POSTER SESSION

001 **Comparison of the Activity of 3D Nickel-Manganese/Titanium Bifunctional Electrocatalysts for Alkaline Seawater and Simulated Seawater Splitting**
Barua, Sukomol[1]; Balčiūnaitė, Aldona[1]; Vaičiūnienė, Jūrate[1]; Tamašauskaitė-Tamašiūnaitė, Loreta[1]; Norkus, Eugenijus[1]; [1]Department of Catalysis, Center for Physical Sciences and Technology (FTMC), Vilnius/Lithuania

002 **Nickel catalysts for hydrogen generation**
Valeckytė, Gitana; Sukackienė, Zita; Kepenienė, Virginija; Stalnionienė, Irena; Jasulaitienė, Vitalija; Vaičiūnienė, Jūratė; Tamašauskaitė Tamašiūnaitė, Loreta; Stalnionis, Giedrius; Norkus, Eugenijus

003 **Study of Oxygen Reduction Reaction on alpha-Manganese Dioxide in a GDE Half-Cell**
Rampf, Alexander[1]; Zeis, Roswitha[2]; [1]Karlsruhe Institute of Technology, Helmholtz Institute, Ulm/Germany, [2]Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Erlangen-Nürnberg/Germany

004 **Electrocatalysis meets biocatalysis: microbial electrolysis cell**
Ilic, Ivan[1]; Lang, Maren[1]; Erben, Johannes[1]; Patel, Nitant[1]; Rodrigo, Jose[1]; [1]Electrochaea Planegg/Germany

005 **Bringing GDE half-cell and MEA single cell testing closer together**
Baumunk, Adrian[1]; Kircher, Mario[2]; Etzold, Bastian JM[1]; [1]Friedrich-Alexander-Universität Erlangen-Nürnberg, Fürth/Germany; [2]Technische Universität Graz, Graz/Austria

006 **The Effect of Electrocatalyst on Microfluidic Electrochemical Sensor**
Ghanbari, Mohammad Hossein[1]; Etzold, Bastian J.M[1]; [1]FAU Erlangen-Nürnberg, Erlangen/Germany

007 **3D-printed carbon electrodes for water electrolysis**
Olvianas, Muhammad[1]; Majeed, Abdul[1]; Gläsel, Jan[1]; Etzold, Bastian[1]; [1]FAU Erlangen-Nürnberg, Fürth/Germany

POSTER SESSION

008 **Implementation of an in situ atomic force microscope (AFM) setup to study the dynamics of (electro)catalytic interfaces**
Reindl, Simone[1]; Hilpert, Felix[1]; Brummel, Olaf[1]; Retzer, Tanja[1]; Libuda, Jörg[1]; [1]Interface Research and Catalysis, Erlangen Center for Interface Research and Catalysis, FAU Erlangen-Nürnberg, Erlangen/Germany

009 **Approaching Macroscopic Measurements in Microscopic Environments – A new Electrochemical Cell Design**
Merkens, Stefan[1]; Bejtka, Katarzyna[2]; Fontana, Marco[2]; Gho, Cecilia[2]; De Salvo, Giuseppe[1]; Pirri, Candido Fabrizio[2]; Chiodoni, Angelica[2]; Grzelczak, Marek[3]; Chuvilin, Andrey[1]; [1]CIC nanoGUNE BRTA, Donostia-San Sebastian/Spain; [2]Center for Sustainable Future Technologies@Polito, Istituto Italiano di Tecnologia, Torino/Italy; [3]Donostia International Physics Center (DIPC)

010 **Guidelines for correct product quantification in CO2 electrolysis**
Daniel Rottmann[1,2]; Ricarda Kloth[1]; Stefan Haufe[1]; Karl Mayrhofer[2]; [1]Wacker Chemie AG, Munich/Germany; [2]Department of Chemical and Biological Engineering, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen/Germany

011 **Chemical and Structural In-Situ Characterization of Model Electrocatalysts by Combined Infrared Spectroscopy and Surface X-Ray Diffraction**
Brummel, Olaf[1]; Jacobse, Leon[2]; Simanenko, Alexander[1]; Deng, Xin[1]; Geile, Simon[2]; Gutowski, Olof[2]; Vonk, Vedran[2]; Lykhach, Yaroslava[1]; Stierle, Andreas[2]; Libuda, Jörg[1]; [1]Friedrich-Alexander-Universität Erlangen-Nürnberg/Germany, [2]Centre for X-ray and Nano Science CXNS, Deutsches Elektronen-Synchrotron DESY, Hamburg/Germany

012 **Evaluation of NiFeOOH Catalysts in Varied Electrode Geometries under Industrially Realistic Conditions for Enhanced Alkaline Water Electrolysis**
Hoffmann, Julia[1]; Schmitt, Nicolai[2]; Goerens, Christian[3]; Etzold, Bastian[1]; [1]Friedrich-Alexander-Universität Erlangen-Nürnberg/Germany, Power-to-X Technologies, Fürth/Germany, [2]TU Darmstadt, Ernst-Berl-Institut für Technische und Makromolekulare Chemie, Darmstadt/Germany, [3]Umicore AG & Co KG, Hanau-Wolfgang/Germany

POSTER SESSION

013 **Isopropanol electro-oxidation on well-defined model Pt-Ru alloys: structure, activity, and composition**

Simanenko, Alexander[1]; Kastenmeier, Maximilian[1]; Winkler, Florian[1]; Skála, Tomáš[2]; Tsud, Nataliya[2]; Mehl, Sascha[3]; Brummel, Olaf[1]; Lykhach, Yaroslava[1]; Libuda, Jörg[1]; [1]Interface Research and Catalysis, Erlangen Center for Interface Research and Catalysis, Friedrich-Alexander-University Erlangen-Nürnberg, [2]Department of Surface and Plasma Science, Charles University, Prague/Czech Republic, [3]Elettra - Sincrotrone Trieste S.C.p.A., Basovizza-Trieste/Italy

014 **The Effects of Support Material on the Structural Evolution of Copper during Electrochemical CO2 Reduction**

Koh, Ezra S.[1]; Geiger, Simon[2]; Gunnarson, Alexander[3]; Imhof, Timo[1]; Meyer, Gregor[4]; Paciok, Paul[5]; Etzold, Bastian[4]; Rose, Marcus[4]; Schüth, Ferdi[3]; Ledendecker, Marc[1]; [1]Technical University of Munich, Straubing, Germany, [2]Deutsches Zentrum für Luft- und Raumfahrt, Stuttgart/Germany, [3]Max Planck-Institut für Kohlenforschung, Mülheim an der Ruhr/Germany, [4]Technical University of Darmstadt/Germany, [5]Forschungszentrum Juelich/Germany

015 **Nanostructural Insights into Sb-doped CoOx Model Catalysts for Acidic Water Oxidation**

Chalil Oglou, Ramadan; Interdisciplinary Nanoscience Center, Aarhus University, Aarhus/Denmark

016 **Investigation of the Gas Permeation Stream through GDEs for CO2 Electrolysis and Possible Links to Selectivity**

Römer, Melina[1]; Röbllitz, Joshua[1]; Näser, Nils[2]; Etzold, Bastian[2]; [1]TU Darmstadt, Darmstadt/Germany, [2]Friedrich-Alexander-Universität Erlangen-Nürnberg, Fürth/Germany

POSTER SESSION

017 **Scalable Synthesis of IrOx@TiO2 Core-Shell Catalyst for Proton-Exchange Membrane Water Electrolysis**

Hoffmeister, Darius[1]; Finger, Selina[1]; Fiedler, Lena[1]; Ma, Tien-Ching[1]; Körner, Andreas[1]; Zlatar, Matej[1]; Fritsch, Birk[1]; Witte-Bodnar, Kerstin[2]; Carl, Simon[3]; Götz, Alexander[3]; Apeleo Zubiri, Benjamin[3]; Spiecker, Erdmann[3]; Cherevko, Serhiy[1]; Freiberg, Anna T.S.[1]; Mayrhofer, Karl J.J.[1]; Thiele, Simon[1]; Hutzler, Andreas[1]; van Pham, Chuyen[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany, [2]Materials Diagnostics for H2 Technologies, Fraunhofer Institute for Microstructure of Materials and Systems IMWS, Halle/Germany, [3]Institute of Micro- and Nanostructure Research (IMN) and Center for Nanoanalysis and Electron Microscopy (CENEM), Interdisciplinary Center for Nanostructured Films (IZNF), Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany

018 **Pitfall on interpretation of double layer capacitance increase after accelerated stress test of NiMo hydrogen evolution catalysts**

Majeed, Abdul[1]; [1]Friedrich-Alexander-Universität Erlangen-Nürnberg/Germany

019 **Elucidating electronic characteristics of transition metal perovskites as descriptors for (electro)chemical reactions**

Mürtz, Sonja[1]; Simböck, Johannes[1]; Zeng, Feng[2]; Ghiasi, Mahnaz[3]; Schönebaum, Simon[4]; Simon, Ulrich[4]; de Groot, Frank M. F.[3]; Palkovits, Regina[1]; [1]Chair of Heterogeneous Catalysis and Chemical Technology, RWTH Aachen, Aachen/Germany), [2]Nanjing Tech University, [3]Debye Institute for Nanomaterials Science, Utrecht University, [4]Institute of Inorganic Chemistry, RWTH Aachen

020 **How the ionic liquid [C2C1Im][OTf] affects the stability of Pt(111) during potential cycling**

Hilpert, Felix[1]; Yunsheng, Qiu[2]; Lahn, Leopold[2]; Höllring, Kevin[1]; Briega-Martos, Valentin[2]; Cherevko, Serhiy[2]; Kasian, Olga[2]; Smith, Ana-Sunčana[1]; Mayrhofer, Karl[2]; Brummel, Olaf[1]; Libuda, Jörg[1]; [1]Friedrich-Alexander-Universität Erlangen-Nürnberg , Erlangen/Germany, [2]Helmholtz Institute Erlangen-Nürnberg for Renewable Energy, Erlangen/Germany

021 **Nanostructural effect on the mass transport of mesoporous hydrogel electrodes for oxygen evolution reaction**

Wago, Hiroki[1]; Mitsushima, Shigenori[1]; Kuroda, Yoshiyuki[1]; [1]Department of Chemistry Applications and Life Science, Graduate School of Engineering Science, Yokohama National University, Tokiwadai, Hodogaya-ku, Yokohama Kanagawa/Japan

POSTER SESSION

022 **Dissolution of Organic Overlayers Modified Platinum Single Crystal Interfaces in Acidic Medium**

Qiu, Yunsheng[1]; Briega, Valentin[1]; Yang, Juntao[2]; Hilpert, Felix[2]; Mayrhofer, Karl[1]; Brummel, Olaf[2]; Libuda, Jorg[2]; Cherevko, Serhiy[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany, [2]Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

023 **Electrochemically triggered back-conversion of (Z)-4,4'-(diazene-1,2-diyl)bis(N,N-diethylaniline)**

Hussain, Zarah[1]; Schatz, Dominic[2]; Oberhof, Nils[3]; Franz, Evanie[1]; Wegner, Hermann A.[2]; Dreuw, Andreas[3]; Brummel, Olaf[1]; Libuda, Jörg[1]; [1]nterface Research and Catalysis, Erlangen Center for Interface Research and Catalysis, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany, [2]Institute of Organic Chemistry, Justus-Liebig-Universität, Giessen/Germany, [3]Interdisciplinary Center for Scientific Computing, Universität Heidelberg, Heidelberg/Germany

024 **Computational Modeling of Electrocatalytic Oxygen Evolution Reaction in Transition Metal Oxide Nanoparticles**

Troiano Feliciano, Gustavo[1]; Auer, Alexander[1]; [1]Max Planck Institut für Kohlenforschung, Mulheim an der Ruhr/Germany

025 **Electrochemical redox behavior of Pt(II)-N-heterocyclic carbene complexes: An in-situ IR spectroscopy study**

Yang, Juntao; Bergen, Alexander; Wick, Christian; Smith, Ana-Suncana; Meyer, Karsten; Brummel, Olaf; Libuda, Jörg

POSTER SESSION

026 **Red/blue-light responsive with prolonged charge carriers carbon nitride/TiO2 heterointerface for multiple photoelectrocatalytic applications**

Fernandez Silva, Ingrid[1]; Pulignani, Carolina[2]; Odutola, Jokotadeola[3]; Galushchinskiy, Alexey[1]; F. Texeira, Ivo[4]; Isaacs, Mark[5]; Mesa, Camilo A.[6]; Scoppola, Ernesto[7]; These, Albert[8]; Badamdorj, Bolortuya[1]; Muñoz-Márquez, Miguel Ángel[9]; Zizak, Ivo[10]; Palgrave, Robert[11]; Tarakina, Nadezda V.[1]; Gimenez, Sixto[6]; Brabec, Christoph[12]; Bachmann, Julien[13]; Cortes, Emiliano[14]; Tkachenko, Nikolai[3]; Savateev, Oleksandr[1]; Jiménez Calvo, Pablo[1]; [1]Department of Colloid Chemistry, Max-Planck-Institute of Colloids and Interfaces, Potsdam/Germany, [2]Yusuf Hamied Department of Chemistry, University of Cambridge, Cambridge/Great Britain, [3]Faculty of Engineering and Natural Sciences, Tampere University, Tampere/Finnland, [4]Department of Chemistry, Federal University of São Carlos, São Carlos/Brazil, [5]HarwellXPS, Research Complex at Harwell, Didcot/Great Britain, [6]Institute of Advanced Materials (INAM), University Jaume I, Castello de la Plana/Spain, [7]Department of Biomaterials, Max Planck Institute of Colloids and Interfaces, Potsdam/Germany, [8]Institute of Materials for Electronics and Energy Technology (i-MEET), Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany, [9]Chemistry Division, School of Science and Technology, University of Camerino, Via Madonna delle Carceri/Italy, [10]Helmholtz-Zentrum Berlin für Materialien und Energie (HZB), Berlin/Germany, [11]Department of Chemistry, University College London, London/Great Britain, [12]Helmholtz Institute Erlangen-Nürnberg (HI ERN), Erlangen/Germany, [13]Chemistry of Thin Film Materials, IZNF, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany,; [14]Nanoinstitute Munich, Faculty of Physics, Ludwig-Maximilians-Universität München, München/Germany

027 **Solvent-free fabrication method for the production of gas diffusion electrodes for stable and efficient CO2 reduction to alcohols**

Chen, Qinhao[1]; Kube, Alexander[1]; Kopljar, Dennis[1]; Friedrich, Kaspar Andreas[1]; German Aerospace Center (DLR), Institute of Engineering Thermodynamics, Stuttgart/Germany

028 **Iridium incorporated in mixed-metal oxides as catalysts for acidic OER in PEM-water electrolysers**

Prölß, Timo[1]; Franken, Tanja[1]; [1]Friedrich-Alexander-Universität Erlangen-Nürnberg/Germany

029 **Enhancing Alkaline Membrane Water Electrolysis: Optimization of Electrodes with Non-Noble Metal Catalysts**

Pineti, Enado[1]; Radev, Ivan[1]; Hesse, Miriam[1]; Wystemp, Lars[1]; Manolova, Mila[2]; Sörgel, Seniz[2]; [1]The hydrogen and fuel cell center (ZBT GmbH), Duisburg/Germany, [2]fem Forschungsinstitut Edelmetalle + Metallchemie, Schwäbisch Gmünd/Germany

POSTER SESSION

030 **Laser-induced in-situ synthesis of metal nanoparticles in solid phase**
Wang, Huize[1]; Pfeifer, Philipp[2]; Björk, Linnéa[2]; Ledendecker, Marc[1]; [1]Helmholtz Institute Erlangen-Nürnberg for Renewable Energy (HI ERN), Erlangen/Germany, [2]Technical University of Munich, Straubing/Germany;

031 **High-throughput screening of electrodes for the synthesis of bio-hybrid fuels**
Peirow Asfia, Mohammad[1]; Nikolaienko, Pavlo[1]; Mayrhofer, Karl[1]; [1]Helmholtz-Institut Erlangen-Nürnberg for Renewable Energy, Erlangen/Germany

032 **Sulfur-doped carbon nitrides serve as disordered, visible-light responsive materials with enhanced optical properties for photoelectrocatalysis**
Jerigova, Maria[1]; Markushyna, Yevheniia[1]; F. Texeira, Ivo[2]; Badamdorj, Bolortuya[1]; Isaacs, Mark[3]; Cruz, Daniel[4]; Lauerman, Iver[5]; Muñoz-Márquez, Miguel Ángel[6]; Tarakina, Nadezda V.[1]; Lopez Salas, Nieves[1]; Savateev, Oleksandr[1]; Jiménez Calvo, Pablo[1]; [1]Department of Colloid Chemistry, Max-Planck-Institute of Colloids and Interfaces, Postdam/Germany; [2]Department of Chemistry, Federal University of São Carlos, Brazil; [3]HarwellXPS, Research Complex at Harwell, Rutherford Appleton Lab, Great Britain; [4]Department of Inorganic Chemistry, Fritz-Haber-Institut der Max-Planck-Gesellschaft, [5]Helmholtz-Zentrum Berlin für Materialien und Energie Department, Germany, [6]Chemistry Division, School of Science and Technology, University of Camerino, Italy

033 **Identifying the high-valent intermediates dominating the OER activity and trans-passive dissolution of a Cu-based electrocatalyst in alkaline medium**
Garcia Diez, Raul[1]; Wibowo, R.Enggar[1]; Quevedo, Wilson[1]; van der Merwe, Marianne1; Kataev, Elmar1; Lahn, Leopold[2]; Kasian, Olga[2]; Bär, Marcus[1]; [1]Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin/Germany, [2]Dept. Materials Sci. and Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

034 **Gas-Phase Synthesis of Nanostructured Support Materials for Electrodes in Electrolyser Technology**
Stahlmecke, Burkhard[1]; Underberg, Martin[1]; Spree, Mathias[1]; Kunze, Frederik[1]; Schnurre, Sophie Marie[1]; Hülser, Tim[1]; [1]Institut für Umwelt & Energie, Technik & Analytik e. V. (IUTA), Duisburg/Germany

POSTER SESSION

035 **Investigating the Impact of Electrolyte Temperature on the Oxygen Evolution Reaction Efficiency of Ni-Co/NiFelt Nano Composite Electrode**
Niyati, Ataollah[1]; Moranda, Arianna[1]; Beigzadeh Arough, Pouya[1]; Paladino, Ombretta[1]; [1]Department of Civil, Chemical and Environmental Engineering, University of Genova, Genova/Italy

036 **Bipolar Plates in Proton-Exchange Membrane Water Electrolysis: Influences of Temperature and Fluoride Contamination on the Stability**
Fiedler, Lena[1]; Ma, Tien-Ching[1]; Fritsch, Birk[1]; Risse, Jan H.[2]; Lechner, Michael[2]; Dworschak, Dominik[1]; Merklein, Marion[2]; Mayrhofer, Karl J. J.[1]; Hutzler, Andreas[1]; [1]Helmholtz Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany, [2]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany

037 **Carbon Cloth Electrodes for Vanadium Redox Flow Batteries and their Thermal Activation**
Scherer, Simon[1]; Schilling, Monja[2]; Vocht, Marc P.[3]; Hermanutz, Frank[3]; Zeis, Roswitha[1]; [1]Friedrich-Alexander University Erlangen-Nuremberg, Germany, [2]Karlsruhe Insitute of Technology (KIT), Germany, [3]Deutsche Institute für Textil- und Faserforschung Denkendorf, Germany

038 **The oxygen reduction reaction at the interface between Pt and protic ionic liquids**
Rodenbücher, Christian[1]; Chen, Yingzhen[1]; Wippermann, Klaus[1]; Korte, Carsten[1]; [1]Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Jülich, Germany

039 **Watching electrochemistry at the nanoscale**
Körner, Andreas[1]; Morales, A. Lucía[1]; Fiedler, Lena[1]; Finger, Selina[1]; Fritsch, Birk[1]; Mayrhofer, Karl J.J.[1]; Hutzler, Andreas[1]; [1]Helmholtz Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

040 **Electrospun Nanofiber Catalyst Materials for Oxygen Evolution Reaction in Acidic Water Electrolysis**
Kovács, Miklós Márton[1]; Mayrhofer, Karl J. J.[1]; Dworschak, Dominik[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

POSTER SESSION

041 **Towards Low Iridium Loading in Proton-Exchange Membrane Water Electrolysis: Full-Cell Performance of IrOx@TiO2 Core-Shell Particles in Anode Catalyst Layers**

Finger, Selina[1]; Hoffmeister, Darius[1]; Fiedler, Lena[1]; Ma, Tien-Ching[1]; Körner, Andreas[1]; Zlatar, Matej[1]; Fritsch, Birk[1]; Witte-Bodnar, Kerstin[2]; Simon, Carl[3]; Götz, Alexander[3]; Apeleo Zubiri, Benjamin[3]; Spiecker, Erdmann[3]; Cherevko, Serhiy[1]; Freiberg, Anna T. S.[1]; Mayrhofer, Karl J. J.[1]; Thiele, Simon[1]; Hutzler, Andreas[1]; van Pham, Chuyen[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany, [2]Materials Diagnostics for H2 Technologies, Fraunhofer Institute for Microstructure of Materials and Systems IMWS, Halle/Germany, [3]Institute of Micro- and Nanostructure Research (IMN) and Center for Nanoanalysis and Electron Microscopy (CENEM), Interdisciplinary Center for Nanostructured Films (IZNF), Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany

042 **Hydroxide-based High Entropy Metal Organic Framework for Oxygen Evolution Reaction**

Roy, Arkendu[1]; [1]Federal Institute for Materials Research and Testing (BAM), Berlin/Germany

043 **Modeling oxygen bubble formation and transport in PEM water electrolysis**

Xie, Qingguang[1]; Scheel, Thomas[1]; Dhungana, Gaurab[2]; Aouane, Othmane[1]; Harting, Jens[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany, [2]Friedrich-Alexander-Universitat Erlangen-Nurnberg, Erlangen/Germany

044 **Investigation of the hydrogen evolution capability of CuO/Cu2O nanowires grown on Copper foam for alkaline water splitting**

Vernekar, Yashashree[1]; Fernandez Perez, Bibiana[1]; Ragonese, Paola[1]; Maurizio, Chiara[1]; [1]Padova University, Padova/Italy

045 **Analysis of electrochemical isopropanol dehydrogenation on the PtRu/C catalyst**

Valeske, Moritz[1]; van Pham, Chuyen[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Nuremberg/Germany

POSTER SESSION

046 **Evaluation of binder and membrane materials for electrocatalysis in electrochemical hydrogen pumps**
Marchfelder, Carla[1]; Braig, Michael[1]; Hager, Linus[2]; Stigler, Theresa[2]; Kerres, Jochen[2]; Thiele, Simon[2]; Zeis, Roswitha[3]; [1]Karlsruhe Institute of Technology, Helmholtz Institute Ulm, Ulm/Germany, [2]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany , [3]Friedrich-Alexander-Universität Erlangen-Nürnberg, Department of Electrical, Electronics, and Communication Engineering, Germany

047 **Activation of Electrodeposited OER Catalyst Layers by a Stainless Steel Support**
Deo, Yashwardhan[1]; Thissen, Niklas[1]; Seidl, Vera[1]; Gallenberger, Julia[2]; Hofmann, Jan P.[2]; Mechler, Anna K.[1]; [1]Electrochemical Reaction Engineering (AVT.ERT), RWTH Aachen University, Aachen/Germany, [2]Surface Science Laboratory, Department of Materials and Earth Sciences, Technical University of Darmstadt, Darmstadt/Germany

048 **Degradation of electronic structure of oxygen evolution reaction model for perovskite electrocatalysts**
Teng, Zhenjie; Kleiner, Karin; Kaus, Anton; Maksumov, Muzaffar; Ying, Bixian; Gunkel, Felix; Florian, Hausen

049 **Quantification of step density on ion-eroded single-crystalline metal electrodes**
Škvára, Jan[1]; Výhonský, Matyas[1]; Samal, Pankaj Kumar[1]; Mysliveček, Josef[1]; [1]Department of Surface and Plasma Science, Charles University, V Praha 8 - Libeň/Czech Republich

050 **Preparation and transfer of well-defined model catalysts for energy conversion and storage: From ultrahigh vacuum into electrochemical cell**
Hübsch, Robert[1]; Lykhach, Yaroslava[1]; Brummel, Olaf[1]; Libuda, Jörg[1]; Samal, Pankaj Kumar[2]; [1]Interface Research and Catalysis, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany, [2]Department of Surface and Plasma Science, Charles University, Prague/Czech Republic

051 **Influence of Cations and pH on the kinetics of Carbon dioxide Reduction Reaction in Acidic Electrolyte**
Menisa, Leta Takele[1]; Schmid, Bernhard[1]; Tempel, Hermann[1]; Eichel, Rüdiger-A.[1]; [1]Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Jülich/Germany

POSTER SESSION

052 **Structure-property relationships in Pt-Ceria model electrocatalytic systems**
Fusek, Lukáš[1]; Samal, Pankaj Kumar[1]; Keresteš, Jiří[1]; Khalakhan, Ivan[1]; Johánek, Viktor[1]; Lykhach, Yaroslava[2]; Libuda, Jörg[2]; Brummel, Olaf[2]; Mysliveček, Josef[1]; [1]Charles University, Faculty of Mathematics and Physics, Department of Surface and Plasma Science, Praha/Czech Republic, [2]Interface Research and Catalysis, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany

053 **Constructing efficient 2-electron transfer ORR catalyst using carbon obtained from sewage sludge**
Lourenco, Julio Cesar[1]; Fortunato, Guilherme V.[1]; Porto, Tulio P.[2]; Souto, Robson S.[3]; de Moraes, Nicolas P.[3]; Choi, Jisik[1]; Rodrigues, Liana A.[2]; Rocha, Robson S.[2]; Lanza, Marcos R V.[3]; Ledendecker, Marc[4]; [1]Sustainable Energy Materials, Technical University Munich, Straubing/Germany, [2]Lorena School of Engineering, University of São Paulo, Lorena/Brazil, [3]São Carlos Institute of Chemistry, University of São Paulo, São Carlos/Brazil, [4]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Nuremberg/Germany

054 **Optimizing Copper Cobalt Hydroxide Catalysts for Enhanced OER in Alkaline Electrolyzers: Composition, Characterization, and Reproducibility Study**
Saei, Worawee[1]; Pasel, Joachim[1]; Korte, Carsten[1]; Peters, Ralf[1]; [1]Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Jülich/Germany

055 **Obtaining activated carbon from sugar cane bagasse for H2O2 electrogeneration material electrode**
Porto, Tulio P[1]; Nogueira, Beatriz[1]; Cruz, Igor PC[1]; Souto, Robson S.[2]; de Moraes, Nicolas P.[2]; Fortunato, Guilherme V[3]; Lourenco, Julio Cesar[3]; Rodrigues, Liana A.[1]; Ledendecker, Marc[4]; Lanza, Marcos R. V.[2]; Rocha, Robson S.[1]; [1]Lorena School of Engineering, University of São Paulo, Lorena/Brazil, [2]São Carlos Institute of Chemistry, University of São Paulo, São Carlos/Brazil, [3]Sustainable Energy Materials, Technical University Munich, Campus Straubing, Straubing/Germany, [4]Helmholtz Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Nuremberg/Germany

056 **Exploring the Influence of Membrane Thickness on Platinum and Iridium Catalysts in Gas Diffusion Electrodes for Oxygen Reduction and Oxygen Evolution Reactions**
Marsel, Aleš[1]; Hotko, Miha[1]; Hodnik, Nejc[1]; 1National Institute of Chemistry Slovenia, Ljubljana/Slovenia

POSTER SESSION

057 **Investigating the Impact of Iron Impurities on Nickel Electrocatalysts for the Hydrogen Evolution Reaction**
Hotko, Miha[1]; Hodnik, Nejc[1]; Marsel, Aleš[1]; Bele, Marjan[1]; [1]National Institute of Chemistry Slovenia, Ljubljana/Slovenia

058 **How the Complex Interface between Transport and Catalyst Layer Influences Water Electrolysis Performance**
Ma, Tien Ching[1]; Hutzler, Andreas[1]; Bensmann, Boris[2]; Hanke-Rauschenbach, Richard[2]; Thiele, Simon[1]; [1]Helmholtz Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Nuremberg/Germany, [2]Institute of Electric Power Systems, Leibniz University Hannover

059 **Synthesis of crystalline valve metal oxide and precious metal oxide nanoparticles at high temperatures**
Pfeifer, Philipp[1]; Malinovic, Marko[1]; Ledendecker, Marc[2]; [1]Technische Universität München, Straubing/Germany, [2] Helmholtz Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Nuremberg/Germany

060 **Exploring Electrocatalytic Hydrogenation of Furfural on Pd/C Nanoparticles Using Electrochemistry Coupled With Mass Spectrometry**
Maselj, Nik[1]; Jovanovski, Vasko[1]; Trputec, Jan[1]; Bele, Marjan[1]; Jovanovič, Primož[1]; Hodnik, Nejc[1]; [1]Department of Materials Chemistry, National Institute of Chemistry, Ljubljana/Slovenia

061 **Hydrogen Evolution Reaction on Alloys: The Role of Local Adsorption, d-Band, and Surface-Site Utilization for the Electrocatalytic Activity**
Schalenbach, Maximilian[1]; Tesch, Rebekka[1]; Kowalski, Piotr[1]; Eichel, Rüdiger[1]; [1]Forschungszentrum Jülich GmbH, Jülich/Germany

062 **Connecting the MPS Permeability to the Spatial Distribution of CO 2**
Müller, Max[1]; Tempel, Hermann[1]; Eichel, Rüdiger-A.[1]; Schmid, Bernhard[1]; [1]Forschungszentrum Jülich GmbH, Jülich/Germany

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063 **Stability of Cobalt Oxide under OER Conditions in Acidic Electrolytes**
Priamushko, Tatiana[1]; Franz, Evanie[2]; Guggenberger, Patrick[3]; Brummel, Olaf[2]; Libuda, Jörg[2]; Kleitz, Freddy[3]; Cherevko, Serhiy[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Nuremberg/Germany, [2]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany, [3]University of Vienna, Vienna/Austria

064 **A Versatile Approach to Electrochemical In Situ Ambient Pressure X-ray Photoelectron Spectroscopy: Application to a Complex Model Catalyst**
Lykhach, Yaroslava[1]; Brummel, Olaf[1]; Ralaiarisoa, Maryline[2]; Berasategui, Matias[2]; Kastenmeier, Maximilian[1]; Fusek, Lukáš[1]; Simanenko, Alexander[1]; Gu, Wenqing[2]; Clark, Pip C. J.[2]; Yivlialin, Rossella[2]; Sear, Michael J.[2]; Mysliveček, Josef[3]; Favaro, Marco[2]; Starr, David E.[2]; Libuda, Jörg[1]; [1]Interface Research and Catalysis, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany, [2]Helmholtz Zentrum Berlin für Materialien und Energie GmbH, Institute for Solar Fuels, Germany, [3]Charles University, Department of Surface and Plasma Science, Prague/ Czech Republic

065 **High-Throughput Synthesis and Electrochemical Screening of IrxCo1-xOy Electrocatalyst Libraries for Acidic Oxygen Evolution Reaction**
Przybysz, Joanna[1]; Jenewein, Ken[1]; Minichová, Mária[1]; Priamushko, Tatiana[1]; Cherevko, Serhiy[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Nuremberg/Germany

066 **Designing a Novel Setup for High-Throughput Investigations of Electrochemical Synthesis in Real Time**
Cuomo, Angelina[1]; Nikolaienko, Pavlo[1]; Mayrhofer, Karl J. J.[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

067 **Experimental and Simulation Study of Doping Induced Enhancement of Activity and Stability for OER with Isomaterially Heterostructured MnO2**
Sadiq, Mohammad Mazhar[1]; Jha, Anurag[1]; Ganesh S. Pala, Raj[1]; [1]IIT Kanpur, Kalianpur,Kanpur/India

068 **A Density Functional Theory Study of H2 Adsorption on Bi55, Ni55 and Ni53Bi2 Nanoparticles**
Ahmadi, Shideh[1]; Mosey, Nicholas J.[1]; [1]Queen's University at Kingston, Kingston/California

POSTER SESSION

069 **High-Throughput Electrochemical Half-Cell Testing of Realistic Catalyst Layers for Proton Exchange Membrane Water Electrolysis**
Röttcher, Nico C.[1]; Mayrhofer, Karl J. J.[1]; Dworschak, Dominik[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

070 **Unraveling the effect of potential and temperature in IrO2 catalysts for oxygen evolution reaction (OER) using in-situ operando X-ray absorption spectroscopy**
Huang, Rui[1]; Czioska, Steffen[1]; Ehelebe, Konrad[2]; Geppert, Janis[3]; Escalera-López, Daniel[2]; Boubnov, Alexey[4]; Saraçi, Erisa[1]; Mayerhöfer, Britta[2]; Krewer, Ulrike[3]; Cherevko, Serhiy[2]; Grunwaldt, Jan-Dierk1; [1]Institute of Catalysis Research and Technology, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen/Germany, [2]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany, [3]Institute for Applied Materials – Electrochemical Technologies, Karlsruhe Institute of Technology, Karlsruhe/Germany, [4]Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology, Karlsruhe/Germany

071 **Enhancing Electrocatalytic Interfaces for Sustainable Hydrogen Production employing MXene: A Study of CuCo2-LDH on V2CTx**
Schmiedecke, Bastian[1]; Wu, Bing[2]; Schultz, Thorsten[1]; Sofer, Zdeněk[2]; Koch, Norbert[3]; Browne, Michelle[1]; 1Helmholtz-Zentrum Berlin für Materialien und Energie (HZB), Berlin/Germany, [2]University of Chemistry and Technology Prague/Czech Republic, [3]Humboldt-Universität zu Berlin, Department of Physics, Berlin/Germany

072 **MXene supported nickel-iron catalysts for water splitting**
Zuber, Axel[1]; Browne, Michelle P.[1]; [1]Helmholtz Young Investigator Group Electrocatalysis: Synthesis to Devices, Berlin/Germany

073 **Dynamic transport and interfacial studies of Ag electrodes in CO2 electrochemical conversion**
Ma, Chaoqun[1]; El-Nagar, Gumaa[1]; Mayer, Matthew[1]; [1]Helmholtz-Zentrum Berlin für Materialien und Energie (HZB), Berlin/Germany

074 **Theoretical Study of Nitrogen Reduction over MXenes**
Singh, Diwakar[1]; Razzaq, Samad[1]; Exner, Kai S.[1]; [1]Universität Duisburg-Essen, Essen/Germany

POSTER SESSION

075 **Attaining substantially enhanced oxygen evolution reaction rates on Ni foam catalysts in a gas diffusion electrode setup**
Berner, Etienne[1]; Wiberg, Gustav K. H.[1]; Arenz, Matthias[1]; [1]University of Bern, Bern/Switzerland

076 **COBALT-PHOSPHORUS CATALYSTS FOR HYDROGEN GENERATION FROM SODIUM BOROHYDRIDE SOLUTION**
Amber, Huma[1]; Tamašauskaitė-Tamašiūnaitė, Loreta[1]; Sukackienė, Zita[1]; Vaičiūnienė, Jūratė[1]; Norkus, Eugenijus[1]; [1]Center for Physical Sciences and Technology (FTMC), Vilnius/Lithuania

077 **On-Line Dissolution Stability Study of Graphene-Modified Pt(111)**
Briega-Martos, Valentin[1]; Lloret, Vicent[1]; Maier, Maximilian[1]; Hilpert, Felix[2]; Escalera-Lopez, Daniel[1]; Böhm, Thomas[1]; Brummel, Olaf[2]; Libuda, Jörg[2]; Thiele, Simon[1]; Cherevko, Serhiy[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany, [2]Interface Research and Catalysis, ECRC, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany

078 **Electronic and Ionic Perturbations at Electrocatalyst Nanoparticles Induced by the Support**
Zhang, Yufan[1]; Binninger, Tobias[1]; Huang, Jun[1]; Eikerling, Michael[1]; [1]Forschungszentrum Juelich, Juelich, Germany

079 **Effect of the Synthesis Route and Co Coverage on Co / Ti3C2Tx Materials for the Oxygen Evolution Reaction**
Can Kaplan[1], Ricardo Mogollon Restrepo[1], Thorsten Schultz[2,3], Ke Li[4], Francisco Garcia-Moreno[5], Paul H. Kamm[5], Valeria Nicolosi[4], Norbert Koch[2,3] , Michelle P. Browne[1]; [1]Helmholtz Young Investigator Group Electrocatalysis: Synthesis to Devices, Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin/Germany; [2]Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin/Germany; [3]Institut für Physik & IRIS Adlershof, Humboldt-Universität zu Berlin, Berlin/Germany, [4]School of Chemistry, CRANN and AMBER Research Centres, Trinity College Dublin, College Green, Dublin/Ireland, [5]Abteilung Mikrostruktur- und Eigenspannungsanalyse, Helmholtz Zentrum Berlin für Materialien und Energie GmbH, Berlin/Germany

POSTER SESSION

080 **The Relationship Between Activity and Stability of Iridium:Ruthenium Catalysts in Proton Exchange Membrane Water Electrolysis**
Igel, Carolin Sophie[1]; Milosevic, Maja[1]; Cherevko, Serhiy[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

081 **Influence of Different Operating Conditions on Iridium Dissolution in a Proton Exchange Membrane Water Electrolyzer**
Milosevic, Maja[1]; Winkelmann, Leonard[1]; Thiele, Simon[1]; Cherevko, Serhiy[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

082 **Modified Ni foam for the electrooxidation of bio-sourced compounds**
Rafaïdeen, Thibault[1]; Napporn, Têko[1]; Coutanceau, Christophe[1]; [1]IC2MP CNRS, Poitiers/France

083 **Development of PtM-(SnO2)/C active catalyst for the hydrogen oxidation reaction (HOR) in the presence of CO**
Bouho, Franck[1]; Napporn, Têko[1]; Coutanceau, Christophe[1]; [1]IC2MP CNRS, Poitiers/France

084 **Bifunctional ternary Al-Fe-Ni electrocatalysts for critical raw material-free water electrolysis**
Restivo, Joao[1]; Dias, Dulce[1]; Silva Sousa, Juliana Patrícia[1]; [1]International Iberian Nanotechnology Laboratory, Braga/Portugal

085 **Selective capture and conversion of carbon dioxide on carbon-based nanocomposites**
Hetze, Kai[1]; Schutjajew, Konstantin[1]; Oschatz, Martin[1]; [1]Friedrich-Schiller Universität Jena, Jena/Germany

086 **Dynamic operation of a zero-gap CO2 electrolyzer**
Samu, Angelika Anita[1]; Endrődi, Balázs[1]; Janáky, Csaba[1]; [1]University of Szeged, Szeged/Hungary

POSTER SESSION

087 **Nitrogen Sorption and Electrochemical Ammonia Synthesis at the Carbon/Ionic Liquid Interface**
Schutjajew, Konstantin[1]; Nortmeyer, Lucas[1]; Prykhodska, Sofiia[1]; Troschke, Erik[1]; Oschatz, Martin[1]; [1]Friedrich-Schiller Universität Jena, Jena/Germany

088 **Nano-Porous High Entropy Oxide Bifunctional Electrocatalysts as an Air Cathode for Rechargeable Zinc-Air Batteries**
Ozgur, Cagla[1]; Toparli, Cigdem[1]; [1]Middle East Technical University (METU), Ankara/Türkiye

089 **Multi-Cationic High Entropy Perovskite Oxides for Electrocatalytic Oxygen Evolution and Oxygen Reduction Reactions**
Erdil, Tuncay[1]; Toparli, Cigdem[1]; [1]Middle East Technical University (METU), Ankara/Türkiye

090 **Modulating The Product Distribution Of The Electrochemical Reduction Of CO2 Using Organic Modifiers**
Parada Villarroel[1], Walter Agustin[1]; Sajevic, Urban[1]; Nikilaienko, Pavlo[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

091 **Investigation of cation-effect on the high-entropy spinel oxides as a bifunctional electrocatalyst for rechargeable zinc-air batteries**
Geyikci, Uygar[1]; Toparli, Cigdem[1]; [1]Middle East Technical University (METU), Ankara/Türkiye)

092 **NiRu-based/MXene Hybrid Catalysts: Development for Oxygen Evolution Reactions**
Aktürk, Merve[1]; Browne, Michelle[1]; [1]Helmholtz Young Investigator Group Electrocatalysis: Synthesis to Devices, Berlin/Germany

POSTER SESSION

093 **Probing the role of iridium (III) oxide in oxygen evolution reaction (OER) by in situ XPS**

Ciocci, Paolo[1]; Kurt, Merve2; Czioska, Steffen[1]; Velasco-Velez, Juan Jesus[3]; Huang, Rui[1]; Boubnov, Alexey[4]; Escalera-López, Daniel[5]; Saraçi, Erisa[1]; Cherevko, Serhiy[5]; Grunwaldt, Jan-Dierk[2]; [1]Institute of Catalysis Research and Technology (IKFT), Eggenstein-Leopoldshafen/Germany, [2]Institute of Chemical Technology and Polymer Chemistry (ITCP), Karlsruhe/Germany, [3]Department of Inorganic Chemistry, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin/Germany, [4]Institute of Nanotechnology, Eggenstein-Leopoldshafen/Germany, [5]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

094 **AuxPdy dissolution in 1M HX (X= Cl, Br, I) electrolyte**

Lopes Munhos, Renan[1]; A. Cipriano, Luis[2]; Rossmeisl, Jan[2]; Arenz, Matthias[1]; [1]Department for Chemistry, Biochemistry and Pharmaceutical Sciences, University of Bern, Bern/Switzerland, [2]Department of Chemistry, Center for High Entropy Alloy Catalysis, University of Copenhagen, Copenhagen/Denmark

095 **On the stability of La0.8Sr0.2CoO (LSCO) and CoO oxygen evolution electrocatalysts in alkaline solutions**

Xing, Da[1]; Oliveira, Andre[1]; Zhao, Dongn[2]; Kucklick, Leander[1]; Mertens, Stijn[2]; Hoster, Harry[1]; [1]Universität Duisburg-Essen, Duisburg/Germany, [2]Lancaster University, Bailrigg, Lancaster/Great Britain

096 **Ternary alloys with reduced Ir loading for the oxygen evolution reaction**

Lahn, Leopold[1]; Saveleva, Viktoriia A.[2]; Vorlaufer, Nora[3]; Khanchandani, Heena[3]; Felfer, Peter[3]; Kasian, Olga[1]; [1]Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Erlangen/Germany, [2]The European Synchrotron - ESRF, Grenoble/France, [3]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/Germany

097 **Recycling of cobalt and graphite from spent Li-ion batteries as raw material for oxygen reduction reaction electrocatalyst**

Kazemi, Maryam[1]; Liivand, Kerli[2]; Prato, Mirko[3]; Vacek, Petr[4]; Walmsley, John[4]; Dante, Silvia[3]; Divitini, Giorgio[5]; Kruusenberg, Ivar[2]; [1]University of Duisburg-Essen, Duisburg/Germany, [2]National Institute of Chemical Physics and Biophysics, Estland, [3]Materials Characterization Facility, Istituto Italiano di Tecnologia,Italy, [4]Department of Materials Science and Metallurgy, University of Cambridge, Great Britain, [5]Department of Materials Science and Metallurgy, University of Cambridge, Italy

POSTER SESSION

098 **Innovative Catalyst Strategies for Electrochemical Water Splitting**
Zlatar, Matej[1]; Cherevko, Serhiy[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

099 **Accelerating Real-Time Analysis of Gas Diffusion Electrodes Using Different Coupled Mass Spectrometry Techniques**
Reichmann, Ina[1]; Lloret, Vicent[1]; Ehelebe, Konrad[1]; Cherevko, Serhiy[1]; [1]Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen/Germany

100 **Simultaneous Activation of Different Coordination Sites in Single-Phase FeCoMo3O8 for the Oxygen Evolution Reaction**
Chongyan Hao[1]; Xiaoning Li[1]; Haoliang Huang[1]; Liangbing Ge[1]; Zhengping Fu[1]; Yalin Lu[1]; Yun Wang[1]; Shujun Zhang[1]; Zhenxiang Cheng[1]; [1]Institute for Superconducting and Electronic Materials, University of Wollongong, Australia

101 **Conductivity and Gas Crossover in PEM Electrolyzer: The Role of MEA Conditioning**
Javed, Ali[1]; Treutlein, Leander[1]; Karl, André[1]; Jodat, Eva[1]; Eichel, Rüdiger-A.[1]; [1]Forschungszentrum Jülich GmbH, Fundamentals of Electrochemistry IEK-9, Jülich/Germany

102 **Structural characterization of MEAs in PEM water electrolyzer via XRD and USAXS**
Kiran, Kiran[1]; Wolf, Niklas[1]; Windmüller, Anna[1]; Karl, André[1]; Jodat, Eva[1]; Eichel, Rüdiger-A.[1];[1]Forschungszentrum Jülich GmbH, Fundamentals of Electrochemistry IEK-10, Jülich/Germany

103 **H2 generation in CuO/Cu2O thin films via plasmonic catalysis**
Kumar Ranjan, Ashish[1]; [1]Indian Institute of Technology (BHU), Varanasi/India

104 **Intensified carbon capture and electrolysis**
Gratzl, Raphael[1,2], Philipp Stadler[1], Bastian Etzold[2]; [1]Net Zero Emission Labs GmbH, Rohrdorf/Germany; [2]Friedrich-Alexander-Universität Erlangen-Nürnberg, Power-to-X Technologies, Fürth/Germany

POSTER SESSION

105 **Automated Electrochemical Infrared Reflection Absorption Spectroscopy - Research Showcase Redox-Flow Batteries**
Daniel Schauermann[1], Giovanni Rossetto[1,2], Rosamaria Marrazzo[2], Laura Meda[2], Olaf Brummel[1], Jörg Libuda[1]; [1]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen Center for Interface Research and Catalysis, Erlangen/Germany; 2Eni SpA, NOLAB/C - Physical Chemistry For New Energies & Fusion Laboratories, Novara/Italy

106 **Intermediate State of Dense Ru Assembly Captured by High Temperature Shock for Durable Ampere Level Hydrogen Production**
Cui, Baihua[1]; [1]National University of Singapore, Singapore/Singapore

107 **Understanding and Tuning the Solid Electrolyte Interface in the Electrochemical Lithium-Mediated Ammonia Synthesis**
Herzog, Antonia[1]; Iriawan, Haldrian[1]; Shao-Horn, Yang[1]; [1]MIT Electrochemical Energy Lab, Massachusetts Institute of Technology, Cambridge/USA

108 **Impact of Ti3C2 MXenes synthesis towards electrochemical reactions**
A. Emerenciano, Aline[1]; Browne, Michelle[1]; [1]Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (HZB), Berlin/Germany

109 **Understanding Flooding in Cu-GDE Based CO2 Electrolyzers Via Real Time Mass Spectroscopy**
Sajevic, Urban[1]; Parada Villarroel, Walter Augustin[1]; Nikolaienko, Pavlo[1]; Mayrhofer, Karl[1]; [1]Helmholtz Institute Erlangen-Nürnberg for Renewable Energy (HI ERN), Erlangen/Germany

110 **Understanding the differences between platinum and platinum-alloy catalyst systems for oxygen reduction reaction in PEM fuel cells**
Gatalo, Matija[1]; Tina Đukic[1]; Léonard Jean Moriau[1]; Michal Ronovský[1]; Iva Klofutar[1]; Martin Šala[1]; Luka Pavko[1]; Francisco Javier González López[1]; Francisco Ruiz-Zepeda[1]; Jakub Drnec[1]; Nejc Hodnik[1]; [1]ReCatalyst d.o.o., Ljubljana/Slovenia; [2]National Institute of Chemistry, Ljubljana/Slovenia

111 **CO2 reduction cells using change transport in the vicinity of the catalyst to their advantage**
Schmid, Bernhard[1]; Köllmann, Lina[1]; Tempel, Hermann[1]; Eichel, Rüdiger-A.[1]; [1]Institute of Energy and Climate Research - Fundamental Electrochemistry (IEK-9), Forschungszentrum Jülich GmbH, Jülich/Germany