

US-German workshop series on artificial photosynthesis

Poster Session

May 04, 2023, 17:00-19:00 CEST

Space: gather.town

TITLE / AUTHORS / AFFILIATIONS

1 Codesign of Multijunction Photoelectrochemical Devices for Unassisted CO₂ Reduction to Multicarbon Products

Alex J. King^{1,2}, William J. Wei^{1,2}, Justin C. Bui^{1,2}, Adam Z. Weber², Alex T. Bell^{1,2}

¹ Department of Biomolecular Engineering, University of California, Berkeley, US

² Liquid Sunlight Alliance, Lawrence Berkeley National Laboratory, Berkeley, US

2 p-GaN/Al₂O₃/Au/Cu Catalytic System - Using XAS to Understand CO₂RR Catalytic Mechanism

Marija R. Zoric^{1,2}, Amy Cordones-Hahn^{1,2}

¹ SLAC National Accelerator Laboratory, Menlo Park, CA, USA

² Stanford PULSE Institute, Menlo Park, CA, USA

3 Photoelectrochemical Catalyst Deposition on III-V Semiconductor Surfaces for Direct Solar Water Splitting

Erica A. Schmitt¹, Margot Guidat¹, Marco Flieg¹, Max Nusshör¹, Daniel Lörch¹, Moritz Kölbach¹, Matthias M. May¹

¹ Eberhard Karls Universität Tübingen, Tübingen, Germany

4 Preparation of P-rich & group-III-rich GaInP (100) and subsequent H₂O or O₂ exposure

D. Ostheimer¹, M.A. Zare Pour¹, S. Shekarabi¹, K.D. Hanke¹, J. Koch¹, A. Paszuk¹, T. Hannappel¹

¹ Institute of Physics, Fundamentals of Energy Materials, Ilmenau University of Technology, Ilmenau, Germany

5 Atomic Structure of As-modified Si(100) Surface prepared by background Arsenic in MOCVD ambience

Chris Yannic Bohlemann¹, Manali Nandy¹, Agnieszka Paszuk¹, Oleksandr Romanyuk², Aaron Flötotto³, Aaron Gießl¹, Peter Kleinschmidt¹, Erich Runge³, Thomas Hannappel¹

¹ Institute of Physics, Fundamentals of Energy Materials, Ilmenau University of Technology, Ilmenau, Germany

² Institute of Physics, Academy of Sciences of the Czech Republic, Prague, Czech Republic

³ Institute of Physics, Theoretical Physics I, Ilmenau University of Technology, Ilmenau, Germany

6 Time-resolved microwave conductivity (TRMC) as a means to probe mobile charge carrier dynamics in wetted photocatalytic nanoreactors

Zejie Chen¹, Tea-Yon Kim¹, Simon Luo¹, and Shane Ardo¹

¹ Department of Chemistry, University of California Irvine, Irvine, CA 92697 USA

7 Reactive Capture of CO₂ into Formate by a Molecular Electrocatalyst: [Fe₄N(CO)₁₂]⁻

Rachel Siegel¹, Louise Berben¹

¹ University of California Davis, Davis, USA

8 GaN Nanowire-Based Light Absorbers for Artificial Photosynthesis

Juliane Koch¹, Patrick Häuser², Peter Kleinschmidt¹, Werner Prost², Nils Weimann², T. Hannappel¹

¹ Institute of Physics, Fundamentals of Energy Materials, Ilmenau University of Technology, Ilmenau, Germany

² Components for High Frequency Electronics (BHE), University of Duisburg-Essen, Germany

9 Nanowire-Based Light Absorber Patterning for Artificial Photosynthesis

Juliane Koch¹, Jiajia Qiu², Patrick Johne¹, Peter Kleinschmidt¹, Huaping Zhao², Yong Lei², T. Hannappel¹

¹ Institute of Physics, Fundamentals of Energy Materials, Ilmenau University of Technology, Ilmenau, Germany

² Institute of Physics, Applied Nanophysics, Ilmenau University of Technology, Ilmenau, Germany

10 Reduction of Crystal Defects in GaP Buffer Layers grown on Si(100) by MOCVD

Manali Nandy¹, Kai Hanke¹, Agnieszka Paszuk¹, Markus Feifel², Peter Kleinschmidt¹, Frank Dimroth², Andreas Beyer³, Kerstin Volz³, T. Hannappel¹

¹ Institute of Physics, Fundamentals of Energy Materials, Ilmenau University of Technology, Ilmenau, Germany

² Fraunhofer Institute for Solar Energy Systems ISE, Freiburg, Germany

³ Department of Physics and Materials Science Center, Philipps University Marburg, Germany

11 The Influence of Photodeposited Gold and/or Impregnated NiO Nanoparticles on the Photocatalytic CO₂ Reduction Activity of SrTiO₃-SrCO₃ Catalysts

Biborka Boga^{1,2}, Nikolaos G. Moustakas¹, Tim Peppel¹, Abdo Hezam¹, Armin Springer³, Shuoping Ding¹, Anh Binh Ngo¹, Vasile-Mircea Cristea², Norbert Steinfeldt¹, Jennifer Strunk¹

¹ Leibniz Institute for Catalysis (LIKAT), Rostock, Germany

² Babeş-Bolyai University, Cluj-Napoca, Romania

³ Arbeitsbereich Medizinische Biologie und Elektronenmikroskopisches Zentrum (EMZ), Universitätsmedizin Rostock, Rostock, Germany

12 Evaluation of Competing High-Spin Models for the S₂ State of the Oxygen-Evolving Complex

Markella Aiki Mermigki¹, Maria Drosou¹, Frank Neese¹, Dimitrios A. Pantazis¹

¹ Max-Planck-Institut für Kohlenforschung, Department of Molecular Theory and Spectroscopy, Mülheim an der Ruhr, Germany

13 QM/MM Studies of Reaction Center Triplet States in Photosynthesis

Sinjini Bhattacharjee¹, Frank Neese¹, Dimitros A. Pantazis¹

¹ Max-Planck-Institut für Kohlenforschung, Department of Molecular Theory and Spectroscopy, Mülheim an der Ruhr, Germany

14 Investigation of P-rich AlInP Interaction with Molecular H₂O and O₂

Mohammed Amin Zare Pour¹, Sahar Shekarabi¹, Hongfei Yang¹, Agnieszka Paszuk¹, Thomas Hannappel¹

¹ Institute of Physics, Fundamentals of Energy Materials, Ilmenau University of Technology, Ilmenau, Germany

15 Two-photon water splitting at a molecular ruthenium complex

Jacob Schneidewind^{1,*}, Miguel A. Argüello Cordero², Henrik Junge³, Stefan Lochbrunner², Matthias Beller³

¹ Institute of Technical and Macromolecular Chemistry, RWTH Aachen University, Aachen, Germany

² Institute for Physics and Department of Life, Light and Matter, University of Rostock, Rostock, Germany

³ Leibniz-Institut für Katalyse e.V., Albert-Einstein-Str. 29a, 18059 Rostock, Germany

16 Discussing the Role of Selective Contacts and Built-In Potential for Charge Separation and Transport in Photoelectrochemical Devices

Markus Schleuning^{1,2}, Ibbi Y. Ahmet¹, Roel van de Krol¹, Matthias M. May³

¹ Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany

² Institute of Chemistry, Technische Universität Berlin, Berlin, Germany

³ Institute of Physics and Theoretical Chemistry, Universität Tübingen, Tübingen, Germany

17 Life Cycle Analysis of a Large-Scale Coupled Photoelectrochemical System

Xinyi Zhang¹, Roel van de Krol¹, Fatwa F. Abdi¹

¹ Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany

18 Bubble Detachment from the Surface of a (Photo)electrode

Feng Liang¹, Fatwa F. Abdi¹

¹ Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany
