I17 - BEAM-ASSISTED NANOSTRUCTURING IN THIN FILMS FOR THERMOELECTRICS

[CSTEC] Michael Warren¹, Yuwei Li¹, Vladimir Stoica¹, Lynn Endicott¹, Guoyu Wang¹, Adam Wood¹, Justin Canniff¹, Roy Clarke¹, Ctirad Uher¹, and Rachel Goldman¹

¹University of Michigan

P1-I18 - UNIQUE CAPABILITIES AND TECHNIQUES: REAL-TIME HIGH-ENERGY X-RAY DIFFRACTION AND REAL-TIME STEM

[EMC2] Jun Young Ko¹, Yingchao Yu¹, Manuel Plaza¹, Xin Huang¹, Alexander Kazimirov¹, Huolin Xin¹, Robert Hovden¹, Megan Holtz¹, Julia Mundy¹, David Muller¹, Joel Brock¹, and Hector Abruna¹

¹Cornell University

P1-I19 - IN-SITU S/TEM CHARACTERIZATION OF ELECTRODE/ELECTROLYTE INTERACTIONS FOR ENERGY STORAGE APPLICATIONS

[FIRST] Raymond R. Unocic¹, Leslie A. Adamczyk¹, Nancy J. Dudney¹, P. Ganesh¹, Paul R.C. Kent¹, De-en Jiang¹, and Karren L. More¹

¹Oak Ridge National Laboratory

P1-I20 - SYNTHESIS OF OXIDE 'NANOBOWLS' AND 'ARMOR-COATED' ACTIVE SITES BY TEMPLATED ALD: A NEW PARADIGM IN HETEROGENEOUS CATALYST SYNTHESIS

[IACT] Canlas, Christian P.¹, Lu, Junling², Ray, Natalie¹, Lee, Sungsik², Winans, Randall², Elam, Jeffrey², Stair, Peter¹, and Notestein, Justin¹

¹Northwestern University; ²Argonne National Laboratory

P1-I21 - STABILIZATION OF SUPPORTED METAL NANOPARTICLE CATALYSTS USING ATOMIC LAYER DEPOSITION

[IACT] Junling Lu¹, Hao Feng¹, Peter C. Stair², and ¹Jeffrey W. Elam

¹Argonne National Laboratory; ²Northwestern University

P1-I22 - DIRECT-WRITE ASSEMBLY OF TRANSPARENT CONDUCTING ELECTRODES FOR FLEXIBLE PHOTOVOLTAICS

[LMI] Bok Y. Ahn¹, David Lorang¹, Ralph G. Nuzzo¹, and Jennifer A. Lewis¹

¹University of Illinois

P1-I23 - LIGHT-INDUCED PATTERN FORMATION DURING THE GROWTH OF CHALCOGENIDE FILMS

[LMI] Bryce Sadtler¹, Joseph Beardslee¹, and Nathan Lewis¹

¹California Institute of Technology

P1-I24 - THERMOCHEMICAL STUDIES OF ACTINIDE MATERIALS

[MSA] T. Shvareva¹, C. Armstrong¹, T.J. Park¹, B. Hanken¹, and A. Navrotsky¹

University of California, Davis

P1-I25 - CHARGE-STORAGE PROCESSES IN MODEL MnO_2 -LI-HOPG SYSTEMS: ELECTROCHEMICAL SPM AND UHV-STM INVESTIGATIONS

[NEES] Satyaveda C. Bharath¹, Wentao Song¹, Janice E. Reutt-Robey¹, and Kevin R. Zavadil²
¹University of Maryland and ²Sandia National Laboratories

P1-I26 - LASER ENHANCED ATOM PROBE (LEAP) TOMOGRAPHY

[RMSSEC] Ivan D. Blum¹, Jiaqing He¹, John Androulakis¹, David N. Seidman¹, Vinayak P. Dravid¹, and Mercuri G. Kanatzidis¹
¹Northwestern University

P1-I27 - STRUCTURE OF INTERFACES FOR ORGANIC PHOTOVOLTAIC MATERIALS

[RPEMSC] Theanne Schiros¹
¹Columbia University

P1-I28 - STUDYING THE FUNDAMENTALS OF HEAT TRANSPORT AT SHORT DISTANCES

[S3TEC] Jeremy Johnson¹, Kara Manke¹, Jeffrey Eliason¹, Alexei Maznev¹, Keith Nelson¹, Austin Minnich¹, Maria Luckyanova¹, Kimberlee Collins¹, Gang Chen¹, Adam Jandl¹, Mayank Bulsara¹, Eugene Fitzgerald¹, and Mildred Dresselhaus¹
¹MIT

P1-I29 - WORLD-CLASS INSTRUMENTATION FOR DISCOVERING THE FUNDAMENTALS OF PHOTOVOLTAIC AND SOLAR FUELS DEVICES

[UNC] Kyle Brennaman¹, John Papanikolas¹, Thomas Meyer¹, Andrew Moran¹, Christopher Fecko¹, and Malcolm Forbes¹
¹UNC Chapel Hill

P1-I30 - FACILE PT-TO-PT METHYL GROUP TRANSFER IN $\text{O}^{2-}(\text{DPMS})\text{PT}^{\text{II}}\text{ME}(\text{X})$ - SYSTEMS IN WATER ($\text{X} = \text{OH}^-$, I)

[CCHF] Anna V. Sberegaeva¹ and Andrei N. Vedernikov¹
¹University of Maryland

P1-I31 - MSN SUPPORTED PT COMPLEXES FOR OLEFIN HYDROARYLATION

[CCHF] Jeremy R. Andreatta¹, Hung-Ting Chen², T. Brent Gunnoe¹, Victor S.-Y. Lin³, and Brian G. Trewyn³
¹University of Virginia; ²Iowa State University and ³Iowa State University

P1-I32 - HYDROCARBON OXIDATION IN AQUEOUS AND NONAQUEOUS MEDIUM BY METAL OXO CATALYSTS

[CCHF] Amit Paul¹, Aaron K. Vannucci¹, Jonathan F. Hull¹, Zuofeng Chen¹, Daniel H. Ess², Michael R. Norris¹, Javier J. Concepcion¹, and Thomas J. Meyer¹
¹UNC Chapel Hill and ²Brigham Young University

P1-I33 - A BV TYPE OXIDATION FOR RE-ARYL OXY-FUNCTIONALIZATION

[CCHF] Steven M. Bischof¹, Mu-Jeng Cheng², Robert J. Nielsen², T. Brent Gunnoe³, William A. Goddard III², and Roy A. Periana¹
¹The Scripps Research Institute; ²California Institute of Technology and ³University of Virginia

P1-I34 - THINKING LIKE NATURE: MAKING AND BREAKING STRONG BONDS WITH SYNTHETIC METALLOPORPHYRINS

[CCHF] Thomas P. Umile¹, Wei Liu¹, Erika M. Milczek¹, Rodney D. Swartz, II¹, Dawn Wallace¹, and John T. Groves¹
¹Princeton University

P1-I35 - DIANIONIC PYRIDINE LIGANDS FOR CH AND O_2 ACTIVATION AT A SINGLE PALLADIUM CENTER

[CCHF] Dao-Yong Wang¹ and Andrei N. Vedernikov¹
¹University of Maryland

P1-I36 - IN-SITU NANOELECTROCHEMISTRY

[NECCES] Dongli Zeng¹, Feng Wang¹, Yimei Zhu¹, Jason Graetz¹, Y. Shirley Meng², Thomas McGilvray², Ming-Che Yang², and Danijel Gostovic²
¹Brookhaven National Laboratory and ²University of California, San Diego

P1-I37 - NANOMATERIALS SYNTHESIS WITH DNA-PROGRAMMED NANOPARTICLE ASSEMBLY

[NERC] Macfarlane, Robert¹, Jones, Matthew¹, and Mirkin, Chad¹

¹*Northwestern University*

P1-I38 - HIGH-PRESSURE SYNCHROTRON X-RAY SPECTROSCOPIC METHODS FOR STUDYING 3D AND 4F ELECTRONIC TRANSITIONS

[EFree] Yang Ding¹, Daniel Haskel², Jungho Kim², Michel Van Veenendaal², Paul Chow¹, Yuming Xiao¹, and Ho-kwang Mao¹

¹*Carnegie Institution of Washington*; ²*Argonne National Laboratory*

P1-I39 - FIRST VIBRATIONAL SUM FREQUENCY SPECTROSCOPIC STUDIES OF ENERGY-RELEVANT ORGANIC SPECIES ON HIGHLY ORDERED PYROLYTIC GRAPHITE

[FIRST] Jennifer L. Achtyl¹, Daniela M. Anjos², Avram M. Buchbinder¹, Yu Cai³, Matthew Neurock³, Steven H. Overbury², and Franz M. Geiger¹

¹*Northwestern University*; ²*Oak Ridge National Laboratory* and ³*University of Virginia*

Poster Session #2

Friday May 27, 2011, 10:00 – 11:30 am

P2-A01 - UPDATING THE ROAD TO A 10% EFFICIENT ORGANIC PHOTOVOLTAIC: DEVELOPING A MODEL OF EXCITON DISSOCIATION APPROPRIATE TO THE ORGANIC HETEROJUNCTION

[ANSER] Brett Savoie¹, Jon Servaites¹, Mark Ratner¹, and Tobin Marks¹
¹*Northwestern University*

P2-A02 - TOWARDS THE RECONSTRUCTION OF EXCITON DYNAMICS VIA FLUORESCENCE AND TRANSMISSION MULTIDIMENSIONAL ELECTRONIC SPECTROSCOPY

[CE] Alejandro Perdomo-Ortiz¹, Joel Yuen-Zhou¹, Sangwoo Shim¹, Geoffrey A. Lott², Andrew H. Marcus², Jacob J. Krich¹, Jacob Sanders¹, Patrick Rebenrost¹, Stephanie Valleeu¹, and Alan Aspuru-Guzik¹
¹*Harvard University and* ²*University of Oregon*

P2-A03 - ULTRAFast EXCITONIC PROPERTIES IN SOLAR ENERGY MATERIALS REVEALED BY MULTIDIMENSIONAL SPECTROSCOPY

[CE] Dylan Arias¹, Patrick Wen¹, Kathy Stone¹, Brian Walker¹, Sebastiaan Vlaming¹, Mounqi Bawendi¹, Robert Silbey¹, Vladimir Bulovic¹, Jeremy Baumberg², and Keith Nelson¹
¹*MIT and* ²*University of Cambridge*

P2-A04 - SOLAR POWERED LASERS

[CE] Carmel Rotschild¹, Phil Reusswig¹, Matt Tomes², Hiroshi Mendoza¹, Trisha Andrews¹, Tim Swager¹, Tal Carmon², and Marc Baldo¹
¹*MIT and* ²*University of Michigan, Ann Arbor*

P2-A05 - SINGLET FISSION IN ORGANIC SEMICONDUCTOR SOLAR CELLS

[CE] Priya Jadhav¹, Aseema Mohanty¹, Jason Sussman¹, Jiye Lee¹, and Marc Baldo¹
¹*Massachusetts Institute of Technology*

P2-A06 - SINGLE INFRARED-EMITTING NANOCRYSTAL FLUORESCENCE DYNAMICS USING SUPERCONDUCTING NANOWIRE DETECTORS

[CE] Raoul E. Correa¹, Eric A. Dauler¹, Gautham Nair¹, Si A. Pan¹, Danna Rosenberg¹, Andrew J. Kerman¹, Francesco Marsili¹, Xiaolong Hu¹, Karl K. Berggren¹, and Mounqi G. Bawendi¹
¹*Massachusetts Institute of Technology*

P2-A07 - DEVELOPMENT OF TRANSITION METAL OXIDE CONTACTS FOR HIGH PERFORMANCE ORGANIC PHOTOVOLTAICS

[CEEM] Andres Garcia¹, Thomas Vanderpoll², Gregory C. Welch², Sergio Paniagua-Barrantes³, Seth Marder³, Guillermo C. Bazan², David S. Ginley¹, Joseph J. Berry¹, and Dana Olson¹
¹*National Renewable Energy Laboratory;* ²*University of California, Santa Barbara, California and* ³*Georgia Institute of Technology*

P2-A08 - A MODULAR MOLECULAR FRAMEWORK FOR UTILITY IN SMALL-MOLECULE SOLUTION-PROCESSED ORGANIC PHOTOVOLTAIC DEVICES

[CEEM] Gregory Welch¹, Yangming Sun¹, Wei Lin Leong¹, Alan Heeger¹, and Gui Bazan¹
¹*UCSB*

P2-A09 - SEMI-RANDOM MULTICHROMOPHORIC RR-P3HT ANALOGUES FOR SOLAR PHOTON HARVESTING

[CEN] Beate Burkhart¹, Petr P. Khlyabich¹, and Barry C. Thompson¹
¹*University of Southern California*

P2-A10 - IMPORTANCE OF THE ORGANIC/INORGANIC INTERFACE IN HYBRID SOLAR CELLS

[CEN] Matthew J. Greaney¹, David H. Webber¹, Petr Khlyabich¹, Barry C. Thompson¹, and Richard L. Brutchey¹
¹*University of Southern California*

P2-A11 - UNDERSTANDING THE INTERPLAY OF SINGLET AND TRIPLET EXCITONS IN SENSITIZED SINGLET FISSION MATERIALS

[CEN] Sean T. Roberts¹, R. Eric McAnally¹, Cody W. Schlenker¹, Vincent Barlier¹, Joseph N. Mastron¹, Yuyuan Zhang¹, Mark E. Thompson¹, and Stephen E. Bradforth¹
¹*University of Southern California*

P2-A12 - WAVEGUIDE SPECTROSCOPIES TO CHARACTERIZE ORGANIC THIN FILM/TRANSPARENT CONDUCTING OXIDE INTERFACES
[CISSEM] Anne Simon¹, Zeynep Ozkan Araci¹, Hsiao-Chu Lin¹, Neal Armstrong¹, Scott Saavedra¹, Nate Polaske¹, Dominic McGrath¹, Ajaya Sigdel², Joseph Berry², O'Neil Smith³, Yanrong Shi³, and Seth Marder³
¹University of Arizona; ²National Renewable Energy Laboratory and ³Georgia Institute of Technology

P2-A13 - TOWARDS UNDERSTANDING STRUCTURE OF DONOR/ACCEPTOR ORGANIC INTERFACES IN ORGANIC PHOTOVOLTAIC SYSTEMS
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P2-A14 - NEW PHTHALOCYANINE MATERIALS FOR ORGANIC PHOTOVOLTAICS AND INTERFACE MODIFICATION
[CISSEM] Edgardo Hernandez¹, Mayank Mayukh¹, Clarissa Sema¹, Jessica Roberts¹, Nate Polaske¹, Dominic McGrath¹, Diogenes Placencia¹, Neal Armstrong¹, Hsiao-Chu Lin¹, Scott Saavedra¹, and Erin Ratcliff¹
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P2-A15 - ENERGETICS OF OXIDE SELECTIVE INTERLAYERS AND TRANSPARENT CONDUCTING OXIDES
[CISSEM] Jens Meyer¹, Erin Ratcliff², Ajaya Sigdel³, Xerxes Steirer², Andres Garcia³, Joseph Berry³, David Ginle³, Dana Olson³, Paul Ndione³, Edwin Widjonarko³, Neal Armstrong², and Antoine Kahn¹
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P2-A16 - INVESTIGATING TRANSPARENT CONDUCTING OXIDES, AND THE SURFACE INITIATED GROWTH AND CHARACTERIZATION OF POLYMER BRUSHES ON METAL OXIDES
[CISSEM] Judith Jenkins¹, Joseph Berry², Natalia Doubina³, Sergio Paniagua⁴, Neal Armstrong¹, Antoine Kahn⁵, Jens Meyer⁵, Seth Marder⁴, Christine Luscombe³, Ajaya Sigdel², Paul Ndione², and Erin Ratcliff¹
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P2-A17 - MICROSCOPIC THEORY OF EXCITON DISSOCIATION
[CST] Adam P. Willard¹, Loren Kaake¹, Jonathan Moussa¹, Xiaoyang Zhu¹, James R. Chelikowsky¹, and Peter J. Rossky¹
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P2-A18 - PROBING THE ORIGINS OF CONJUGATED POLYMER MORPHOLOGY: SINGLE MOLECULE STUDIES OF CHAIN INTERACTION IN A P3HT DERIVATIVE TRIBLOCK COPOLYMER
[CST] Johanna Brazard¹, Robert J. Ono¹, Takuji Adachi¹, Songsu Kang¹, Joshua C. Bolinger¹, Christopher W. Bielawski¹, Paul F. Barbara¹, and David A. Vanden Bout¹
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P2-A19 - NEW SYNTHETIC METHODOLOGIES FOR THE PREPARATION OF DONOR-ACCEPTOR BLOCK COPOLYMERS
[CST] Robert J. Ono¹, Jonathan D. Radcliffe¹, Songsu Kang¹, Young-Gi Lee¹, Zong-Quan Wu¹, Zicheng Li¹, and Christopher W. Bielawski¹
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P2-A20 - HIGH EFFICIENCY ORGANIC NANOCRYSTALLINE SOLAR CELLS BASED ON SQUARAINIUM MATERIALS
[CSTEC] Guodan Wei¹, Siyi Wang², Xin Xiao¹, C. Kyle Renshaw¹, Mark E. Thompson², and Stephen R. Forrest²
¹University of Michigan and ²University of Southern California

P2-A21 - PLASMON-ENHANCED EXCITON GENERATION IN ORGANIC PHOTOVOLTAICS
[CSTEC] Matt Sykes¹, Kwang Hyup An¹, Brian Roberts¹, Pei-Cheng Ku¹, and Max Shtein¹
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P2-A22 - TITANIA BOUND FULLERENES AS CHARGE-TRANSFER MEDIATORS IN ORGANIC PHOTOVOLTAICS
[MEEM] Jordan C. Aguirre¹, Bertrand Tremolet de Villers¹, Krastina Petrova¹, Robert Thompson¹, Benjamin J. Schwartz¹, Yves Rubin¹, and Sarah H. Tolbert¹
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P2-A23 - ENHANCING EFFICIENCIES IN DYE SENSITIZED SOLAR CELLS USING NOVEL MOLECULAR ADDITIVES
[PHaSE] Jayant Kumar¹, Akshay Kokil¹, J. Matthew Chudomel², Paul Homnick², and Paul M. Lahti²
¹UMass Lowell and ²UMass Amherst

P2-A24 - NANOCOMPOSITES FOR SOLAR CELL APPLICATIONS

[PHaSE] Emily Pentzer¹ and Todd Emrick¹¹*University of Massachusetts Amherst*

P2-A25 - OPTICAL PROBES OF EXCITON DYNAMICS AND CORRELATION WITH INTERNAL STRUCTURE IN ORGANIC/INORGANIC SEMICONDUCTING NANOPARTICLES

[PHaSE] Joelle Labastide¹, Mina Baghgar¹, Austin Cyphersmith¹, Harihara Venkatraman¹, D. Venkataraman¹, and Michael D. Barnes¹¹*UMass Amherst*

P2-A26 - THERMODYNAMIC STABILITY AND SELF-ASSEMBLY OF HETEROGENEOUS SEMICONDUCTOR QUANTUM DOTS FOR PHOTOVOLTAIC APPLICATIONS

[PHaSE] Sumeet C. Pandey¹, Jun Wang¹, T. J. Mountziaris¹, and Dimitrios Maroudas¹¹*University of Massachusetts Amherst*

P2-A27 - NANOSTRUCTURED ORGANIC PHOTOVOLTAICS FROM CONTORTED CORONENES

[RPEMSC] Alon Gorodetsky¹¹*Columbia University*

P2-A28 - RE-DEFINING PHOTOVOLTAIC EFFICIENCY THROUGH MOLECULE SCALE CONTROL

[RPEMSC] James Yardley¹, Louis Brus¹, and Tony Heinz¹¹*Columbia University*

P2-A29 - MEASUREMENTS OF EXCITON DYNAMICS AND SYMMETRIES IN NANOMATERIALS

[RPEMSC] Jonathan Schuller¹¹*Columbia University*

P2-A30 - NEW CONDUCTING MATERIALS FOR PHOTOVOLTAICS

[RPEMSC] Marshall Cox¹¹*Columbia University*

P2-B01 - SPECTRAL PHONON TRANSPORT PROPERTIES OF THERMOELECTRIC MATERIALS FROM FIRST-PRINCIPLES CALCULATIONS

[S3TEC] Keivan Esfarjani¹, Zhiting Tian¹, Takuma Shiga², Tengfei Luo¹, Junichiro Shiomi², Jivtresh Garg¹, Olivier Delaire³, and Gang Chen¹¹MIT; ²U Tokyo and ³ORNL

P2-B02 - PLANAR DYE-SENSITIZED PHOTOVOLTAICS: CAVITY MODE ENHANCEMENT TO 1.0 V

[ANSER] Alex Martinson¹, Noel Giebink¹, Gary Wiederrecht¹, Daniel Rosenmann¹, Michael Pellin^{1,2}, and Michael Wasielewski^{1,2}¹Argonne National Lab and ²Northwestern University

P2-B03 - PLASMONIC NANOARCHITECTURES IN PHOTOVOLTAIC AND PHOTOELECTROCHEMICAL DEVICES: ENHANCING LIGHT ABSORPTION THROUGH LOCALIZED SURFACE PLASMON RESONANCE

[ANSER] Erica DeMarco¹, Patrick Shively¹, Michael DeVries¹, Hanning Chen¹, George Schatz¹, Michael Pellin², and Joseph Hupp¹¹Northwestern University and ²Argonne National Laboratory

P2-B04 - SYNTHESIS AND CHARACTERIZATION OF SILICON QUANTUM DOTS AS NOVEL MATERIALS FOR GENERATION III SOLAR CELLS

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P2-B05 - SIZE- AND COMPOSITION-DEPENDENT CARRIER MULTIPLICATION STUDIES ON PbSe, PbS AND PbSSE QDs

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P2-B06 - CHARGE TRANSPORT STUDIES IN PbSE AND PbS NANOCRYSTAL FILMS
 [CASP] Matt Law¹, Yao Liu¹, Markelle Gibbs¹, Jason Tolentino¹, and Rachele Ihly¹
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P2-B07 - GERMANIUM AND SILICON NANOCRYSTAL THIN-FILM FIELD EFFECT TRANSISTORS PROCESSED FROM SOLUTIONS
 [CASP] Zachary Holman¹, Chin-Yi Liu¹, and Uwe Kortshagen¹
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P2-B08 - NANOPATTERNING FOR ADVANCED NANOWIRE PHOTOVOLTAIC DEVICES
 [CEN] Anuj R. Madaria¹, Maoqing Yao¹, ChunYung Chi¹, Ruijuan Li¹, Chenxi Lin¹, Ningfeng Hunag¹, P. Daniel Dapkus¹, Michelle Povinelli¹, and Chongwu Zhou¹
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P2-B09 - UNDERSTANDING AND EXPLOITING STOICHIOMETRY ASYMMETRY TO CREATE ENHANCED P-TYPE OXIDE SPINELS
 [CID] Andriy Zakutayev¹, Tula Paudel¹, John Perkins¹, Nicola Perry², Thomas Mason², Joanna Bettinger³, Yezhou Shi³, Michael Toney³, Stephan Lany¹, David Ginley¹, and Alex Zunger¹
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P2-B10 - CONFORMAL COATING OF SIZE-CONTROLLED LEAD SULFIDE QUANTUM DOTS BY ATOMIC LAYER DEPOSITION AND IRRADIATION
 [CNEEC] Hee Joon Jung¹, Neil P. Dasgupta¹, Orlando Trejo¹, Matthew T. McDowell¹, Aaron Hryciw¹, Robert Sinclair¹, and Fritz B. Prinz¹
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P2-B11 - QUANTUM DOTS: FROM INTERFACES TO INTERMEDIATE BAND ABSORPTION
 [CSTEC] Simon Huang¹, Divine P. Kumah¹, Jia-Hung Wu¹, Naji S. Hussein¹, Andrey V. Semichaevsky², Harley T. Johnson², Roy Clarke², and Rachel S. Goldman²
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P2-B12 - TRANSFORMATION OPTICS FOR PHOTOVOLTAICS
 [LMI] Christopher Gladden¹, Majid Gharghi¹, Ze'ev Abrams¹, and Avi Niv¹
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P2-B13 - NOVEL LIGHT TRAPPING SCHEMES FOR SOLAR CELL APPLICATIONS
 [LMI] Emily Kosten¹, Emily Warren¹, and Harry Atwater¹
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P2-B14 - LIGHT-MATTER INTERACTIONS IN PERIODIC 3D PHOTONIC STRUCTURES
 [LMI] Hailong Ning¹, Augstin Mihi¹, Erik Nelson¹, John Rogers¹, and Paul Braun¹
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P2-B15 - SI NANOPHOTONICS: EXTREME LIGHT LOCALIZATION FOR THERMAL AND SOLAR ENERGY CONVERSION
 [LMI] Jeffrey T Hill¹, Alexander G Krause¹, Amir Safavi-Naeini¹, and Oskar Painter¹
¹*California Institute of Technology*

P2-B16 - MECHANISMS OF NANOSTRUCTURE FORMATION AND INSTABILITY IN Bi₂Te₃
 [S3TEC] Chuang Deng¹, Samuel Humphry-Baker¹, Weishu Liu¹, and Christopher Schuh¹
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P2-B17 - SOLAR THERMOELECTRIC POWER CONVERSION
 [S3TEC] Daniel Kraemer¹, Kenneth McEnaney¹, Bed Poudel², Hsien-Ping Feng¹, J. Christopher Caylor², Bo Yu³, Xiao Yan³, Yi Ma³, Xiaowei Wang³, Dezhi Wang³, Andrew Muto¹, Matteo Chiesa⁴, Zhifeng Ren³, and Gang Chen¹
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P2-B18 - DESIGN AND GLOBAL OPTIMIZATION OF HIGH-PERFORMANCE SOLAR THERMOPHOTOVOLTAIC SYSTEMS
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P2-B19 - 2D METALLIC PHOTONIC CRYSTALS AS SELECTIVE EMITTERS FOR SOLAR THERMOPHOTOVOLTAIC ENERGY CONVERSION

[S3TEC] Yi Xiang Yeng¹, Michael Ghebrebrhan¹, Peter Berme¹, Walker Chan¹, John Joannopoulos¹, Marin Soljacic¹, and Ivan Celanovic¹
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P2-B20 - NANO STRUCTURED THERMOELECTRIC MATERIALS (Bi,Sb)₂(Te,Se,S)₃

[S3TEC] Weishu Liu¹, Qian Zhang¹, Qing Jie¹, Yucheng Lan¹, Kevin Lucas¹, Cyril Opeil¹, Zhifeng Ren¹, Shuo Chen², Chris Carlton², Yang Shao Horn², Mildred Dresselhaus², and Gang Chen²
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P2-B21 - TOWARDS LIGHT HARVESTING POLYMERS PREPARED BY LIVING POLYMERIZATION FEATURING PENDANT IONIC TRANSITION METAL COMPLEXES (ITMCs)

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P2-B22 - ENERGY TRANSFER IN RUTHENIUM AND OSMIUM FUNCTIONALIZED COILED-COIL PEPTIDES

[UNC] Stephanie Bettis¹, Dale Wilger¹, Christopher Materese¹, Maria Minakova¹, Garegin Papoian¹, John M. Papanikolas¹, and Marcey L. Waters¹
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P2-C01 - GROUP 6 DINITROGEN COMPLEXES SUPPORTED BY DIPHOSPHINE LIGANDS CONTAINING PROTON RELAYS: TOWARD THE REDUCTION OF DINITROGEN TO AMMONIA

[CME] Michael T. Mock¹, Amy Groves¹, Charles J. Weiss¹, Shentan Chen¹, Roger Rousseau¹, Daniel L. DuBois¹, and R. Morris Bullock¹
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P2-C02 - MULTI-FUNCTIONAL, BIOMIMETIC POROUS CHALCOGENIDE FRAMEWORKS: ELECTRO- AND PHOTOCATALYSTS FOR SOLAR FUELS

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P2-C03 - CATALYTIC TRANSFORMATION OF BIOMASS POLYSACCHARIDES

[C3Bio] Nate Mosier¹, Eurick Kim¹, Joshua Abbott², Craig Barnes², and Mahdi Abu-Omar¹
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P2-C04 - METABOLIC FLUX ANALYSIS OF OIL PRODUCTION IN DEVELOPING SEEDS OF CAMELINA

[CABS] Lisa Carey¹
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P2-C06 - BIOMIMETIC CATALYSTS FOR HYDROGEN EVOLUTION

[ANSER] Thomas Rauchfuss¹, Wenguang Wang¹, Raja Angamuthu¹, Amanda Samuel², and Michael Wasielewski²
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P2-C07 - STRUCTURAL CHARACTERIZATION OF WATER OXIDATION CATALYSTS COVALENTLY BOUND TO TiO₂ SURFACES

[ANSER] Julio L. Palma¹, Laura J. Allen¹, Rebecca L. Milot¹, Karin Brumback¹, Gary W. Brudvig¹, Charles A. Schmuttenmaer¹, Robert H. Crabtree¹, and Victor S. Batista¹
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P2-C08 - METAL CATALYZED OXIDATION OF BIOREFINERY LIGNIN

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P2-C09 - TRANSITION METAL BASED CATALYST DEVELOPMENT AND CATALYTIC DECONSTRUCTION OF NATIVE AND ENGINEERED BIOMASS

[C3Bio] Hui Wei¹, Haibing Yang², Joe Cox², Bryon S. Donohoe¹, Peter N. Ciesielski¹, Michael E. Himmel¹, Angus Murphy², Wendy Peer², Maureen McCann², Melvin P. Tucker¹, and Mahdi M. Abu-Omar²

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P2-C10 - BIOCHEMICAL MECHANISMS OF CELLULOSE BIOSYNTHESIS

[C3Bio] Anna T. Olek¹, Lake Paul¹, Catherine Rayon¹, Subhangi Ghosh¹, and Nicholas C. Carpita¹

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P2-C11 - CATALYTIC TRANSFORMATIONS OF LIGNIN STUDIED BY USING A NOVEL MASS SPECTROMETRIC APPROACH

[C3Bio] Trenton H. Parsell¹, Laura J. Haupt¹, Lucas M. Amundson¹, Benjamin C. Owen¹, Christopher L. Marcum¹, Tiffany M. Jarrell¹, Christopher J. Pulliam¹, Padmaja Narra¹, Mohammad Sabir Aqueel¹, Nelson R. Vinueza¹, Joseph J. Bozell¹, Hilikka I. Kenttamaa¹, and Mahdi M. Abu-Omar¹

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P2-C12 - DIRECT PRODUCTION OF MOLECULES IN THE FUEL RANGE BY SELECTIVE TAILORING OF BIOMASS FAST-PYROLYSIS

[C3Bio] Piotr Gawecki¹, Andrew D. Smeltz¹, Matthew R. Hurt¹, David J. Borton II¹, Nelson R. Vinueza¹, Nicholas J. Nugent¹, Rakesh Agrawal¹, W. Nicholas Delgass¹, Hilikka I. Kenttamaa¹, William E. Anderson¹, and Fabio H. Ribeiro¹

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P2-C13 - CAPTURING GENETIC DIVERSITY FOR ADVANCED BIOFUELS IN CAMELINA

[CABS] Jillian Collins-Silva¹, Rebecca Cahoon¹, and Edgar Cahoon¹

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P2-C14 - ENHANCING PHOTOSYNTHETIC EFFICIENCY OF CHLAMYDOMONAS REINHARDTII

[CABS] Shayani Pieris¹

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P2-C15 - ANALYZING THE INDUCTION OF OIL PRODUCTION IN CHLAMYDOMONAS

[CABS] Rahul Deshpande¹ and Yair Shachar-Hill¹

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P2-C16 - PRODUCTION OF HYDROCARBONS IN OILSEED AND ALGAE

[CABS] Yasuhiro Higashi¹, Xiaohong Feng¹, and Toni M Kutchan¹

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P2-C17 - ARTIFICIAL HYDROGENASES: PROPERTIES OF [Ni-RU(ARENE)] COMPLEXES IN A PEPTIDE FRAMEWORK

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P2-C18 - PREPARATION OF HIGHLY POROUS TRANSPARENT ANTIMONY-DOPED TIN OXIDE (ATO) ELECTRODES FOR SOLAR FUEL PRODUCTION

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P2-C19 - PROTON-COUPLED ELECTRON TRANSFER IN ARTIFICIAL PHOTOSYNTHETIC MODELS FOR LIGHT-DRIVEN WATER OXIDATION

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P2-C20 - DESIGN AND ASSEMBLY OF AN ARTIFICIAL OXYGEN-EVOLVING COMPLEX IN DNA NANOSTRUCTURES

[BISfuel] Kimberly Rendek¹, Chad Simmons¹, Justin Flory¹, Sudipta Biswas¹, Xixi Wei¹, Chenxiang Lin¹, Sandip Shinde¹, Ingo Grotjohann¹, Raimund Fromme¹, Giovanna Ghirlanda¹, Hao Yan¹, Yan Liu¹, and Petra Fromme¹

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P2-C21 - MOLTEN METAL ANODES FOR DIRECT CARBON FUEL CELLS
[CCEI] Abhimanyu Jayakumar¹, John Vohs¹, and Raymond Gorte¹
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P2-C22 - CATALYSIS FOR BIOMASS REFORMING
[CCEI] Michael Saliccioli¹, Weiting Yu¹, Mark Barteau¹, Jingguang Chen¹, and Dion Vlachos¹
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P2-C23 - CATALYTIC STUDIES OF REFORMING OF OXYGENATES
[CCEI] Sarah Tupy¹, Tushar Vispute², George Huber², Jingguang Chen¹, and Dionisios Vlachos¹
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P2-C24 - CORRELATING SURFACE SCIENCE WITH FIRST-PRINCIPLES STUDIES OF BIOMASS DERIVATIVES
[CCEI] Weiting Yu¹, Mark Barteau¹, and Jingguang Chen¹
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P2-C25 - RENEWABLE GASOLINE RANGE AROMATICS FROM CATALYTIC FAST PYROLYSIS OF WOODY BIOMASS
[CCEI] Yu-Ting Cheng¹ and George W. Huber¹
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P2-C26 - SOOT FORMATION IN FUEL COMBUSTION - THE ROLE OF AROMATIC DIRADICALS
[CEFRC] Enoch Dames¹ and Hai Wang¹
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P2-C27 - COMBUSTION KINETICS STUDY OF T-BUTANOL AND ITS PRINCIPAL INTERMEDIATES, I-BUTENE, ACETONE, AND METHANE
[CEFRC] Joseph Lefkowitz¹, Joshua Heyne¹, Sang Hee Won¹, Stephen Dooley¹, Hwanho Kim¹, Francis Haas¹, Saeed Jahangirian¹, Frederick Dryer¹, and Yiguang Ju¹
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P2-C28 - TURBULENT COMBUSTION OF FUTURE TRANSPORTATION FUELS
[CEFRC] Stephen Pope¹, Jacqueline Chen², Haifeng Wang¹, Chun Sang Yoo², and Gaurav Bansal²
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P2-C29 - BIOCHEMICAL CHARACTERIZATION OF GLUCONACETOBACTER HANSENI CELLULOSE SYNTHESIS
[CLSF] Prashanti R. Iyer¹, Jeffrey M. Catchmark¹, Nicole R. Brown¹, and Ming Tien¹
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P2-C30 - DOES XYLOGLUCAN REALLY TETHER CELLULOSE IN PRIMARY CELL WALLS? EVIDENCE FOR A MINOR, STRUCTURAL FORM OF XYLOGLUCAN
[CLSF] Yong Bum Park¹ and Daniel J. Cosgrove¹
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P2-C31 - SIZE EFFECT OF CELLULOSE MICROFIBRIL AND ITS INTERACTION WITH HEMICELLULOSE
[CLSF] Zhen Zhao¹, Linghao Zhong¹, and James D. Kubicki¹
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P2-C32 - HEMICELLULOSE AND PECTIN INTERACTIONS WITH CELLULOSE
[CLSF] Joshua D. Kittle¹, Xiaosong Du¹, Xiao Zhang¹, Chen Qian¹, Maeve Budi¹, Alan R. Esker¹, Feng Jiang¹, Maren Roman¹, Jing Gu², and Jeffrey M. Catchmark²
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P2-C33 - AB-INITIO STRUCTURE PREDICTION OF A CELLULOSE SYNTHASE PROTEIN
[CLSF] Latsavongsakda Sethaphong¹, Abhishek Singh¹, and Yaroslava G. Yingling¹
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P2-C34 - THE USE OF INTERDIGITATED ARRAY (IDA) ELECTRODES TO INVESTIGATE ELECTROCATALYTIC REACTIONS
[CME] Fei Liu, Yongxin Li¹, John A. Roberts¹, Dan Dubois², Morris Bullock², and Bruce A. Parkinson¹
¹*University of Wyoming* and ²*Pacific Northwest National Laboratory*

P2-C35 - NMR STUDIES ON THE ROLE OF PROTON RELAYS IN NICKEL CATALYSTS FOR OXIDATION OR PRODUCTION OF HYDROGEN

[CME] O'Hagan, Molly¹, Shaw, Wendy¹, Yang, Jenny Y.¹, Appel, Aaron M.¹, Rakowski DuBois, M.¹, DuBois, Daniel L.¹, and Bullock, R. Morris¹

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P2-C36 - MOLECULAR TRANSITION METAL COMPLEXES FOR DIOXYGEN ACTIVATION AND REDUCTION

[CME] Tristan Tronic¹, Colin Carver¹, Johanna Blacquiere¹, Benjamin Matson¹, Werner Kaminsky¹, Tianbiao Lui², Mary Rakowski-DuBois², and James Mayer¹

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P2-C37 - PLASMONS AND RUST FOR SOLAR ENERGY CONVERSION

[CNEEC] Isabell Thomann¹, Blaise Pinaud¹, Zhebo Chen¹, Bruce M. Clemens¹, Thomas F. Jaramillo¹, and Mark. L. Brongersma¹

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P2-C38 - A STUDY OF OER ON TRANSITION METAL OXIDES

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P2-C39 - HYDROGEN PRODUCTION ON NANOSTRUCTURED MOS₂ BY ELECTROCATALYSIS AND SOLAR PHOTOELECTROCHEMISTRY

[CNEEC] Zhebo Chen¹, Hee Joon Jung¹, Robert Sinclair¹, and Thomas F. Jaramillo¹

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P2-C40 - PROTON-COUPLED ELECTRON TRANSFER AT FLUID-SOLID INTERFACES: MECHANISTIC PATHWAYS FOR ELECTROCATALYTIC AND PHOTOCATALYTIC REACTIONS

[FIRST] Daniela M. Anjos¹, Glen Alliger¹, Alexander I. Kolesnikov¹, Yu Cai², Matthew Neurock², Zili Wu¹, John McDonough³, Yury Gogotsi³, Gilbert M. Brown¹, and Steven H. Overbury¹

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P2-C41 - THE DECOMPOSITION OF FORMIC ACID AND BUTYL FORMATE FOR THE CONVERSION OF BIOMASS TO BIOFUELS

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P2-C42 - AN NMR STUDY OF THE MECHANISM OF THE DEHYDRATION OF D-FRUCTOSE USING ¹³C LABELING

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P2-C43 - HYDROGEN PRODUCTION FROM GLYCEROL: REACTION MECHANISM ANALYSIS VIA KINETICS AND OPERANDO SPECTROSCOPY

[IACT] Paul Dietrich¹, Rodrigo Lobo², Neng Guo², Tianpin Wu², Bradley Fingland², Fabio Ribeiro¹, Nicholas Delgass¹, Jeffrey Miller², and James Dumesic³

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P2-C44 - CATALYSTS PREPARED BY ATOMIC LAYER DEPOSITION FOR CONVERSION OF BIOMASS TO CHEMICALS

[IACT] Yomaira J. Pagan-Torres¹, Jean Marcel R. Gallo¹, Dong Wang¹, Hien N. Pham¹, Joseph A. Libera¹, Christopher L. Marshall², Jeffrey W. Elam², Abhaya K. Datye³, and James A. Dumesic¹

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P2-C45 - LIGHT-HARVESTING PIGMENT DISTRIBUTION IN ALGAE AND CYANOBACTERIA DETERMINED BY HYPERSPECTRAL CONFOCAL FLUORESCENCE MICROSCOPY

[PARC] Aaron M. Collins¹, Michelle Liberton², Sangeeta Negi³, Howland D.T. Jones¹, Omar F. Garcia¹, Michael B. Sinclair¹, Himadri B. Pakrasi², Richard T. Sayre³, and Jerilyn A. Timlin¹

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P2-C46 - PARC COMMUNICATION STRATEGIES: STREAMING, ONLINE, AND VIRTUAL

[PARC] Elizabeth Dorland¹

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P2-C47 - WINNING THE FUTURE: ENERGY EDUCATION FOR THE NEXT GENERATION

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P2-C48 - ENERGY TRANSFER IN PHOTOSYNTHETIC LIGHT-HARVESTING COMPLEXES FOR BIO-HYBRID SOLAR UTILIZATION

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P2-C49 - CHROMOPHORE-CATALYST SELF-ASSEMBLED BILAYERS FOR LIGHT DRIVEN CATALYSIS

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P2-C50 - THE DEVELOPMENT OF CATALYSTS FOR ELECTROCHEMICAL AND PHOTOCHEMICAL CO₂ REDUCTION

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P2-C51 - CATALYTIC MECHANISM FOR SINGLE-SITE WATER OXIDATION PROCESS: A THEORETICAL STUDY

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P2-D01 - HIGH POWER NANOSTRUCTURED ANODES, CATHODES AND THERMAL PROTECTANT FOR LI-ION BATTERIES: FABRICATION BY NOVEL BIO-INSPIRED, KINETICALLY CONTROLLED, LOW-TEMPERATURE CATALYSIS

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P2-D02 - CHARACTERIZATION OF ENGINEERED GRAPHENES FOR HIGH CAPACITY ELECTRODES

[CEES] Cary M. Hayner¹ and Sudeshna Chattopadhyay¹

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P2-D03 - THEORETICAL STUDIES OF SURFACES, INTERFACES AND NOVEL MATERIALS IN ELECTRICAL ENERGY STORAGE SYSTEMS

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P2-D04 - FUNDAMENTAL STUDIES OF SILICON LITHIATION FOR BATTERY ANODES

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P2-D05 - MICRO/NANO-PHASE CARBON ANODES FOR LITHIUM-ION BATTERIES

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P2-D06 - DESIGN OF ELECTROLYTES AND MEMBRANES FOR DEHYDROGENATION FUEL CELL SYSTEMS

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P2-D07 - HOMOGENEOUS REDOX CATALYSIS OF DEHYDROGENATION REACTIONS

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P2-D08 - APPLICATIONS OF HIGH POTENTIAL QUINONES AND Pincer COMPLEXES FOR VIRTUAL HYDROGEN STORAGE

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P2-D09 - USE OF LIQUID FUEL CELL FOR EVALUATION OF SYSTEM COMPONENTS

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P2-D10 - INVESTIGATING THE HYSTERESIS OF THE FEF3/LI NANOSCALE ELECTRODE REACTION

[CNEEC] John Vajo¹, Jun Liu¹, Wen Li¹, John Wang¹, and Ping liu¹
¹HRL

P2-D11 - KINETICS OF Li⁺ DIFFUSION IN OLIVINE PHOSPHATES

[CST] Gopi Krishna Phani Dathar¹, Daniel Sheppard¹, Nicholas Delone¹, Jing Wu¹, Keith J. Stevenson¹, and Graeme Henkelman¹
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P2-D12 - PdCo@Pd/C CORE-SHELL NANOPARTICLES AND PT-DECORATED PdCo@Pd/C FOR OXYGEN REDUCTION

[EMC2] Deli Wang¹, Huolin Xin¹, David Muller¹, Francis DiSalvo¹, and Hector Abruna¹
¹Cornell University

P2-D13 - FUEL CELL ELECTROCATALYST DEVELOPMENT AND CHARACTERIZATION

[EMC2] Eric Rus¹, Hongsen Wang¹, Anna Legard¹, Michele Tague¹, Bruce van Dover¹, and Hector Abruna¹
¹Cornell University

P2-D14 - SOLVENT PROCESSABLE TETRAALKYLAMMONIUM-FUNCTIONALIZED POLYETHYLENE FOR USE AS AN ALKALINE ANION EXCHANGE MEMBRANE

[EMC2] Henry Kostalik, IV¹, Timothy Clark¹, Nicholas Robertson¹, and Geoffrey Coates¹
¹Cornell University

P2-D15 - BATTERY MATERIALS AND ARCHITECTURES

[EMC2] Michael Lowe¹, Zichao Yang¹, Jayaprakash Navaneethakrishnan¹, Jennifer Nugent¹, Jie Gao¹, Hector Abruna¹, Lynden Archer¹, and Stephen Burkhardt¹
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P2-D16 - HIGH THROUGHPUT METHODS FOR ELECTROCATALYST DISCOVERY

[EMC2] Eva Smith¹, Michele Tague¹, John Gregoire¹, Darren Dale¹, Anna Legard¹, Bruce van Dover¹, Frank DiSalvo¹, Richard Hennig¹, and Hector Abruna¹
¹Cornell University

P2-D17 - CARBON ONIONS FOR IMPROVED ELECTRICAL ENERGY STORAGE

[FIRST] J. McDonough¹, P. Ganesh², P. Fulvio², V. Mochalin¹, V. Presser¹, S. Dai², P.R.C. Kent², and Y. Gogotsi¹
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P2-D18 - NANOSTRUCTURED MnO_x FOR SUPERCAPACITORS

[HeteroFoam] Min-Kyu Song¹, Shuang Cheng¹, Feng Liu², and Meilin Liu¹
¹Georgia Institute of Technology and ²University of Utah

P2-D19 - THE ROLE OF MATERIAL STRUCTURE AND COMPOSITION IN NANOSTRUCTURED TRANSITION METAL OXIDE ELECTROCHEMICAL CAPACITORS

[MEEM] Veronica Augustyn¹, Zheng Chen¹, Jong Woung Kim¹, Thomas Quicke¹, Sarah Tolbert¹, Yunfeng Lu¹, and Bruce Dunn¹

¹University of California, Los Angeles

P2-D20 - CONTINUUM-LEVEL SIMULATION OF CONVERSION REACTIONS: FROM A LI-CU-TIS₂ SYSTEM TO A LI-FE-F SYSTEM

[NECCES] Hui-Chia Yu¹, Tapiwa Mushove¹, Jishnu Bhattacharya¹, Chen Ling¹, Anton Van der Ven¹, Katsuyo Thornton¹, Glenn G. Amatucci², and Nathalie Pereira²

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P2-D21 - CHARACTERIZATION OF LI-ION BATTERY MATERIALS AND PROCESSES USING MAGNETIC STUDIES

[NECCES] Natasha A. Chernova¹, Fredrick Omenya¹, Ruigang Zhang¹, M. Stanley Whittingham¹, Feng Wang², Jason Graetz², Glenn Amatucci³, Nathalie Pereira³, Thomas McGilvray⁴, and Y. Shirley Meng⁴

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P2-D22 - AMORPHOUS SnCO-CARBON ANODE: UNDERSTANDING THE REACTION MECHANISM

[NECCES] Shailesh Upreti¹, Ruigang Zhang¹, Natasha Chernova¹, Feng Wang², Lin-Shu Du³, Jaroslaw Syzdek⁴, ⁵Faisal Alamgir, Christian Burger³, Jun Wang², Cole Petersburg⁵, Elaine Lin⁵, Jason Graetz², Robert Kostecki⁴, Clare P. Grey³, and M.S. Whittingham¹

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P2-D23 - USING SYNCHROTRON BASED X-RAY DIFFRACTION AND ABSORPTION TO UNDERSTAND LiFePO₄ AND FeF₂ AS CATHODE MATERIALS FOR LITHIUM BATTERIES

[NECCES] Xiao-Jian Wang¹, Kyung-Wan Nam¹, Xiao-Qing Yang¹, Nathalie Pereira², and Glenn G. Amatucci²

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P2-D24 - FUNDAMENTAL INSIGHTS INTO PERFORMANCE LIMITATIONS OF OXOANION CATHODE MATERIALS

[NECCES] Yuri Janssen¹, Shouhang Bo¹, Lin-Shu Du¹, Derek Middlemiss¹, Peter Khalifah¹, and Clare P. Grey¹

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P2-D25 - NANO-ELECTRODE NETWORKS: CHEMISTRY AND MECHANICS AT NANOSTRUCTURED INTERFACES

[NEES] Hongwei Liao¹, Alexandra H. Brozena¹, Khim Karki¹, Yin Zhang¹, John Cumings¹, and YuHuang Wang¹

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P2-D26 - NANOSCALE ENGINEERING FOR SI-BASED HIGH PERFORMANCE LI-ION BATTERIES

[NEES] Jeong-Hyun Cho¹, Xianglong Li¹, Xiao Hua Liu², Jian Yu Huang², and S. Thomas Picraux¹

¹Los Alamos National Laboratory and ²Sandia National Laboratories

P2-D27 - HETEROGENEOUS NANOTUBES AND NANOWIRES: FABRICATION, MECHANISM, AND ELECTROCHEMICAL CHARACTERIZATION FOR SUPERCAPACITORS

[NEES] Jonathon Duay¹, Stefanie A Sherrill¹, Sung Kyoung Kim¹, and Sang Bok Lee¹

¹University of Maryland

P2-D28 - NANOARCHITECTURED 3D ELECTRODES FOR LI-ION MICROBATTERIES

[NEES] Ekaterina Pomerantseva¹, Konstantinos Gerasopoulos¹, Xinyi Chen¹, Gary Rubloff¹, James Culver¹, Chunsheng Wang¹, and Reza Ghodssi¹

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P2-D29 - ELECTRON TRANSPORT IN CHARGE-SEPARATED NANOPARTICLE FILMS DRIVEN BY EXTERNAL FIELDS: A NON-EQUILIBRIUM APPROACH

[NERC] Anthony Costa¹, Jason Green¹, and Igal Szleifer¹

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P2-D30 - ACCESSING TETRATHIAFULVALENE RADICAL DIMERS AND NON-EQUILIBRIUM STATES IN MECHANICALLY INTERLOCKED MOLECULES

[NERC] Gokhan Barin¹, Ali Coskun¹, Jason M. Spruell¹, and J. Fraser Stoddart¹
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P2-E01 - DEVELOPMENT OF SOLID OXIDE CELLS FOR ENERGY CONVERSION AND STORAGE

[HeteroFoaM] Chenghao Yang¹, Chao Jin¹, and Fanglin (Frank) Chen¹
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P2-E02 - APPLICATION OF PULSED ELECTRIC CURRENT SINTERING ON NEW THERMOELECTRIC OXIDES

[RMSSEC] Chang Liu¹ and Donald T. Morelli¹
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P2-E03 - WAVELENGTH DOWNCONVERSION MATERIALS FOR SOLID-STATE LIGHTING

[SSLS] James E. Martin¹, Lauren Rohwer¹, and May Nyman¹
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P2-E04 - NANOWIRE AND NANOPARTICLE COMPOSITES FOR EFFICIENT THERMOELECTRICS

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P2-E05 - COMBUSTION AT HIGH PRESSURE

[CEFRC] Jeffrey S. Santner¹, Michael P. Burke¹, Frederick L. Dryer¹, and Yiguang Ju¹, Swetaprovo Chaudhuri¹, Peng Zhang¹, Fujia Wu¹, and Chung K. Law¹, David F. Davidson² and Ronald K. Hanson², Bryan W. Weber³, Mruthunjaya Uddi³, Apurba Das³, and Chih-Jen Sung³, Fokion N. Egolfopoulos⁴, and Stephen J. Klippenstein⁵
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P2-E06 - MATERIALS AND SYNTHESIS OF KNOWN SUPERCONDUCTORS

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P2-E07 - SUPERCONDUCTORS AS AN ENERGY CARRIER

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P2-E08 - PROBING THE HIGH TC-SUPERCONDUCTING ORDER PARAMETER WITH PHOTOEMISSION AND POLARIZED X-RAYS.

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P2-E09 - THE BEHAVIOR OF IRON-BASED SUPERCONDUCTORS

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P2-E10 - UNDERSTANDING PAST FAILURE OF EARTH ABUNDANT MATERIALS SUCH AS FES₂ TO BE GOOD SOLAR ABSORBERS - PROBLEMS AND CURE

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P2-E11 - NANOSTRUCTURED CERIA-BASED ANODES FOR LOW TEMPERATURE SOLID OXIDE FUEL CELLS

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P2-E12 - NEW ANODE MATERIALS WITH ENHANCED TOLERANCE TO SULFUR AND COKING

[HeteroFoam] Lei Yang¹, Yongman Choi², and Meilin Liu¹

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P2-E13 - NOVEL PROTON CONDUCTORS WITH ENHANCED CHEMICAL STABILITY

[HeteroFoam] Siwei Wang¹, Fei Zhao¹, Fanglin Chen¹, and Kyle Brinkman²

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P2-E14 - SINGLE MOLECULE PHOTODRIVEN MACHINES FOR TRANSDUCING PHOTON ENERGY INTO MECHANICAL ENERGY

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P2-E15 - NON-EQUILIBRIUM CHIRAL ASSEMBLY

[NERC] Thomas Hermans¹ and Bartosz Grzybowski¹

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P2-E16 - UNUSUAL THERMOELECTRIC PROPERTIES OF VANADIUM BASED ORGANIC COMPOUNDS

[RMSSEC] A. M. Chamoire¹, C.M. Jaworski¹, C.-Y.Kao¹, A.J.Epstein¹, and J.P.Heremans¹

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P2-E17 - THERMOELECTRIC PROPERTIES OF SKUTTERUDITE-BASED NANOCOMPOSITES

[RMSSEC] Chen Zhou¹, Jeffery Sakamoto¹, and Donald Morelli¹

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P2-E18 - BORON SEGREGATION AT GRAIN BOUNDARIES IN CoSi ALLOYS

[RMSSEC] Edgar Lara-Curzio¹, Melanie J. Kirkham¹, Harry M. Meyer III¹, Shengyon Qin¹, An-Ping Li¹, Hui Sun², and Don Morelli²

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P2-E19 - CONTROLLING THE LIGHT AND HEAVY HOLE BANDS OF P-TYPE PbTe WITH K AND Na CO-DOPING

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P2-E20 - NANOSTRUCTURED MATERIALS BASED ON PbTe/Bi₂Te₃ FOR THERMOELECTRIC APPLICATIONS

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P2-E21 - IMPACT OF CRYSTALLINE DEFECTS ON THE EFFICIENCY OF BLUE LIGHT EMITTING DIODES FOR SOLID-STATE LIGHTING

[SSLS] Tania A. Henry¹, Andrew M. Armstrong¹, Mary H. Crawford¹, and Dan D. Koleske¹

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P2-E22 - LASERS FOR SOLID-STATE LIGHTING

[SSLS] A. Neumann¹, J.J. Wierer², W. Davis³, Y. Ohno³, S.R.J. Brueck¹, and J.Y. Tsao²

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P2-E24 - LASING FROM OPTICALLY PUMPED GALLIUM NITRIDE NANORODS

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P2-F01 - STRUCTURE AND DYNAMICS OF CO₂-BEARING FLUIDS AT NANOSCALE INTERFACES

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P2-F02 - CO₂ FROM BENCHTOP TO OUTCROP: MULTIPHASE REACTIVE TRANSPORT AND A NATURAL ANALOGUE FOR LEAKAGE

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P2-F03 - MULTIPHYSICS MODELS OF CAPROCK FRACTURING DURING CO₂ INJECTION

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P2-F04 - ALTERATIONS IN MECHANICAL PROPERTIES OF ROCKS DUE TO CO₂ INJECTION -- IMPLICATIONS FOR FIELD SCALE MONITORING OF SEQUESTRATION PROCESSES

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P2-F05 - INSIGHTS INTO MECHANISMS FOR CO₂ SEEPAGE BASED ON FIELD OBSERVATIONS AT CRYSTAL GEYSER NATURAL ANALOG

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P2-F06 - TAKING FUNDAMENTALLY NEW MATERIALS FOR CO₂ CAPTURE TOWARD APPLICATION: AN EFRC/NETL COLLABORATION

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P2-F07 - MODEL DEVELOPMENT FOR RAPID SCREENING OF ADSORBENT MATERIALS USING IDEAL ADSORBED SOLUTION THEORY AND MOLECULAR SIMULATION

[CGS] Joseph Swisher¹ and Berend Smit^{1,2}

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P2-F08 - FIRST-PRINCIPLES CALCULATIONS OF THE INTERACTION BETWEEN CO₂ AND METAL-ORGANIC FRAMEWORKS

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P2-F09 - METAL-ORGANIC FRAMEWORKS AS MATERIALS FOR CARBON DIOXIDE CAPTURE

[CGS] Eric Bloch¹, Zoey Herm¹, Kenji Sumida¹, Thomas McDonald¹, Jarad Mason¹, Hye Jin Choi¹, Joseph Swisher¹, Berend Smit¹, Rajamani Krishna², and Jeffrey R. Long¹

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P2-F10 - UNDERSTANDING GAS ADSORPTION IN ZEOLITIC IMIDAZOLATE FRAMEWORKS: MOLECULAR MODELING

[MEEM] Keith Ray¹, David Olmsted¹, Ning He², Jessica Burton¹, Yao Houndonougbo³, Brian Laird², and Mark Asta¹

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P2-F11 - UNDERSTANDING GAS ADSORPTION IN ZEOLITIC IMIDAZOLATE FRAMEWORKS: EXPERIMENTAL SYNTHESIS AND CHARACTERIZATION

[MEEM] William Morris¹

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P2-F12 - UPSCALING PORE SCALE CARBONATE PRECIPITATION RATES TO THE CONTINUUM SCALE

[NCGC] Carl Steefel¹, Catherine Noiriell², Li Yang¹, and Jonathan Ajo-Franklin¹

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P2-F13 - AGING IN DISSOLUTION AND PRECIPITATION RATES FOR MINERALS RELEVANT TO CO₂ SEQUESTRATION

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P2-F14 - CARBON DIOXIDE - WATER INTERFACIAL TENSION UNDER GEOLOGIC CO₂ STORAGE CONDITIONS: A MOLECULAR DYNAMICS SIMULATION STUDY

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P2-F15 - IN SITU KINETIC ANALYSIS OF CALCIUM CARBONATE NANOPARTICLE FORMATION USING GRAZING INCIDENCE SMALL ANGLE X-RAY SCATTERING

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