



PART IV.

GENERAL INFORMATION AND STATISTICS

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Boards, Directors, Max Planck Fellows, External Scientific Members and Guest Scientists

Supervisory Board (as of September 2015)

Prof. Dr. rer. nat. Ferdi SCHÜTH (Chairman 2015/2016)
Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V., München

Hans Jürgen KERKHOFF (Vice-Chairman 2015/2016)
Stahlinstitut VDEh, Düsseldorf

Martin BAUES
Saarstahl AG, Völklingen

Carl DE MARÉ
ArcelorMittal Belgium N.V., Gent, Belgium

Dr.-Ing. h.c. Hans FISCHER
Tata Steel Europe Ltd., Ijmuiden, The Netherlands

Dr. Heribert R. FISCHER
ThyssenKrupp Steel Europe AG, Duisburg

Staatssekretär Dr. Thomas GRÜNEWALD
Ministerium für Innovation, Wissenschaft und Forschung des Landes Nordrhein-Westfalen, Düsseldorf

Prof. Dr.-Ing. habil. Werner HUFENBACH
Technische Universität Dresden, Dresden

Dr.-Ing. Benedikt RITTERBACH
Salzgitter Mannesmann Forschung GmbH, Salzgitter

Univ.-Prof. Dr.-Ing. Ernst M. SCHMACHTENBERG
RWTH Aachen, Aachen

Prof. Dr. rer. nat. Elmar W. WEILER
Ruhr-Universität Bochum, Bochum

MinR Dr. Herbert ZEISEL
Bundesministerium für Bildung und Forschung: Schlüsseltechnologien für Wachstum, Bonn



Scientific Advisory Board (as of September 2015)

Prof. Dr. Hans FERKEL

ThyssenKrupp Steel Europe AG, Duisburg

Prof. Dr. Peter GUMBSCH

Fraunhofer-Institut für Werkstoffmechanik IWM, Freiburg

Prof. Dr. Wolfgang JÄGER

Christian-Albrechts-University (CAU) zu Kiel, Kiel

Prof. Dr. Philippe MARCUS

École Nationale Supérieure de Chimie de Paris, Paris, France

Prof. Dr. Michael John MILLS

Ohio State University, Columbus, USA

Prof. Dr. George PHARR

University of Tennessee, Knoxville, USA

Prof. Dr. Tresa M. POLLOCK

University of California, Santa Barbara, USA

Dr.-Ing. Benedikt RITTERBACH

Salzgitter Mannesmann Forschung GmbH, Salzgitter

Dr. André SCHNEIDER

Vallourec Deutschland GmbH, Düsseldorf

Dr.-Ing. Michael STEINHORST

Tata Steel Research, Ijmuiden, The Netherlands

Dr. Alois STREIßELBERGER

AG der Dillinger Hüttenwerke, Dillingen

Prof. Dr. Adrian SUTTON

Imperial College London, London, UK

Prof. Dr.-Ing. A. Erman TEKKAYA

Technische Universität Dortmund, Dortmund

Prof. Dr. Herman TERRY

Vrije Universiteit Brussel (VUB), Brüssel, Belgium

Dr. Sven VANDEPUTTE

OCAS-Arcelor Research Industry Gent, Zelzate, Belgium

Directors, Max Planck Fellows, and External Scientific Members

Directors:

Prof. Dr. rer. nat. Gerhard DEHM (since Oct 2012)

Prof. Dr. rer. nat. Jörg NEUGEBAUER (since Nov 2004)

Prof. Dr.-Ing. Dierk RAABE (since Jul 1999) *

Prof. Dr. rer. nat. Martin STRATMANN (since Jan 2000 / on leave)

* Chief Executive since 29 Sep. 2010

Max Planck Fellow:

Prof. Dr.-Ing. Gunther EGgeler, Ruhr-Universität Bochum (until May 2015)

Prof. Jochen M. SCHNEIDER, Ph.D., RWTH Aachen (since Oct 2015)

External Scientific Member:

Prof. Dr. Mats HILLERT, Stockholm, Sweden

Prof. Dr. Reiner KIRCHHEIM, Göttingen



Guest Scientists

Alexander von Humboldt-Foundation

Dr. Theodoros Baimpos (Greece), University of Patras/GR, Humboldt Research Fellowship for Postdoctoral Researchers; Nov 2013 to Sep 2015

Dr. Chang-Hyuck Choi (South Korea), Korean Advanced Institute of Science and Technology/KR, Humboldt Research Fellowship for Postdoctoral Researchers; May 2015 to Apr 2017

Prof. Dr. Mike Finnis (UK), Imperial College London/UK, Humboldt Research Award; Jul to Aug 2014 and Aug to Sep 2015

Dr. Raheleh Hadian (Iran), McMaster University/CA, Humboldt Research Fellowship for Postdoctoral Researchers; Mar 2015 to Feb 2017

Dr. Rong Hu (China), Tsinghua University/CN, Humboldt Research Fellowship for Postdoctoral Researchers; Aug 2014 to Jul 2016

Dr. Olga Kasian (Ukraine), Ukraine State University of Chemical Technology/UA, Humboldt Research Fellowship for Postdoctoral Researchers; Apr 2015 to Mar 2017

Dr. Jinkyung Kim (Korea), Pohang University of Science and Technology (POSTECH)/KR, Humboldt Research Fellowship for Postdoctoral Researchers; Jun 2013 to Feb 2016

Prof. Sharvan Kumar (USA), Brown University, Providence, MA, Humboldt Research Award; Oct 2015

Dr. Gerard Leyson (Philippines), Brown University/USA, Humboldt Research Fellowship for Postdoctoral Researchers; Jan 2014 to Dec 2015

Dr. Jianjun Li (China), The University of Hongkong/CN, Humboldt Research Fellowship for Postdoctoral Researchers; Apr 2015 to Mar 2017

Dr. Sumantra Mandal (India), Indira Gandhi Centre for Atomic Research/IN, Humboldt Research Fellowship for Postdoctoral Researchers; Apr 2012 to Mar 2014

Dr. Ross Marceau (Australia), The University of Sydney/AU, Humboldt Research Fellowship for Postdoctoral Researchers; Jul 2011 to Jun 2013

Dr. Chris Race (UK), Imperial College London/UK, Humboldt Research Fellowship for Postdoctoral Researchers; Sep 2011 to Feb 2013

Prof. Roger Reed (UK), University of Oxford/UK, Humboldt Research Award; since Nov 2012

Prof. Paulo Rios (Brazil), Universidade Federal Fluminense (UFF)/BR; Humboldt Research Award; Dec 2015 to Feb 2016

Dr. Sang Yong Shin (Korea), Pohang University of Science and Technology (POSTECH)/KR, Humboldt Research Fellowship for Postdoctoral Researchers; Apr 2012 to Jul 2013

Dr. Michael Titus (USA), University of California, Santa Barbara/US, Humboldt Research Fellowship for Postdoctoral Researchers; Dec 2015 to Nov 2017

Dr. Han Zhang (China), Tsinghua University/CN, Humboldt Research Fellowship for Postdoctoral Researchers; Jan 2012 to Dec 2013

Dr. Kahl Zilnyk, (Brazil), Escola de Engenharia de Lorena, University of São Paulo (EEL-USP)/BR, Humboldt Research Fellowship for Postdoctoral Researchers; Dec 2015 to Feb 2016

German Academic Exchange Service (DAAD)

Dmitry Aksenov (Russia), Belgorod State University/RU, German Academic Exchange Service (DAAD); Oct 2013 to Oct 2014

Ying-Hsuan Chen, M.Sc. (Taiwan), Ruhr-Universität Bochum, German Academic Exchange Service (DAAD); Oct 2014 to Sep 2017

Won Seok Choi, M.Sc. (Korea), Pohang University of Science and Technology (POSTECH)/KR, German Academic Exchange Service (DAAD); Apr 2015 to Mar 2016

Amlan Das, M. Sc. (Spain), UPC Barcelona/ES, DAAD scholarship, May to Jul 2015

Dr. Irina Fedorova (Russia), Belgorod State National Research University/RU, German Academic Exchange Service (DAAD); Oct 2014 to Jul 2015

Brennan Ferguson (USA), B.Sc., Alfred University, Alfred, N.Y./US, Research Internships in Science and Engineering (RISE) – German Academic Exchange Service (DAAD); May to Aug 2014

Hubby Izzudin, M.Sc. (Indonesia), Ruhr-Universität Bochum, German Academic Exchange Service (DAAD); May 2010 to Apr 2015

Ju-Heon Kim, M.Sc. (Korea), Korea Institute of Science and Technology (KIST)/KR, German Academic Exchange Service (DAAD); Mar to Aug 2014

Raul Sánchez Martín, M.Sc. (Spain), Carlos III University of Madrid/ES, German Academic Exchange Service (DAAD); Jun to Aug 2014

Tiesheng Wang, M.Sc. (China), Imperial College London/UK, German Academic Exchange Service (DAAD) Rise Research Internship; Jul to Sep 2013

Fuqiang Zhai, M. Sc. (Spain), UPC Barcelona/ES, DAAD scholarship, Jan to Mar 2015

Chaoyi Zhu, B.Sc. (China), Imperial College London/UK, German Academic Exchange Service (DAAD) Rise Research Internship; Jul to Sep 2014

Diverse Guest Scientists

Björn Alling (Sweden), Linköping University/SE ; Mar 2015 to Dec 2018

Alvaro David Soliz Ayala, M.Eng. (Chile), University of Antofagasta/CL, BECAS-CHILE scholarship for PhD exchange; Feb to Sep 2014

Maria Roca Ayats, M.Sc. (Spain), Instituto de Catálisis y Petroleoquímica/ES; Sep 2015 to Dec 2016

Xiaoxia Bai (China), Chinese Academy of Sciences/CN; 2012 to 2013

Prof. Xavier Banquy (Canada), University of Montreal/CA; Nov 2013 to Dec 2013

Jake T. Benzing, M.Sc. (USA), Vanderbilt University/US, funded by DFG SFB 761 ,Stahl *ab initio*'; Jul to Aug 2014; Jul to Aug 2015

Sedigheh Bigdeli (Sweden), KTH Royal Institute of Technology/SE; Sep to Oct 2015

Prof. John Blendell (USA), Purdue University/US; Dec 2013 to Jan 2014

Mandi Buffon, BS (USA), University of California, Santa Barbara/US; Apr to May 2015

Arcadio Varona Caballero, M. Sc. (Spain), IMDEA Materials/ES; Sep to Dec 2015

Yanhong Chang, M.Sc. (China), Sichuan University/CN, China Scholarship Council (CSC); Oct 2015 to Sep 2019

Dr. Dominique Chatain (France), CINaM - University of Marseille/FR, Mar 2015

Ran Chen, B.Sc. (China), Shanghai Jiao Tong University (SJTU)/CN, China Scholarship Council (CSC); Feb 2015 to Jan 2017

Prof. Chiafu Chou (Taiwan), Institute of Physics, Academia Sinica/TW; Dec 2013

Dr. Oana Cojocaru-Mirédin (Romania), RWTH Aachen/DE; since Sep 2015

Dr. Masahiko Demura (Japan), National Institute of Materials Science (NIMS)/JP; Aug 2012 to Aug 2013

Dr. Andrew Duff (UK), IKZ Berlin/DE, EU-Project Sinople; Aug 2012 to Jul 2013

Maxwell Frost (UK), University of Cambridge/UK, Jul to Aug 2014

Noriki Fujita, M.Sc. (Japan), JFE Steel Corp. Fukuyama/JP; Sep 2013 to Dec 2015

Nayyeri Ghazal, M.Sc. (Iran), University of British Columbia/US; Nov 2013 to Jan 2014

Georgia Gobbi (Italy), University Politecnico di Milano/IT; Apr to Oct 2014

Umit Guder, M.Sc. (Turkey), Çanakkale Onsekiz Mart University/TR, Turkey-based "TUBITAK scholarship; May to Oct 2014

Nima Hamidi, M.Sc. (Iran), Sharif University of technology/IR, Aachen institute for advanced study in Computational Engineering Science (AICES)/DE; Sep 2008 to Apr 2014

Prof. Carol Handwerker (USA), Purdue University/US; Dec 2013 to Jan 2014

Prof. Tarek Hatem (Egypt), British University in Egypt/EG, German Egyptian Research Short Term Scholarship (GERSS) of DAAD; Oct to Dec 2014

Prof. Sang Ho Oh (South Korea), Pohang University of Science and Technology/KR; Aug 2014

Prof. Toshiaki Horiuchi (Japan), Hokkaido University of Science/JP; Apr 2013 to Mar 2014, Jul to Aug 2015

Qingyun Hu, M. Sc. (China/Germany), Ruhr-Universität Bochum, RESOLV/DE, Apr 2014 to Mar 2017

Dr. Liam Huber (Canada), University of British Columbia/USA; May to Jul 2013 and May to Jun 2014

Dr. Peter J. Imrich (Austria), Montanuniversität Leoben/AT; Mar 2013 to May 2015

Dr. José A. Jiménez (Spain), Universidad Madrid and CENIM/ES; Feb 2014

Primoz Jovanovic, B.Sc. (Slovenia), National Institute of Chemistry/SI; Oct 2014 to Mar 2015

Selin Karaca (Turkey), Anadolu University/TR; Erasmus scholarship; Jun to Sep 2014

Dr. Dong-Ik Kim (Korea), Korea Institute of Science and Technology (KIST)/KR; Oct 2013 to Jan 2014

Tobias Kleinig (Germany), Universität der Bundeswehr München/DE; Jul to Sep 2013

Dr. Pradeep Konda Gokuldoss (India), RWTH Aachen/DE; May 2014 to Apr 2016

Peter Konijnenberg, Dipl.-Ing. (The Netherlands), Bruker Nano GmbH/DE; Jan 2014 to Dec 2016

Karoline Kormout (Austria), Erich Schmid Institute of Material Science/AT; Jul 2015

Dr. Aleksander Kostka, (Poland), Ruhr-Universität Bochum/DE; Oct 2014 to Sep 2015

Dr. Motomichi Koyama (Japan), National Institute of Materials Science (NIMS)/JP, University of Tsukuba/JP; May 2012 to May 2014, Aug 2015

Prof. Maciej Krzywiecki (Poland), Silesian University of Technology/PL; Jun to Aug 2013; Apr to Jul 2014; Nov 2014; May to Jun 2015



Alisson Kwiatkowski da Silva, M.Sc. (Brazil), Universidade Estadual de Ponta Grossa, UEPG (State University of Ponta Grossa)/BR, Brazilian Government (Science Without Borders); Apr 2015 to Mar 2018

Minjie Lai, M.Sc. (China), Northwestern Polytechnical University/CN, China Scholarship Council (CSC); Aug 2012 to Aug 2016

Babs Lemmens, M.Sc. (Belgium), Ghent University/BE; Apr to Jul 2015, Oct 2015 to Feb 2016

Juan Li, M. Sc. (China), University of Science and Technology/CN, CSC scholarship; since Oct 2015

Chuanlai Liu, M.Sc. (China), Shanghai Jiao Tong University (SJTU)/CN, China Scholarship Council (CSC); Oct 2015 to Sept 2017

Wei Luo, M. Sc. (China), Central South University/ CN, CSC scholarship; since Nov 2014

Yizhong Luo (China), Chinese Academy of Sciences/ CN; 2013 to 2015

Jassel Majeবাদia (UK), Imperial College London/UK; Jul to Aug 2013

Florence Malier, B.Sc. (France), Ecole Nationale Supérieure des Mines de Saint-Etienne/FR; Jun 2013 to Aug 2014

Philip McKeown (UK), University of Cambridge/UK, Jul to Aug 2015

Dr. Fabricio Souza Mendes (Brazil), Conselho Nacional de Desenvolvimento Científico e Tecnológico – CNPq/BR, Brazilian Government (Science Without Borders); Nov 2012 to Oct 2013

Stefan Mezzavilla, B.Sc. (Germany), Max-Planck-Institut für Kohlenforschung/DE; Apr to Dec 2014

Jesus Mondragon Ochoa, M.Sc. (Mexico), Ruhr-Universität Bochum/DE, CONACYT; Oct 2013 to Sept 2016

Lucia Morales-Rivas, M.Sc. (Spain), Department of Physical Metallurgy, CENIM-CSIC/ES; Spanish Ministry of Science and Innovation; Sep to Nov 2014

Fang Niu, M.Sc. (China), Ruhr-Universität Bochum/ DE, RESOLV; Oct 2013 to Sep 2016

Yaprak Özman (Turkey), Anadolu University/TR; Erasmus scholarship; Jun to Sep 2014

Beibei Pang, M.Sc. (China), RESOLV/DE, Jul 2014 to Jun 2017

Dr. Nokeun Park (Japan), Kyoto University/JP; May to Jun 2014

Prof. Eun Soo Park (Korea), Seoul National University/KR; Jun to Jul 2015

Luanna Silveira Parreira, M.Eng. (Brazil), Universidade Federal do ABC (UFABC)/BR, Fapesp scholarship for PhD exchange; Jul 2014 to Mar 2015

Andreea Paunoiu (France), Ecole Nationale Supérieure de Chimie, Lille; June to Aug. 2013

Zongrui Pei (China), AICES/DE; Mar 2012 to May 2015

Dr. Yuan Ping (USA), California Institute of Technology – Caltech, Pasadena, CA; March 2015 to Dec. 2016

Soni Purvesh (India), RWTH Aachen/DE; since Sep 2015

Adam Ready (UK), Imperial College London/UK; May 2015

Nikolas Rivas, M. Sc. (Belgium), University of Ghent/ BE; Aug to Oct 2015

Dr. Patricia Romano (The Netherlands), Tata Steel Research & Development/NL; Sep 2013 to Aug 2014

Dr. Ryoji Sahara (Japan), NIMS/JP; Jul 2015 to Jun 2016

Dr. Maria Sandim (Brazil), Escola de Engenharia de Lorena, University of São Paulo (EEL-USP)/BR, Lorena; Sep 2013; Sep 2014; May 2015

Prof. Hugo Sandim (Brazil), Escola de Engenharia de Lorena, University of São Paulo (EEL-USP)/BR, Lorena; Sep 2013; Sep 2014; May 2015

Dr. Stefanie Sandlöbes (Germany), RWTH Aachen/ DE; since Aug 2015

Dr. Hideaki Sawada (Japan), Nippon Steel/JP; Feb to May 2013

Marina Schwan, M.Sc. (Germany), RWTH Aachen/ DE; Feb 2014 to Jan 2015

Dr. Torsten Schwarz (Germany), RWTH Aachen/DE; since Sep 2015

Dr. Pratheek Shanthraj, (India), North Carolina State University/US; Aachen institute for advanced study in Computational Engineering Science (AICES)/DE; Jun 2014 to Jun 2016

Luv Sharma, M.Sc. (India), M2i and TU Eindhoven/ NL; Apr to Sep 2015

Prof. Reinhard Sigel (Egypt), German University in Cairo/EG; Jul 2015

Andreas Stoffers, M.Sc. (Germany), RWTH Aachen/ DE; since Sep 2015

Benjamin Sutherland (UK), University of Cambridge/ UK; Jul to Aug 2015

Prof. Bob Svendsen (USA/Germany), RWTH Aachen/DE; since Mar 2012



Ogawa Takuro, M.Sc. (Japan), Kyushu University/JP, Aug to Sep 2015

Dr. Shunsuke Taniguchi (Japan), Nippon Steel & Sumitomo Metal Corporation/JP; since Mar 2015

Oliveira Verona, M.Sc. (Brazil), EEL-USP/BR, scholarship of the Brazilian Government, CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior); Mar to Oct 2013

Xiaodong Tan, M.Sc. (China), Northeastern University/CN; China Scholarship Council (CSC); Oct 2015 to Sep 2019

Dr. Moritz to Baben (Germany), RWTH Aachen/DE; Jan 2014 to Jan 2015

Yuki Toji, M.Sc. (Japan), JFE Steel Corp. Fukuyama/JP; Jul 2011 to Jun 2013

Dr. Bernhard Völker (Austria), KAI Kompetenzzentrum Automobil- u. Industrieelektronik GmbH/AT; Oct 2012 to Sep 2014

Dr. Marton Vörös (USA), Argonne National Laboratory/US; Feb 2014 to Dec 2015

Dr. Alexander Wimmer (Austria), KAI Kompetenzzentrum Automobil- u. Industrieelektronik GmbH, Villach, Nov 2012 to Nov 2014

Prof. Jim Wittig (USA), Vanderbilt University/US; funded by DFG SFB 761 'Stahl *ab initio*'; Jul to Aug 2014; Jul to Aug 2015

Yinghua Xin (China), Central South University/CN; Sep 2015 to Sep 2016

Dr. Lei Yang (China), State Key Lab of Crystal Materials/CN; May 2014 to Apr 2015

Olgun Yilmaz (Turkey), Middle East Technical University/TR, Erasmus scholarship; Jun to Sep 2014

Suhyun Yoo (South Korea), RESOLV/DE; Mar 2015 to Oct 2016

Jiecen Zhang, M.Sc. (China), Northeastern University/CN, China Scholarship Council (CSC); Oct 2015 to Sep 2016

Huan Zhao, M.Sc. (China), Chongqing University, Chongqing; China Scholarship Council (CSC); Oct 2014 to Sep 2019

Tianyi Zhou (UK), University of Cambridge/UK, Jul to Aug 2014

Rachel Zucker (USA), Massachusetts Institute of Technology (MIT)/US; Apr to Jun 2014 & Feb to Apr 2015



Scientific Honours

2013

Fady Archie won the Science Slam “FameLab NRW”, Mar 2013

Jennifer Baseler received the Apprentice Prize of the IHK Düsseldorf, Oct 2013

The Gesellschaft für Materialographie Rhein-Ruhr gmr², established by *Angelika Bobrowski* and *Heidi Bögershausen*, was awarded the Metallographie-Preis 2013 of the DGM, Friedrichshafen (Germany), Sep 2013

Heidi Bögershausen, *Herbert Faul* and *Achim Kuhl* received honours from the IHK Düsseldorf for outstanding achievements in personal training, Nov 2013

Dr. Serhiy Cherevko received the ISE Electrochimica Acta Award, awarded in Mexico at the ISE annual meeting 2013

Dr. Oana Cojocaru-Mirédin won the Ernst-Haage Award of the Max Planck Institute for Chemical Energy Conversion (MPI-CEC, Mülheim a.d. Ruhr), Dec 2013

Prof. Gerhard Dehm became a member of the Board of Governors of Acta Materialia, Inc, May 2013

Prof. Gerhard Dehm obtained the Controlled Substance Award for Conferee Most Addicted to ECI Conferences at Composites at Lake Louise 2013, Alberta (Canada), Nov 2013

Dr. Martin Friák received the Poster Award 1st price at the the Euro BioMat 2013 conference in Weimar, Germany, Apr 2013

Peter J. Imrich obtained a Best Poster Award at the ECI 2013 conference in Olhao (Portugal), Oct 2013

Dr. Ioannis Katsounaros received an outgoing Marie-Curie Fellowship for a research stay at the Argonne National Laboratory, US, and the Leiden University, NL, for a total of 3 years (2013)

Dr. Björn Lange received the Otto-Hahn Medal of the Max Planck Society in Jun 2013

Dr. Duancheng Ma won the Borchers Plakette of the RWTH Aachen, Jun 2013

Vera Marx obtained a Best Poster Award at the ECI 2013 conference in Olhao (Portugal), Oct 2013

Dr. Karl Mayrhofer received the Science Award Electrochemistry 2013 sponsored by BASF and VW

Paul Neddermann received the Springorum-Denkmünze, Jul 2013

Jens Nellessen received the Springorum-Denkmünze, Jul 2013

Bastian Philippi obtained a Best Poster Award 1st Prize at the GDRi CNRS Mecano General Meeting in Düsseldorf (Germany), Jul 2013

Dr. Anna Schuppert participated in the 63rd Lindau Nobel Laureate Meetings in Jun 2013

Dr. Mira Todorova received the Best Poster Award of the Calphad Conference in San Sebastian, May 2013

Dr. Angel Topalov received the Förderpreis der GDCH for the best work in electrochemistry of a junior researcher in 2013

2014

Dr. Theodoros Baimpos received the IUMRS-ICYRAM 2014 Poster Award in Oct 2014

Dr. Poulumi Dey received a Best Poster Award at the Asia-Sweden meeting on understanding functional materials from lattice dynamics conference, Indian Institute of Technology Guwahati, India, Jan 2014

Dr. Blazej Grabowski got an ERC Starting Grant of the European Research Council (European Union's Horizon 2020 research and innovation programme (grant agreement No 639211) in 2014



Jan-Philipp Grote received the Springer/Hysa Poster Award in Oct 2014

Dr. Wei Guo received a best poster award at the MRS Fall Conference, Dec 2014

Dr. Wei Guo received the „2014 Chinese Government Award for Outstanding Self-financed Students Abroad“, 2014

Dr. Nejc Hodnik got a Marie-Curie Intra-European Fellowship „EiWBinsTEM— Development of electrochemical water based in-situ TEM and study of platinum based nanoparticles potential- and time-dependent changes“, Apr 2014

Qingyun Hu received a IUMRS-ICYRAM 2014 Poster Award in Oct 2014

Minjie Lai received the best student poster on the 3rd International Workshop on Physics-Based Modelling of Material Properties and Experimental Observations with special focus on Plasticity and Creep, Jun 2014

Dr. Karl Mayrhofer won the Dechema-Preis der Max-Buchner-Forschungsstiftung, Nov 2014

Dr. Josef Meier received the „Förderpreis der GDCh-Fachgruppe Nachhaltige Chemie“, Sept 2014

Georgios Polymeros received the Ballard CSC (Canadian Society of Chemistry) Poster Prize 2014

Prof. Dr.-Ing. Dierk Raabe became member of the „Akademie der Wissenschaften Leopoldina“ (Sektion 27, Technikwissenschaften), Mar 2014

Prof. Dr.-Ing. Dierk Raabe became Facultaire Honorary Professor at Katholieke Universiteit Leuven (KU Leuven), Department of Materials Engineering, Nov 2014

Prof. Dr.-Ing. Dierk Raabe renewed his membership of the German Council of Science and Humanities (Wissenschaftsrat), 2014-2016

Dr. Anna Schuppert won an outgoing post-doc research fellowship of the French Embassy 2014

Torsten Schwarz received the E-MRS Graduate Student Award, May 2014

Dr. Pratheek Shanthraj got an AICES postdoctoral fellowship starting in Jul 2014

Halil Sözen received a Merkle Scholarship for “First principles calculations for complex magnetic materials”, Sep 2014

Dr. Frank Stein became a member of the editorial board of the journal *Intermetallics*, Jan 2014

Thomas Utzig received the CAI-STEM SFA 2014 Poster Award in Aug 2014

Dr. Markus Valtiner got the „Max-Buchner-Forschungsstipendium“ starting in Jul 2014

Ashokanand Vimalanandan won the Young Author’s EFC Poster Prize in Oct 2014

Dr. Alexander Wimmer received the Award of Excellence from the Austrian Federal Ministry of Science, Vienna (Austria), Dec 2014

Dr. Stefan Wippermann is one of the winners of the BMBF NanoMatFutur competition setting a group on “Semiconducting nanocomposites with tailored optical and electronic properties” in Jan 2014

Dr. Claudio Zambaldi won a poster award at the 17th International Conference on Textures of Materials ICOTOM, Aug 2014

2015

Dr. Pascal Beese participated in the 65th Lindau Nobel Laureate Meetings in Jun 2015

Dr. Pascal Beese won the Leopoldina Preis für junge Wissenschaftler, Nov 2015

Dr. Pascal Beese got the „Deutscher Studienpreis – Körber Stiftung“, Nov 2015

Christian Broß won the best poster prize at the Mikpräp Fachtagung 2015

Christian Broß won the Apprentice Prize of the Max Planck Society, Jul 2015

Su-Ting Cheng received a Best Poster Award at the Faraday Discussions Corrosion Chemistry Meeting of the Royal Society of Chemistry, Apr 2015

Dr. Peter J. Imrich’s talk at the Nanobrücken 2015 workshop was awarded as ‘Best Student Talk’, Potsdam, Apr 2015



Dr. Christoph Kirchlechner became member of the Beamtime Review Panel of the BESSY synchrotron source, Oct 2015

Dr. Fritz Körmann received a DFG Research Fellowship “Ab-initio-Studie zu High Entropy Alloys: Grundzustands- und darüber hinausgehende Eigenschaften“, May 2015

Dr. Sergiy Merzlikin received a Paper Award in Metallurgical Research and Technology “Prove of hydrogen formation through direct potential measurements in the rolling slit during cold rolling“, Apr 2015

Dr. Alena Michalcová received the “1st Place according to expert public – vox populi” in the Competition “The most beautiful colour or black-and-white micrograph of non-ferrous metals” at the Aluminum and non-ferrous Metals 2015 Conference, Bystrice nad Pernštejnem, Czech Republic, Oct 2015

Dr. Alena Michalcová received the “3rd Place according to expert committee” in the Competition “The most beautiful colour or black-and-white micrograph of non-ferrous metals” at the Aluminum and non-ferrous Metals 2015 Conference, Bystrice nad Pernštejnem, Czech Republic, Oct 2015

Lutz Morsdorf got a Postdoctoral Fellowship for North American and European Researchers from (JSPS), Feb 2015

Nicolas Peter received the ‘Best Talk Award - 3rd Place’ at the INASCON, Basel (Switzerland), Aug 2015

Jiali Zhang received the 3rd best Poster Award at the GDRI CNRS Mecano General Meeting at MPIE, Jul 2015



Participation in Research Programmes

National:

BMBF

„Combinatorial electrocatalytic CO₂ reduction (ECCO₂)“, BMBF - „Technologies for Sustainability and Climate Protection“, Oct 2011 - Sep 2016

„MANGANESE – mechanistic investigations of model and applied electrodes for the oxygen evolution.“, BMBF, May 2015 – Apr 2019

„NeKat – New electrocatalysts for application in automotive fuel cell stacks“, BMBF, Nov 2011 – Nov 2014

„Novel corrosion protection coatings compatible with hot forming (KoWUB)“, BMBF, May 2012 – Apr 2015

„Optimizing solar cell efficiency based on 3-dimensinal chemical analysis on the atomistic scale (Optimierung des Wirkungsgrades von Solarzellen basierend auf 3-dimensionalen chemischen Analysen auf atomarer Skala)“, BMBF NanoMatFutur, Feb 2013 – Jan 2017

„RADIKAL - Resource-saving material substitution by additive & intelligent FeAl material concepts adapted for light and functional building“, BMBF MatRessource, Feb 2013 – Jan 2016

„RAVE-K - Ressource friendly design for precious metal containing switch materials for low voltage applications“, BMBF MatRessource, Jun 2013 – May 2016

„Semiconducting nanocomposites with tailored optical and electronic properties (NanoSolar)“, BMBF NanoMatFutur, Jan 2014 – Dec 2017

BMW

„Development of novel high temperature proton exchange membrane (HTPEM) fuel cells with improved degradation behavior“, Zentrales Innovationsprogramm Mittelstand – ZIM, BMWi, Jan 2015 – Nov 2017

DFG

DFG Priority Programmes & Collaborative Research Centres

„*Ab initio* study on the coupling of lattice and magnetic degrees of freedom and the role of interfaces in magneto-caloric materials“, DFG Priority Programme - SPP1599: Caloric effects in ferroic materials: New concepts for cooling, Oct 2012 – Dec 2016

„Design and Generic Principles of Self-Healing Materials“, DFG SPP 1568, May 2014 – Dec 2017

„From Atoms to Turbine Blades – a Scientific Approach for Developing the Next Generation of Single Crystal Superalloys“, DFG SFB/Transregio 103, Jan 2012 – Dec 2015

„Heapocrates: Healing Polymers for preventing Corrosion of Metallic Systems“, DFG Priority Programme - SPP 1568: Design and Generic Principles of Self-Healing Materials, May 2011 – Apr 2014

„Investigation and enhancement on bonding by cold bulk metal forming processes“, DFG Priority Programme - SPP 1640: Joining by Plastic Deformation, Nov 2012 – Dec 2015

„Quantum mechanically guided design of ultra strong glasses, DFG Priority Programme - SPP 1594: Topological Engineering of Ultra-Strong Glasses“, Jul 2012 – Dec 2016

„Mechano-chemical coupling during precipitate formation in Al-based alloys“, SPP 1713: Strong Coupling of Thermo-Chemical and Thermo-Mechanical States in Applied Materials, Sep 2014 – Aug 2017

„Metal oxide nanostructures for electrochemical and photoelectrochemical water splitting“, SPP 1613, Oct 2015 – Sep 2018

„Modeling bainitic transformations during press hardening“, SPP 1713: Strong Coupling of Thermo-Chemical and Thermo-Mechanical States in Applied Materials, Sep 2014 – Aug 2017



„Nanostructured Hierarchical Oxide Photoelectrodes for Photoelectrochemical Water-Splitting“, DFG Priority Programme - SPP 1613: Regeneratively Produced Fuels by Light Driven Water Splitting: Investigation of Involved Elementary Processes and Perspectives of Technologic Implementation, Apr 2014 – Sep 2018

„Regeneratively Produced Fuels by Light Driven Water Splitting: Investigation of Involved Elementary Processes and Perspectives of Technologic Implementation“, DFG SPP 1613, Oct 2015 – Sep 2018

„Steel - *Ab Initio*. Quantum Mechanics Guided Design of New Fe-based Materials“, DFG SFB 761, 1st period: July 2007 – June 2011, 2nd period: Jul 2011 – Jun 2015, 3rd period: Jul 2015 – Jun 2019

Projects at MPIE in frame of SFB 761:

- A 02 *Ab initio* thermodynamics und kinetics in the Fe-Mn-Al-C system, Jul 2007 – Jun 2019
- A 07 Microstructure mechanics and fundamentals of concurrent twinning and martensite formation, Jul 2007 – Jun 2019
- A 09 *Ab initio* based mesoscale simulation of hydrogen embrittlement, Jul 2011 – Jun 2019
- B 07 Synthesis and characterization of Reference Materials, Jul 2011 – Jun 2015
- C 01 Microstructure analytics, Jul 2015 – Jun 2019
- C 04 Fatigue, damage and stress corrosion cracking under cyclic loading, Jul 2007 – Jun 2019
- C 08 3D atomic analysis of the local chemical composition by atom probe tomography, Jul 2011 – Jun 2019
- C09 Deformation mechanisms and local residual stresses in the system Fe-Mn-C, Jul 2011 – Jun 2015
- C 10 Deformation behavior of multi-phase steels, Jul 2015 – Jun 2019
- T4: Wasserstoff-Karbid-Wechselwirkung Jul 2015 – Jun 2018

„Synthetic dental composite materials inspired by the hierarchical organization of shark tooth enameloid“, DFG Priority Programme - SPP 1420: Biomimetic Materials Research: Functionality by Hierarchical Structuring of Materials, Aug 2013 – Dec 2015

„Tailored Disorder – A Science- and Engineering-Based Approach to Materials Design for Advanced Photonic Applications“, DFG SPP 1839, Jul 2015 – Dec 2018

„Thermo-chemo-mechanical coupling during thermomechanical processing of microalloyed steels“, DFG Priority Programme - SPP 1713: Strong Coupling of Thermo-Chemical and Thermo-Mechanical States in Applied Materials, Jun 2014 – Dec 2017

„Understanding the role of trigger signal spreading, release rate of suitable active agents and their transport rate for optimal healing in extrinsic self-healing materials“, DFG Priority Programme - SPP 1568: Design and Generic Principles of Self-Healing Materials, May 2014 – Jun 2017

DFG Research Grants

„*Ab initio* determination of free energies and derived properties (heat capacities, vacancies, solvus boundaries) for selected Al alloys containing Si, Mg and Cu“, DFG Research Grant, Jan 2010 – Feb 2016

„Deformation via the Transformation of Hierarchical Microstructures“, DfG Research Grant, Apr 2014 – Jun 2014

„Fine-scaled lamellar Fe-Al *in situ* composites: Microstructure and mechanical properties“, DFG Research Grant, Jan 2013 – Dec 2015

„Identification and overcoming of loss mechanisms in nanostructured hybrid solar cells - pathways towards more efficient devices.“, DFG, Apr – Dec 2014

„Materials World Network: Fundamentals of Peptide Materials - Experimental and Simulation Probes“, DFG - NSF Materials World Network, Jan 2014 – Dec 2016

„Mechanisms of self and impurity diffusion in Fe-Al intermetallic compounds“, DFG research Grant, Sep 2010 – Mar 2015

„Microbiological corrosion induced by highly aggressive sulphate-reducing-bacteria“, DFG, SRB, Oct 2011 – Jul 2015



„Study of grain-boundary-dislocation interactions by advanced *in situ* μ Laue diffraction“, DFG Research Grant, Jan 2015 – Dec 2017

„The effective pH at the solid-liquid interface and the local ion distribution during complex electrochemical reactions“, DFG Research Grant, Jan 2014 – Aug 2015

„Understanding Grain Boundary Migration - Theory Meets Experiment“, DFG Support for Scientific Meeting, Jan – Dec 2015

„Understanding the role of dislocation distribution(s) on the slip transfer across twin-boundaries“, DfG, Aug 2015 - Dec 2016

DFG Cluster of Excellence

„Electrochemistry on „dry surfaces“: electrode potential and structural order in nanoscopic electrolyte layers“, DFG Cluster of Excellence 1069 RESOLV (Ruhr Explores Solvation), Aug 2013 – Jan 2015

„Probing the molecular structure of extended solvated surfaces and interfaces“, DFG Cluster of Excellence 1069 RESOLV (Ruhr Explores Solvation), Mar 2014 – Feb 2017

„Vibrational spectroscopy of solvent during electrode polarisation and electrochemical reactions on germanium electrodes with and without metal films“, DFG Cluster of Excellence 1069 RESOLV (Ruhr Explores Solvation), Oct 2013 – Mar 2015.

„Zinc oxide – water interfaces: interaction-driven structural evolution“, DFG Cluster of Excellence 1069 RESOLV (Ruhr Explores Solvation), Feb 2015 – Jul 2016

Max Planck Society

„Active coatings for corrosion protection- Aktive Schichten für den Korrosionsschutz (ASKORR)“ – MPG – FhG cooperation, May 2010 – Apr 2013

„Advanced Alloy and Process Design for laser Additive Manufacturing of Metals“, MPG - FhG cooperation, Apr 2015 – Mar 2018

„Early detection of material wear in high-precision machine tools – Initial wear“, MPG - FhG cooperation, Jan 2014 – Dec 2016

„International Max Research School (IMPRS) for Surface and Interface Engineering in Advanced Materials (SurMat)“, Max Planck Society, Jan 2010 – Dec 2015

MaxNet Energy, Research Cooperation, Max Planck Society, Jan 2014 – Dec 2018

State of North Rhine-Westphalia

„High-pressure Fe–Al steam turbine blade - Development of a processing route for fabrication of a highpressure iron aluminide steam turbine blade“, progress.nrw, Aug 2012 – Sep 2015

International:

Christian Doppler Society

Christian Doppler Laboratory “Diffusion and segregation mechanisms during production of high strength steel sheet” (original title: “Diffusions- und Segregationsvorgänge bei der Produktion hochfesten Stahlbands“) Jan 2008 – Dec 2014

European Union

European Research Council

„Adaptive nanostructures in next generation metallic materials: Converting mechanically unstable structures into smart engineering alloys (SMARTMET)“, ERC Co-Investigator Grant of the European Research Council, FP7, Feb 2012 – Jan 2017



„Time-scale bridging potentials for realistic molecular dynamics simulations-TIME-BRIDGE“, ERC Starting Grant of the European Research Council, Horizon 2020, Jul 2015 – Jun 2020

Marie Curie Actions

„Development of electrochemical water based in-situ TEM and study of platinum based nanoparticles potential- and time-dependent changes (EIWBinsTEM)“, Marie Curie Intra European Fellowship (FP7), Apr 13 – Mar 2016

„Soft Matter at Aqueous Interfaces (SOMATAI)“, Marie Curie Initial Training Network (FP7), Oct 2012 – Sep 2016

Collaborative Projects (FP7 and Horizon 2020)

„Accelerated Metallurgy - the accelerated discovery of alloy formulations using combinatorial principles (AccMet)“, Collaborative project, FP7, Jun 2014 – Jun 2016

„AlGaInN materials on semi-polar templates for yellow emission in solid state lighting applications (ALIGHT)“, Collaborative Project, FP7, Jun 2012 – May 2015

„Enhanced Power Pilot Line – EPPL“, ENIAC Joint Undertaking, FP7, May 2013 – Mar 2016

„Enhanced substrates and GaN pilot lines enabling compact power applications – PowerBase“, The ECSEL Joint Undertaking, FP7, May 2015 – Apr 2018

„Fuel Flexible, Near -Zero Emissions, Adaptive Performance Marine Engine – HERCULES 2“, Horizon 2020, May 2015 – Apr 2018

RFCS

„Advanced zinc-based hot dip coatings for the automotive application“, RFCS, Sep 2009 – Feb 2013

„Guidelines for use of welded stainless steel in corrosive environments (JOINOX)“, RFCS, Sep 2012 – Feb 2016

„High Emissivity Annealing Technique“, RFCS, Jul 2010 – Dec 2013

„Improving steel product durability through alloy coating microstructure (MicroCorr)“, RFCS, Sep 2015 – Feb 2019

„New approaches to quantitative Hydrogen Analysis of coated steel products“, RFCS, Jul 2010 – Feb 2014

„New developments and optimisation of high strength boron treated steels through the application of advanced boron monitoring techniques (OPTIBOS)“, RFCS, Jul 2012 – Dec 2015

„New Metallurgical Tools for optimum design of modern Ultra High Strength Low Carbon Martensitic Steels (TOOLMART)“, RFCS, Jul 2013 – Dec 2016

„Screening of tough lightweight Fe-Mn-Al-C, steels using high throughput methodologies (LIGHTOUGH)“, RFCS, Jul 2015 – Dec 2018

Foundation Materials Innovation Institute

„Development of full field gradient plasticity FEM code to predict constitutive material model for dual phase steels“, Jan 2011 – Dec 2015

„The influence of grain and interphase boundaries on strength and fracture toughness of AHSS steels - experimental investigation on the relation between character of individual grain boundaries and grain boundary networks and their deformation behaviour“, Jul 2014 – Jun 2018

European Space Agency (ESA)

„On Beryllium Alloy & Composite Development for Space and Non-Space Application“, Jan 2014 – Dec 2016



Sino-German Center for Research Promotion (SGC)

“Liquidus surfaces and reaction schemes of the ternary systems Cr-Al-Nb and Fe-Al-Nb: Experiments and thermodynamic modelling”, Chinesisch-Deutsches Zentrum für Wissenschaftsförderung, Jan 2012 – Dec 2012

Massachusetts Institute of Technology International Science and Technology Initiatives (MISTI)

“Collaborative Improvement of Photoelectrochemical Cells: Experiments and Modeling of Inexpensive Hematite Photoanode Nanostructures”

MCL – COMET K2 Program (Materials Center Leoben)

“Life time of functional multilayer ceramic systems”, Materials Center Leoben, Austria, Aug 2013 - Sep 2014



Collaboration with National and International Research Institutes

National:

ACCESS e.V. Aachen, Aachen

Deutsches Zentrum für Luft- und Raumfahrt (DLR), Bonn

Forschungszentrum Jülich GmbH: Ernst Ruska Centre for Microscopy and Spectroscopy with Electrons, Jülich

Forschungszentrum Jülich GmbH: Institute of Complex Systems Soft Condensed Matter (ICS-3), Jülich

Forschungszentrum Jülich GmbH: Peter-Grünberg-Institut, Jülich

Friedrich-Alexander-Universität Erlangen-Nürnberg: Lehrstuhl für allgemeine Werkstoffeigenschaften, Erlangen

Friedrich-Alexander-Universität Erlangen-Nürnberg: Lehrstuhl für Feststoff- und Grenzflächenverfahrenstechnik, Erlangen

Friedrich-Alexander-Universität Erlangen-Nürnberg: Lehrstuhl für Korrosion und Oberflächentechnik, Erlangen

Friedrich-Alexander-Universität Erlangen-Nürnberg: Lehrstuhl für Kunststofftechnik, Erlangen

Friedrich-Alexander-Universität Erlangen-Nürnberg: Lehrstuhl für Werkstoffkunde und Technologie der Metalle, Erlangen

Fraunhofer Institut für Angewandte Polymerforschung (IAP), Potsdam

Fraunhofer-Institut für Keramische Technologien und Systeme (IKTS), Dresden

Fraunhofer-Institut für Lasertechnik (ILT), Aachen

Fraunhofer-Institut für Produktionstechnologie (IPT), Aachen

Fraunhofer Institut für Silicatforschung (ISC), Würzburg

Fraunhofer-Institut für Werkstoffmechanik (IWM), Freiburg

Fraunhofer-Institut für Werkstoff- und Strahltechnik (IWS), Dresden

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Heinrich-Heine-Universität Düsseldorf: Lehrstuhl für organische Chemie, Düsseldorf

Helmholtz-Zentrum Geesthacht – Zentrum für Material- und Küstenforschung, Geesthacht

Humboldt Universität zu Berlin: Institut für Mathematik, Berlin

IWT - Stiftung Institut für Werkstofftechnik, Bremen

Jacobs University Bremen, Privatuniversität, Bremen

Karlsruher Institut für Technologie (KIT): Institut für Angewandte Materialien – Werkstoffkunde (IAM), Karlsruhe

Leibniz-Institut für Analytische Wissenschaften - ISAS - e.V., Dortmund

Leibniz-Institut für Festkörper- und Werkstoffforschung (IFW) Dresden: Institut für komplexe Materialien, Dresden

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Martin-Luther-Universität Halle-Wittenberg: Institut für Chemie, Halle

Max-Planck-Institut für Chemische Energiekonversion, Mülheim a. d. Ruhr

Max-Planck-Institut für Innovation und Wettbewerb, München



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Delft University of Technology: Faculty of Applied Sciences, FAME group, The Netherlands



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Strategisch Initiatief Materialen (SIM), Belgium

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Technische Universität Wien: Institute of Lightweight Design and Structural Biomechanics (ILSB), Vienna, Austria

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Tezpur University, Tezpur, India

United Kingdom Atomic Energy Authority, UK

Università degli Studi di Torino (UNITO), Italy

Universités d'Aix-Marseille: Institut Matériaux Microélectronique Nanosciences de Provence (IM2NP), Marseille, France

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University of California, Santa Barbara, USA

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University of Luxembourg, Luxembourg

University of Tennessee: Department Material Science and Engineering, Knoxville, USA

University of Poitiers, Institut Pprime, Poitiers, France

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University of Zurich, Switzerland

Uppsala University: Department of Physics and Astronomy, Materials Theory, Sweden

Weizmann Institute of Science: Chemical Physics Department, Rehovot, Israel

West Virginia University, Morgantown, USA

Wigner Research Center for Physics, Budapest, Hungary

Xiamen University, Xiamen, China



Collaborating Industrial Partners and Patents

Collaborating Industrial Partners

National:

Airbus Group Innovations, München/Ottobrunn
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BASF Coatings AG, Münster
Biochem Zusatzstoffe Handels- und Produktionsges. mbH, Lohne
Bruker EAS GmbH, Hanau
Bruker Nano GmbH, Berlin
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Salzgitter Mannesmann Forschung GmbH, Duisburg
Sentech Instruments GmbH, Berlin
Senvion GmbH, Hamburg
Siemens AG Corporate Technology, Berlin
Thermprotec GmbH, Offenburg
ThyssenKrupp Steel Europe AG, Duisburg/Dortmund
TLS Technik GmbH & Co Spezialpulver KG, Bitterfeld-Wolfen
Umicore AG & Co. KG, Hanau-Wolfgang
Vallourec, Düsseldorf
VDM Metals, Research and Development, Werdohl
Voestalpine Böhler Welding Germany GmbH, Hamm



International:

ABB Turbo Systems AG, Baden, Switzerland
ArcelorMittal Maizières SA, Maizières-lès-Metz, France
ATI Specialty Alloys and Components, Albany, USA
Bekaert, Belgium
Centro Ricerche Fiat, Torino, Italy
GE Avio S.r.l. Avio Aero, Torino, Italy
EPCOS OHG, Deutschlandsberg, Austria
Infineon Technologies Austria AG, Villach, Austria
JFE Steel Corporation, Hiroshima, Japan
Johnson Matthey, UK
KAI Kompetenzzentrum Automobil- u. Industrieelektronik GmbH, Villach, Austria
LS Instruments AG, Fribourg, Switzerland
Molycorp Silmet AS, Estonia
Nippon Steel & Sumitomo Metal Corporation, Japan
NIZO Food Research, Ede, The Netherlands
Norsk Titanium Components AS, Oslo
OCAS NV, Belgium
Outokumpu Stainless AB, Stockholm, Sweden
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Stiftelsen SINTEF, Trondheim, Norway
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Voest Alpine Stahl GmbH, Linz, Austria
Wärtsilä Finland Oy, Vaasa, Finland
Wärtsilä Netherlands B.V., Zwolle, Niederlande
Winterthur Gas & Diesel Ltd., Winterthur, Schweiz
ZF Windpower Antwerpen NV, Lommel, Belgium



Patents

Patents issued in the given time schedule

Date of Issue	Description	Inventors
June 05, 2015	Korrosionsbeständiger austenitischer Stahl (JP 2012519780 A)	Weber, Sebastian, Dr. Mujica Roncery, Lais, Dipl.-Ing
January 08, 2015	Aktive Schichten für Korrosionsschutz joint invention in context of FhG-MPG-cooperation (DE 10 2012209761.9)	Rohwerder, Michael Dr. Vimalanandan, Ashokanand Tran, The Hai Various inventors from Fraunhofer Gesellschaft Landfester, Dr. K.; Crespy, Dr. D.; Fickert, J., MPI für Polymerforschung
May 19, 2009 January 01, 2013	High carbon steel with superplasticity (US 7.534314B2) (DE 10 2005 027 258.4)	Frommeyer, Georg, Prof. Dr. Dr. Gerick, DaimlerChrysler AG Dr. Tilmann Haug, DaimlerChrysler AG Dr. Wolfgang Kleinekathöfer, DaimlerChrysler AG
October 05, 2010 August 27, 2012 December 11, 2013 December 11, 2013	Verfahren zum Erzeugen von Warmbändern aus Leichtbaustahl (US 10/595,781) (KR 10-2006-7012471) (DE 50 2004 014 463.2) (EP 04802997.9)	Frommeyer, Georg, Prof. Dr. Brüx, Udo, Dipl.-Phys. Brokmeier, Klaus, Dipl.-Ing. Kroos, Joachim, Dr., Salzgitter Flaxa, Volker, Dr., Salzgitter Spitzer, K.-H., Prof. Dr., TU Clausthal

Patents filed in the given time schedule

Date of Pending	Description	Inventors
March 10, 2009 March 03, 2010	Korrosionsbeständiger austenitischer Stahl (10 2009 003 598.2) (PCT DE 2010/000232) (CN000102365382A) release to inventors in 10/2014 (EP 2 406 405 A1) (JP 2012519780 A) (KR 102011136840 A) (US 20120000580 A1) release to inventors in 10/2014	Weber, Sebastian, Dr. Mujica Roncery, Lais, Dipl.-Ing
December 20, 2012	Kaltformbare, schweißgeeignete Konstruktionsstähle (10 2012 112 703.4)	Springer, Hauke Dr.

Date of Pending	Description	Inventors
February 8, 2013 February 8, 2012	Highly sinter-stable metal nanoparticles supported on mesoporous graphitic particles and their use Joint invention with Studiengesellschaft Kohle mbH, transference to Studiengesellschaft Kohle mbH in January 2014 (WO 2013/117725 A1) (EP 2012 0154508)	Mayrhofer, Karl Dr. Meier, Josef Baldizzone, Claudio Schüth, Ferdi Prof., Galeano Nunez, Diana Carolina, Bongard, Dr. Hans, MPI für Kohlenforschung
March 13, 2012	Use of mesoporous graphite particles for electrochemical applications Joint invention with Zentrum für Brennstoffzellentechnik ZBT GmbH and Studiengesellschaft Kohle mbH: transference to Studien-gesellschaft Kohle mbH in August 2014 (DE 10 2012 102120)	Mayrhofer, Karl Dr. Meier, Josef Peinecke, Dr. Volker, Zentrum f. Brennstoff-zelltechnik ZBT GmbH Galeano Nunez, Diana Carolina, Schüth, Ferdi Prof., MPI für Kohlenforschung
May 16, 2012	Fabrication of nanoporous carbide membranes Joint invention with Universitat Politecnica de Catalunya: Agreement concerning rights with UPC since 02/2013 (EP 12168207.4)	Renner, Frank Dr. Duarte-Correa, Maria Jazmin Dr. Lengsfeld, Julia Bruna, Pere Dr., BarcelonaTech
April 26, 2013	Nanoelektroden-Partikelfalle für empfindliche spektroskopische u. elektronische Analyse US-Patent: Appl. No. 13/872,013	Erbe, Dr. Andreas Chia-Fu Chu, Ming-Li Chu, Leonardo Lesser-Rojas, Academia Sinica Taipe



Conferences, Symposia and Meetings Organized by the Institute

2013

M. Palm organized and chaired the Intermetallics Technical Committee Meeting of the Deutsche Gesellschaft für Materialkunde (DGM) at the Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, 10 Jan 2013

H. Springer organized the workshop “Alloy Design of Advanced Metallic Materials” held at MPIE with 70 participants, 02 Feb 2013

T. Hickel organized the Hydramicros meeting in Düsseldorf, 05 - 06 Feb 2013

T. Hickel co-organized an international workshop on “Unary Systems” at Ringberg Castle, 24 - 29 Mar 2013

J. Neugebauer co-organized a symposium on “Combinatorial Materials Science” at the spring meeting of the German Physical Society (DPG) in Regensburg, 11 - 15 Mar 2013

B. Grabowski and *J. Neugebauer* organized a symposium on “Computational Thermodynamics and Kinetics” at the TMS conference in San Antonio (USA), Mar 2013

M. Todorova, *C. Freysoldt*, and *J. Neugebauer* organized an international workshop on „Connecting electrochemical and water simulations: Status and future challenges“ at Ringberg Castle, 21 - 24 Apr 2013

G. Dehm organized the “Mechanics meets Energy I” workshop between young scientists from the Ludwig-Maximilians-Universität, Munich and MPIE, Düsseldorf, 15 and 16 May 2013

L. Lympirakis organized the ALight EU project meeting in Düsseldorf, 05 Jun 2013

G. Dehm organized the GDRI CNRS Mecano “Mechanics of Nano-Objects” General Meeting in Düsseldorf, 18 and 19 Jul 2013

F. Roters organized the meeting of the Fachausschuss Computersimulation of the DGM entitled “Methoden der Gefügesimulation” held at Ruhr-Universität Bochum, 18 Aug 2013

J. Neugebauer co-organized a symposium on “Materials Discovery and High-Throughput Methods in Modelling and Experiment” at Euromat in Sevilla (Spain), 08 - 13 Sep 2013

G. Dehm was organizer for the topic “Mechanical Characterization” at EUROMAT 2013 in Sevilla, Spain, 8 - 13 Sep 2013

R. Spatschek co-organized an international summer school on phase field modeling in Peyresq (France) during 23 Sep – 04 Oct, 2013

M. Palm and *F. Stein* co-organized the international conference Intermetallics 2013 at the Educational Center Kloster Banz, Bad Staffelstein, 30 Sep - 04 Oct 2013

A. Erbe, *C. Arckel* and *C.D. Fernández-Solis* organised the training course “Optical spectroscopy at interfaces and in microfluidic channels” for fellows of the Marie Curie Initial Training Network “Somatai” at MPIE from 9 - 13 Dec 2013

2014

G. Dehm and *S. Brinckmann* organized the workshop “Mechanics meets Energy II” in Winterberg, Germany, 20 - 23 Jan 2014

Y. Li organized the first pearlite workshop held at MPIE, 10 - 11 Feb 2014

M. Palm organized and chaired the Intermetallics Technical Committee Meeting of the Deutsche Gesellschaft für Materialkunde (DGM) at MPIE, Düsseldorf, 26 Feb 2014

C. Kirchlechner organized the DGM-Arbeitskreis meeting “Rasterkraftmikroskopie und nano-mechanische Methoden”, Düsseldorf, Germany, 27 - 28 Feb 2014

J. Neugebauer co-organized a symposium on “Thermodynamics and Kinetics on the Nanoscale” at the spring meeting of the German Physical Society (DPG) in Dresden, 30 Mar - 04 Apr 2014



B. Kohlhaas organized the MPIE Alumni Meeting “Applied fundamental research for nearly 100 years” on the occasion of the 60th Birthday of Prof. Martin Stratmann which took place at MPIE on 28 May 2014

F. Roters organized the 4th International Symposium on Computational Mechanics of Polycrystals, CMCn 2014 held at MPIE with 40 participants, 14 – 15 Jun 2014

M. Valtiner and *S. Brinkmann* organised the workshop “Bridging Scales in Tribology and Wear” at MPIE on 25 Jun 2014

G. Dehm and *C. Scheu* organized a meeting on “Merging Atomistic and Continuum Analysis of Nanometer Length-Scale Metal-Oxide Systems for Energy and Catalysis Applications (MACAN)” at MPIE Düsseldorf, 30 Jun - 2 Jul 2014

M. Todorova and *J. Neugebauer* co-organized an ICMR workshop on “Ab-initio description of charged systems and solid/liquid interfaces for semiconductors and electrochemistry” in Santa Barbara (USA), 07 - 11 Jul 2014

S. Zaeferrer and *K. Angenendt* co-organized the meeting „Mikrostrukturcharakterisierung im Rasterelektronenmikroskop“ at the BAM Berlin with 120 participants 08 - 09 Jul 2014

A. Erbe co-organized the summer school “Soft Matter at Aqueous Interfaces” in Berlin, Germany, 15 - 25 Aug 2014

T. Hickel co-organized a symposium (mini-colloquium) on “Structure and Dynamics – Metals” at the Condensed Matter in Paris CMD 25 – JMC 14 conference, Paris (France), 24 - 29 Aug 2014

G. Dehm co-organized the symposium “Structure and dynamics V: Mechanical properties at small scales” at the Condensed Matter conference CMD25 - JMC14 in Paris, France, 24 - 29 Aug 2014

M. Friák organized a symposium “Atomistic Origin of Ductility” at the Materials Science and Engineering (MSE) Congress 2014, Darmstadt (Germany), 23 -25 Sep 2014

C. Kirchlechner co-organized the Summer School „Theory and Practice of Modern Powder Diffraction”, Ellwangen, Germany, 5 - 8 Oct 2014

J. Neugebauer co-organized a symposium on “Multiscale Simulations and Modeling for Integrated Materials Engineering” at the MMM conference in Berkeley (USA), 06 - 10 Oct 2014

T. Hickel and *J. Neugebauer* organized an ADIS workshop on “Ab initio Description of Iron and Steel: Multiple Impacts of Magnetism” at Ringberg Castle during 26 - 31 Oct 2014

M. Valtiner was member of the advisory board and chaired one symposium at the 2nd International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM), in Haikou, Hainan, China from 24 - 29 Oct 2014

2015

M. Todorova organized the 2nd German-Austrian workshop on “Computational Materials Science on Complex Energy Landscapes” in Kirchdorf (Austria) from 19 - 23 Jan 2015

D. Ponge and *Z. Tarzimoghadam* organized the workshop on “Hydrogen Embrittlement and Sour Gas Corrosion in Oil and Gas Industry”, held at MPIE with 80 participants, 27 - 28 Jan 2015

L. Lympirakis organized an ALight-Project Meeting in Düsseldorf, 16 - 17 Feb 2015

C. Kirchlechner co-organized the DGM-Arbeitskreis meeting “Rasterkraftmikroskopie und nanomechanische Methoden”, Darmstadt, Germany 5 - 6 Mar 2015

T. Hickel co-organized a symposium on “Hydrogen in metals” at the spring meeting of the German Physical Society (DPG) in Berlin, 16 - 18 Mar 2015

G. Dehm, *C. Scheu*, and *S. Brinckmann* organized the “Mechanics meets Energy III” workshop in Burg Ebernburg, Germany, 23 - 26 Mar 2015

E. Gattermann and *A. Erbe* organised the workshop “Interface-controlled materials in energy conversion” of the IMPRS SurMat at the MPIE on 27 Apr 2015

C. Tasan organized the 3rd Int. Workshop on Physics Based Material Models and Experimental Observations, Cesme/Turkey. 02 - 04 Jun 2015



- R. Hadian* and *B. Grabowski* organized an international workshop on “Understanding Grain Boundary Migration” in Reisenburg, 21 -24 Jun 2015
- R. Spatschek* organized a project meeting on press hardening in Düsseldorf, 01 Jul 2015
- G. Dehm* co-organized the symposium “Experimental Micromechanics and Nanomechanics” at the 9th European Solid Mechanics Conference ESMC 2015, Madrid, Spain, 6 - 10 Jul 2015
- J. Neugebauer* organized the 5th Sino-German Symposium on “Thermodynamics and Kinetics of Nano- and Mesoscale Materials and Their Applications” in Changchun (China), 26 - 31 Jul 2015
- G. Dehm* co-organized the symposium “Metals, Alloys and Intermetallics” at the Microscopy Conference 2015, Göttingen, Germany, 6 - 11 Sep 2015
- C. Tasan* was coordinator of the Symposium “In-situ Micro- and Nano-Mechanical Characterization and Size Effects” at the EUROMAT 2015 in Warsaw/Poland, 20 - 24 Sep 2015
- M. Palm* and *F. Stein* co-organized the international conference Intermetallics 2015 at the Educational Center Kloster Banz, Bad Staffelstein, 28 Sep - 02 Oct.0 2015.0
- Y. Li* organized the second pearlite workshop held at MPIE, 20 - 21 Oct 2015
- J. Neugebauer* co-organized the ISIS Workshop in Moscow (Russia), 25 - 31 Oct 2015
- J. Neugebauer* co-organized the CECAM-Workshop Simulation of chemistry-driven growth phenomena for metastable materials in Rauschholzhausen, Germany, 08 -11 Nov 2015
- M. Palm* co-organized and chaired the symposium “Frontiers in Intermetallics” as part of the international Advances in Materials & Processing Technologies conference AMPT 2015, Madrid, Spain, 14 - 17 Dec 2015



Institute Colloquia and Invited Seminar Lectures

2013

M. Finnis, Imperial College London, UK: Grain Boundaries and Defects in Oxides (7 Jan 2013)

H. Boeckels, Clemson University, SC, USA: Effect of Oxygen on the Omega Stability in Metastable Beta Titanium Alloys (09 Jan. 2013)

K. Morgenstern, Uni Bochum: Properties of Nanosized Islands and Their Influence on Non-adiabatic Reactions (08 Jan. 2013, Colloquium)

V. Klinger, Fraunhofer-Institut für Solare Energiesysteme ISE, Gelsenkirchen: Multiple Solar Cells from III-V Semiconductors - Concept and Applications (14 Jan. 2013)

A. Tkatchenko, FHI Berlin: Many-Body van der Waals Interactions with Applications in Biology, Chemistry, and Physics (15 Jan. 2013)

R. Schäublin, Ecole Polytechnique Fédérale de Lausanne, Switzerland: Nanometric Defects in Metals in Transmission Electron Microscopy (17 Jan. 2013)

D. Terentyev, SCK-CEN, Nuclear Materials Institute, Mol, Belgium: Modelling Activities to Rationalize, Support and Design New Irradiation Experiments for Structural Steels (17 Jan. 2013)

S. Roy, Institut für Werkstoffwissenschaft und Werkstofftechnik, Chemnitz University of Technology: Role of Boron on the Evolution of Microstructure and Texture in Ti-6Al-4V-0.1B Alloy (21 Jan. 2013)

C. Kirchlechner, Montanuniversität Leoben, Austria: *In situ* Micromechanics: An Overview on Synchrotron based Experiments (21 Jan. 2013)

G. Grimvall, KTH Stockholm, Sweden: Lattice Instabilities in Metallic Alloys (24 Jan. 2013)

R. Raghavan, EMPA – Swiss Federal Laboratories for Materials Testing and Research, Dübendorf, Switzerland: Small Scale Mechanical Behavior of Amorphous Alloys, Wood and Multilayered Thin Films (28 Jan. 2013)

J. Wheeler, EMPA – Swiss Federal Laboratories for Materials Testing and Research, Dübendorf, Switzerland: *In situ* Nanomechanics at Elevated Temperature and Its Application to Crystalline Materials (28 Jan. 2013)

H. Biermann, TU Freiberg: TRIP-Matrix-Composite (30 Jan. 2013, Colloquium)

A.H. Heuer, Case Western Reserve University, Cleveland, OH, USA: Paraequilibrium Carburization of Austenitic Stainless Steels - Interstitial Hardening Taken to a New Level (18 Feb. 2013, Colloquium)

G. Richter, Max-Planck-Institut für Intelligente Systeme: Micro-/Nanostructure Formation by Physical Vapor Deposition (18 Feb. 2013)

B. Sanyal, Uppsala University, Sweden: Novel Magnetic Properties with Rare Earths in Thin Films & Clusters (22 Feb. 2013)

H. Sawada, Nippon Steel & Sumitomo Metal Corporation, Japan: First-principles Study of the Interface between Iron and Precipitates (25 Feb. 2013)

S. Ii, Structural Materials Unit, National Institute for Materials Science (NIMS), Tsukuba, Japan: Development of Nano Scale Quantitative Analyses by Transmission Electron Microscope and Its Application to Lattice Defects in Metals (12 Mar. 2013)

U. Guder, Çanakkale Onsekiz Mart University, Çanakkale, Turkey: Iron Metallurgy in Anatolia in the Middle Ages (15 Mar. 2013)

V. Heine, Cavendish Laboratory (TCM), U.K.: Theoretical Chemistry of Metallic Cohesion (19 Mar. 2013)

B. Braunschweig, Friedrich-Alexander-Universität Erlangen-Nürnberg: Study of Electrode/Electrolyte Interfaces by Sum Frequency Generation Spectroscopy (20 Mar. 2013)

A.E. Ismail, RWTH Aachen University: Improved Molecular Simulations of Interfaces (21 Mar. 2013)

P.E.A. Turchi, Lawrence Livermore National Laboratory: Thermodynamics of Alloys: The Road from *ab initio* to Phenomenology (21 Mar. 2013)

M.P. Moody, University of Oxford, UK: A Nexus between 3D Microscopy and Atomistic Simulation (26 Mar. 2013)



- D. Holec*, Montan-Universität Leoben, Austria: Texture Influence on Elastic Constants of Nitride Alloys (27 Mar. 2013)
- E. Rabkin*, Technion – Israel Institute of Technology, Haifa, Israel: From Thin Films to Nanoparticles: Microstructure, Kinetics, Mechanics (3 Apr. 2013)
- C. Motz*, Universität Saarbrücken: Influence of Defect Structure, Interfaces and Environment on the Micro-/ Nanomechanical Behavior of Metals (5 Apr. 2013)
- M.T.M. Koper*, Leiden Institute of Chemistry, Leiden University, The Netherlands: Electrocatalysis: From Single Crystals to Single Nanoparticles (09 Apr. 2013, Colloquium)
- M. Mrovic*, Fraunhofer Institute for Mechanics of Materials IWM, Freiburg: Diffusion of Hydrogen in Strained Fe and Ni Lattices (10 Apr. 2013)
- Z. Strelcova*, Masaryk University, Brno, Czech Republic: The Theoretical Investigation of Chitin Nanofibrils Mechanical Properties (11 Apr. 2013)
- T. Horiuchi*, Hokkaido Institute of Technology, Sapporo, Japan: Effect of Alloying Elements on the Ordering Tendency in Alloy 690 based upon Thermodynamic Calculation (18 Apr. 2013)
- T. Horiuchi*, Hokkaido Institute of Technology, Sapporo, Japan: Experimental Study on Phase Equilibria in the Vicinity of X, W and H Phases in the Mg-Zn-Y Ternary System (18 Apr. 2013)
- O. Hellman*, Linköping University, Sweden: Temperature Dependent Effective Potential Method for Thermal Properties of Solids (23 Apr. 2013)
- A. Heuer*, Case Western Reserve University, Cleveland, OH, USA: On the Growth of Al_2O_3 Scales (26 Apr. 2013)
- J.N. Israelachvili*, UC Santa Barbara, CA, USA: Recent Work on Interesting Physico-Chemical Phenomena when Two Surfaces Slide Past Each Other (30 Apr. 2013, Colloquium)
- C. Nishimura*, National Institute for Materials Science, Tsukuba, Japan: Vanadium-based Alloy Design for Hydrogen Purification Membrane (13 May 2013)
- Y. Fukai*, Institute of Industrial Science, The University of Tokyo, Japan: Hydrogen-Induced Superabundant Vacancies – Coming Out of the Shade (14 May 2013, Colloquium)
- C. Liebscher*, University of California, Berkeley, CA, USA: Hierarchical Microstructure of Ferritic Alloys Strengthened By Two-phase $\text{L2}_1\text{-Ni}_2\text{TiAl}$ / B2-NiAl Precipitates (17 May 2013)
- S. Miura*, Hokkaido University, Sapporo, Japan: Effects of the Alloying Elements on the Microstructure Control of Nb-Si Alloys (21 May 2013)
- S.V. Divinski*, University of Münster: Grain Boundary Diffusion: From Perfect Bicrystals to Severely Deformed Polycrystalline Materials (22 May 2013)
- J. Deconinck*, Vrije Universiteit Brussel, Belgium: Steps towards the Simulation of Atmospheric Corrosion (24 May 2013)
- M. Kühbach*, RWTH Aachen: Modeling Microstructure Evolution during Primary Static RX with Massively Parallelized Cellular Automata (3 June 2013)
- U. Braun*, Department of Law and Ethics of the Sciences, General Administration Max Planck Society, Munich: Good Scientific Practice (5 June 2013)
- K.C. Jena*, École Polytechnique Fédérale de Lausanne, Switzerland: Nonlinear Sum Frequency Vibrational Spectroscopy and its Relevance for Probing Interfacial Structure at Hidden Soft and Planar Interfaces (18 June 2013)
- J. Behler*, Ruhr-Universität Bochum: Interatomic Potentials for Molecules, Solids, and Surfaces Based on Artificial Neural Networks (19 June 2013)
- M. Lazar*, Darmstadt University of Technology: Non-singular Dislocation Fields in the Theory of Gradient Elasticity (21 June 2013)
- R.C. Reed*, University of Oxford, UK: On the Role of Numerical Modelling for Materials Technology for High Temperature Applications (25 June 2013)
- L.-Q. Chen*, Pennsylvania State University, State College, PA, USA: Kinetic Pathways of Phase Transformations and Microstructure Evolution in Two-phase Titanium Alloys (25 June 2013)
- Z.-K. Liu*, Pennsylvania State University, State College, PA, USA: High throughput CALPHAD modeling and the Materials Genome® (25 June 2013)
- C.W. Sinclair*, The University of British Columbia, Vancouver, Canada: Carbon Redistribution and Metastable Phases in Fe-C Alloys (26 June 2013)



- C.W. Sinclair*, The University of British Columbia, Vancouver, Canada: Microscale Plastic Strain Distribution in Slip Dominated Deformation of a ZEK 100 Mg-RE Alloy (27 June 2013)
- P. Rinke*, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin: Hybrid Organic/Inorganic Systems from First Principles (27 June 2013)
- R. Hadian*, Mc. Master University, Hamilton, Canada: Cementite Crystallography in Bainite (28 June 2013)
- A. Wimmer*, Erich Schmid Institute of Materials Science, Leoben, Austria: In-situ EBSD on Cu Micron-Lines (1 July 2013)
- T.R. Bieler*, Michigan State University, East Lansing, MI, USA: Characterization and Modeling of the Influence of Mesotexture on Heterogeneous Deformation in Ti and Ta (1 July 2013)
- T. Tanaka*, Nippon Steel & Sumitomo Metal Corporation, Chiba, Japan: Grain boundaries and interface characterization by AES and SIMS (1 July 2013)
- S.H. Donaldson*, University of California, Santa Barbara, CA, USA: Development of a General Interaction Potential for Hydrophobic and Hydrophilic Interactions (9 July 2013)
- D. Trinkle*, Univ. of Illinois at Urbana-Champaign, IL, USA: Deformation in Magnesium from First-Principles (10 July 2013, Colloquium)
- G. Sha*, The University of Sydney, Australia: Atom Probe Tomography for New Insights into Solute Nano-structures in Light Metals (29 July 2013)
- U. Lienert*, Deutsches Elektronen Synchrotron, Hamburg, Materials Characterization by High Energy Synchrotron Radiation (5 Aug. 2013)
- X. Tao*, Nanning University China: Physical Properties of Some Intermetallics from First-Principles Calculations (5 Aug. 2013)
- M. Finnis*, Imperial College London, UK: On the Growth of Alumina Scale (26 Aug. 2013)
- C. Kübel*, Karlsruhe Institute of Technology (KIT): New Approaches for Quantitative Electron Microscopic Characterization of Structural Changes in Nanocrystalline and Amorphous Metals during Mechanical Deformation (27 Aug. 2013)
- E. McEniry*, ICAMS Bochum: Toward Linear-Scaling Tight-Binding for Complex Metallic Alloys (28 Aug. 2013)
- J. Takahashi*, Nippon Steel & Sumitomo Metal Corporation, Chiba, Japan: Atom Probe Tomography Analysis of Severely Deformed Pearlitic Steels (5 Sep. 2013)
- N. Park*, Kyoto University, Japan: Dynamic Ferrite Transformation in Fe-6Ni-0.1C Alloy (11 Sep. 2013)
- N. Park*, Kyoto University, Japan: Strengthening in a Nano-Structured High-Entropy CrMnFeCoNi Alloy (12 Sep. 2013)
- D. Weygand*, Karlsruhe Institute of Technology (KIT), Karlsruhe: From Atomistic to Discrete Dislocation Dynamics Modeling of bcc Metals: Deformation of Tungsten (17 Sep. 2013)
- F. Otto*, University of Tennessee, Oak Ridge National Laboratory, Oak Ridge, TN, USA: The CoCrFeMnNi High-entropy Alloy: Phase Stability Aspects and Tensile Properties (20 Sep. 2013)
- X. Banquy*, Université de Montréal, Montréal, Canada: Bio-Inspired Lubrication: New Strategies and Future Prospects (20 Sep 2013)
- S. Botti*, Institut Lumière Matière (ILM) – CNRS, Université Claude Bernard Lyon 1, Villeurbanne, France: Designing and Understanding Novel Materials for Energy (23 Sep. 2013)
- J. Van Humbeeck*, MTM - KU Leuven, Belgium: Additive Manufacturing (AM) of Metallic Parts by Selective Laser Melting (SLM) (24 Sep. 2013, Colloquium)
- F. Hausen*, INM - Leibniz Institute for New Materials, Saarbrücken / University of Oxford, Oxford, UK: Atomic Friction in an Electrochemical Environment (24 Sep. 2013)
- Y. Morimoto*, Toyota Central R&D Labs., Inc, Nagakute, Aichi, Japan: Present Status of Fuel-Cell Powered Vehicles and Recent Topics on Electrocatalysis (24 Sep. 2013)
- D. Barbier*, Arcelormittal Maizières Research SA, Maizières les Metz, France: Interactions between Ferrite Recrystallization and Austenite Formation in High Strength Steels (4 Oct. 2013)
- M. Takeyama*, Tokyo Institute of Technology, Japan: Role of Grain-boundary TCP Laves Phase in Mechanical Properties of Novel Austenitic Heat Resistant Steels (7 Oct. 2013)
- S. Kobayashi*, National Institute for Materials Science, Tsukuba, Japan: The Formation of Fine Laves Phase Particles through Interphase Precipitation in Heat Resistant Ferritic Alloys (8 Oct. 2013)



- V. Jayaram*, Indian Institute of Science, Bangalore, India: Microscale Evaluation of Uniaxial and Fracture Behaviour of Bond Coats and the Role of Platinum (14 Oct. 2013, Colloquium)
- S. Maisel*, Technische Universität Hamburg-Harburg: Configuration Resolved High-Throughput Screening in Metal Alloys (28 Oct. 2013)
- P. Suquet*, LMA-CNRS, Marseille, France: A Computational Method Based on Fast Fourier Transforms for Heterogeneous Materials with Complex Microstructure (5 Nov. 2013, Colloquium)
- G. Hautier*, Université catholique de Louvain, Belgium: Accelerating Materials Discovery through High-Throughput Computing and the Materials Project (5 Nov. 2013)
- P. Voyles*, University of Wisconsin-Madison, WI, USA: Fluctuation Electron Microscopy Studies of Nanoscale Order in Metallic Glasses (13 Nov. 2013, Colloquium)
- G. Laplanche*, Ruhr-Universität Bochum: On the Stress Induced Formation of Martensite in NiTi Shape Memory Alloys during Nanoindentation (13 Nov. 2013)
- C.-D. Nguyen*, Ruhr-Universität Bochum: Interaction between Solid-Melt Interfaces and Gamma Surfaces (20 Nov. 2013)
- P.A. Gruber*, Karlsruhe Institute of Technology (KIT), Karlsruhe: Synchrotron-based *in situ* Mechanical Testing of Nanocrystalline Metals and Alloys (26 Nov. 2013)
- L.P.H. Jeurgens*, EMPA - Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland: Surprises at Interfaces in Nanomaterials (27 Nov. 2013)
- P. Gurikov*, Technische Universität Hamburg-Harburg: Mass Transfer in Disordered Media: A Cellular Automata Approach (28 Nov. 2013)

2014

- C. Ayas*, Cambridge University, Cambridge, UK: Climb Enabled Discrete Dislocation Plasticity (24 Jan. 2014)
- M. Özaslan*, Paul Scherrer Institut, Villigen, Switzerland: Pt Alloy Electrocatalysts for Oxygen Reduction Reaction (24 Jan. 2014)
- U. Yalcin*, Ruhr-Universität Bochum: Metallhandwerk in Anatolien: Anfänge und Entwicklung der Metallnutzung in Anatolien (27 Jan. 2014)
- P. Krogstrup*, Niels Bohr Institute, Copenhagen, Denmark: Nanowires – Growth, Characterization and Applications (28 Jan. 2014)
- T. Detzel*, Infineon Technologies AG, Villach, Austria: Innovative Semiconductor Solutions for Energy Efficiency, Mobility and Security – Products, Technologies and New Semiconductor Materials (30 Jan. 2014)
- M. Nelhiebel*, KAI - Kompetenzzentrum Automobil- und Industrieelektronik GmbH, Villach, Austria: REL4POWER - Research on Power Technology Reliability at Infineon Austria and KAI (30 Jan. 2014)
- M. Sugiyama*, Nippon Steel & Sumitomo Metals Corporation (NSSMC), Tokyo, Japan: Recent Activities for Characterization of Steel Microstructure in NSSMC (10 Feb. 2014)
- A. Taniyama*, Nippon Steel & Sumitomo Metals Corporation (NSSMC), Tokyo, Japan: 3D Analysis of Plastic Strain Propagation in Metallic Materials by 3D-EBSD (10 Feb. 2014)
- D. Verreault*, Ohio State University, Columbus, OH, USA: Probing Water Organization and Ion Distributions at Aqueous Interfaces by Vibrational Nonlinear Spectroscopy (10 Feb. 2014)
- H. Clemens*, University of Leoben, Austria: Development Status and Perspectives of Advanced Intermetallic Titanium Aluminides (13 Feb. 2014, Colloquium)
- A. Wieck*, Ruhr-Universität Bochum: Molecular Beam Epitaxy and Focussed Ion Beams (17 Feb. 2014)
- H. Rösner*, Westfälische Wilhelms-Universität Münster, A Novel Experimental Approach to Determine Density Changes in Shear Bands of Metallic Glasses by Correlative Analytical TEM (19 Feb. 2014)
- D.A. Molodov*, RWTH Aachen: Recent Investigations into Dynamics of Individual Grain Boundaries in Metals (27 Feb. 2014)
- A. Duff*, Imperial College London, UK: Finite Temperature Modelling of ZrC, HfC, ZrB₂ and HfB₂ (4 Mar. 2014)
- T. Pardoën*, Université catholique de Louvain, Louvain-la-Neuve, Belgium: Size and Rate Dependent Ductility of Thin Metallic Films (5 Mar. 2014)
- T. Heinzel*, Heinrich-Heine-Universität Düsseldorf: Electronic Transport in Inhomogeneous Magnetic Fields (14 Mar. 2014)



- M. Sterrer*, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin: Surface Science Models of Heterogeneous Catalysts – Probing Metal-Support Interaction with XPS and Auger Parameter Analysis (24 Mar. 2014)
- Y. Ikeda*, Kyoto University, Japan: Phonon Softening in Paramagnetic bcc Iron and Relationship with Phase Transition (24 Mar. 2014)
- E. Spiecker*, Friedrich-Alexander-Universität Erlangen-Nürnberg: From Graphite to Graphene: How Size Affects the Structure of Dislocations (2 Apr. 2014)
- B. Sarac*, Helmholtz-Zentrum Geesthacht and Hamburg University of Technology (TUHH): Toughening Mechanism of Advanced Microstructures: Experimental and Computational Approach (4 Apr. 2014)
- K. Ogle*, Ecole Nationale Supérieure Chimie Paris, Paris, France: Atomic Emission Spectroelectrochemistry: A New Look at the Corrosion, Dissolution and Passivation of Complex Materials (8 Apr. 2014, Colloquium)
- T.J.J. Müller*, Heinrich-Heine-Universität Düsseldorf: Functional Dyes on the Basis of Phenothiazines - Luminescent Electrophores in Solution, on Surfaces, and in Hybridmaterials (6 May 2014)
- S.R. Kalidindi*, Georgia Institute of Technology, Atlanta, Georgia: Microstructure Informatics for Mining Structure-Property-Processing Linkages from Large Datasets (7 May 2014, Colloquium)
- S. Takagi*, JFE Steel Corporation, Steel Research Laboratory, Kawasaki, Japan: Hydrogen Embrittlement Fracture Behavior of Ultra High Strength Steels (8 May 2014)
- J. Möller*, University Erlangen-Nürnberg: Atomistic Simulations of Fracture in bcc-Iron: Influence of the Interatomic Potential and Crack Front Curvature (13 May 2014)
- A. Bachmaier*, Universität des Saarlandes, Saarbrücken: The Formation of Supersaturated Solid Solutions in Immiscible Alloys Processed by Severe Plastic Deformation (15 May 2014)
- T. Shao*, State Key Laboratory of Tribology (SKLT), Tsinghua University, Beijing, China: Advances in Thin Solid Coatings (6 June 2014)
- J.T.M. De Hosson*, University of Groningen, The Netherlands: Metallic Muscles at Work (11 June 2014, Colloquium)
- R. Adharapurapu*, GE India Technology Center, Bangalore, India: Effective Hf-Pd Co-doped β -NiAl(Cr) Coatings for Single Crystal Superalloys: A Combinatorial Investigation (16 June 2014)
- H. Tueysuez*, Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr: Electrochemical Water Oxidation over Non-Noble Ordered Mesoporous Metal Oxides (18 June 2014)
- P. Kejzar*, Technical University of Liberec, Czech Republic: Structure and High Temperature Mechanical Properties of Ternary Fe-Al-Zr-type Intermetallic Alloys (24 June 2014)
- W. Windl*, Ohio State University, Columbus, Ohio, USA: Surface Modification and Oxidation of Graphene and Novel 2D Materials (27 June 2014)
- N.P. Padture*, Brown University, Providence, RI, USA: Thermal Barrier Coatings for High-Efficiency Gas-Turbine Engines in Aircraft and Power Plants (30 June 2014)
- K. Limmer*, Missouri University of Science and Technology, USA: Capabilities of DFT for Steel Alloy Design (1 July 2014)
- B. Roldan*, Ruhr-University Bochum: Nanocatalysts at Work (9 July 2014)
- M. De Graef*, Carnegie Mellon University, Pittsburgh, USA: Forward Modeling and a New Dictionary Approach to EBSD Pattern Indexing (16 July 2014)
- A. Stark*, Max Planck Institute of Colloids and Interfaces, Potsdam-Golm: More than 'just Carbon' - With N-Doping to Sustainable Metallic Coatings & Composites (24 July 2014)
- K. Artyushkova*, University of New Mexico, Albuquerque, NM, USA: Design Levers for Performance and Durability of Catalyst Layers (28 July 2014)
- M. Bamberger*, Technion – Israel Institute of Technology, Haifa, Israel: Cost-Effective High-Performance Materials & Processes (6 Aug. 2014)
- P. Zabierowski*, Warsaw University of Technology, Poland: Electrical Characterization of CIGS-based Solar Cells (7 Aug. 2014)
- B. Kaplan*, KTH Royal Institute of Technology, Stockholm, Sweden: Thermodynamics of Cr-Containing Cemented Carbides (18 Aug. 2014)
- A. Blomqvist*, Sandvik Coromant, Stockholm, Sweden: From Atomistic Modelling to Cutting Tool Performance (19 Aug. 2014)



- S.H. Oh*, POSTECH, Pohang, Korea: Role of Nano-Scale Twins in Deformation Processes of Metal Nanowires and Sea Shells (20 Aug. 2014)
- L. Dézerald*, CEA, DEN, Service de Recherches de Métallurgie Physique, Gif-sur-Yvette, France: *Ab initio* Modelling of Screw Dislocations in bcc Transition Metals (25 Aug. 2014)
- N. Gurao*, IIT Kanpur, India: Study of Heterogeneity of Plastic Deformation using Electron Back Scatter Diffraction and Synchrotron Micro-Diffraction (1 Sep. 2014)
- J.B. Vogt*, Lille University of Science and Technology, France: Fatigue of Alloys and of Metallic Alloys (4 Sep. 2014)
- C. Reina*, University of Pennsylvania, PA, USA: Atomistic Phase Field Model of Rapid Crystallization of Germanium from Amorphous Thin Films (5 Sep. 2014)
- E.S. Park*, Seoul National University, Seoul, Republic of Korea: Development of Bulk Metallic Glass Composites with “Super-elastic” Secondary Phase (11 Sep. 2014)
- Z.-K. Liu*, Pennsylvania State University, State College, PA, USA: Prediction of Diffusion Coefficients in Liquid and Solids (12 Sep. 2014)
- W.-J. Li*, Industrial Technology Research Institute, Hsinchu, Taiwan: Effects of Extrinsic Cupric on Pitting Corrosion of Aluminum Radiator (15 Sep. 2014)
- G. Csanyi*, University of Cambridge, UK: Phase Diagrams ‘ex nihilo’ (16 Sep. 2014)
- S. Zhang*, University of Cambridge, UK: Band Structures and Polarizations of Nonpolar GaN Light Emitting Diodes (18 Sep. 2014)
- A. Ceguerra*, Australian Centre for Microscopy & Microanalysis, The University of Sydney, Australia: Computational Atom Probe Microscopy – Chemical Microanalysis at the Atomic Scale (24 Sep. 2014)
- D. Zander*, RWTH Aachen: Influence of Alloying Elements and Microstructure on Corrosion of Magnesium Alloys (30 Sep. 2014)
- M. Alam*, TU Bergakademie Freiberg: Computational Study of Materials via Multiscale Modeling (2 Oct. 2014)
- D.C. Lagoudas*, Dept. of Aerospace Engineering, Texas A&M University, USA: Driving Force for Crack Growth and Toughness Enhancement in Shape Memory Alloy Actuators (10 Oct. 2014)
- P. Albers*, Kompetenzzentrum Elektronenmikroskopie/Oberflächenanalytik, AQura GmbH, Hanau: Hydrogen on and in Materials: Observations in Catalysis and Production Technology (27 Oct. 2014)
- C. Greiner*, Karlsruhe Institute of Technology (KIT), Karlsruhe: Materials Tribology: Grain Size Evolution of High-Purity Copper under Reciprocating Tribological Loading (28 Oct. 2014)
- L. Kranz*, EMPA - Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland: Cadmium Telluride Solar Cells in Substrate Configuration (31 Oct. 2014)
- G. Schmitz*, Institut für Materialwissenschaft, Universität Stuttgart: Understanding Atom Probe Tomography – A Theoretical Challenge (4 Nov. 2014, Colloquium)
- D. Trinkle*, University of Illinois at Urbana-Champaign, IL, USA: Forming Nanoprecipitates at Dislocations: Hydrides in Pd and Silicides in Ni (5 Nov. 2014)
- R. Hennig*, University of Florida, Gainesville, FL, USA: VASPsol: An Implicit Solvation Model for Density-Functional Calculations (6 Nov. 2014)
- S. Korte-Kerzel*, RWTH Aachen: Plasticity in Anisotropic and Brittle Materials - Testing at the Microscale and at High Temperatures (10 Nov. 2014)
- M. Wu*, Paul-Drude-Institut für Festkörperelektronik, Berlin, and Tampere University of Technology, Tampere, Finland: Alternative to Strancki-Krastanov Quantum Dots? Formation and Phase Transformation of Bi-Containing Quantum Dot-Like Clusters in Annealed GaAsBi (13 Nov. 2014)
- M. Mikami*, MCHC R&D Synergy Center, Inc., Yokohama, Japan: Theoretical Approach for White-LED (Oxy)Nitride Phosphors: State of the Art (13 Nov. 2014)
- A. Davydok*, IM2NP - UMR CNRS 7334 & Universities of Aix-Marseille and Toulon, France: X-Ray Diffraction Investigation of Mechanical Properties of Nanostructures (21 Nov. 2014)
- M. Getzlaff*, Heinrich Heine Universität Düsseldorf: Influence of Hydrogen to Nanoscaled Systems (25 Nov. 2014)
- K. Doda*, Northwestern University, Evanston, IL, USA: Tribology in Multi-Scale Metal Forming (28 Nov. 2014)



B. Alling, Linköping University, Linköping, Sweden: Modeling Magnetic Materials at High Temperature from First-Principles: Disordered Magnetism, Vibrations, Phase Stability, and Magnetic Exchange Interactions (10 Dec. 2014)

2015

M. Rabe, Universiteit Leiden, The Netherlands: New Pictures of an Old Motif: A Physical Chemists View on Coiled-Coil (9 Jan. 2015)

E. George, Ruhr-Universität Bochum: Phase Stability and Mechanical Properties of High- and Medium-Entropy Alloys (14 Jan. 2015, Colloquium)

B. Ziebarth, Fraunhofer-Institut für Werkstoffmechanik IWM, Freiburg: Atomistic Studies on the Interaction of Impurity Atoms with Extended Defects in Silicon (26 Jan. 2015)

S.I. Rao, EPFL, Lausanne, Switzerland: Large Scale 3-D Dislocation Dynamics and Atomistic Simulations of Flow and Strain-Hardening Behavior of Metallic Micropillars (5 Feb. 2015)

T. Mohri, Institute for Materials Research, Tohoku University, Sendai, Japan: Towards First-principles Continuous Displacement Cluster Variation Method within Computational Materials Science Projects in Japan (9 Feb. 2015, Colloquium)

S.W. D'Souza, Max Planck Institute for Chemical Physics of Solids, Dresden: Magnetic Properties and Electronic Structure of Mn-Ni-Ga Magnetic Shape Memory Alloys (9 Feb. 2015)

H. Cohen, Weizmann Institute of Science, Rehovot, Israel: Band Alignment & Charge Transport Mechanisms in CREM of ETA Solar Cells (10 Feb. 2015, Colloquium)

R. Hoffmann-Vogel, Karlsruhe Institute of Technology (KIT), Karlsruhe: High-Resolution Kelvin Probe Force Microscopy (12 Feb. 2015)

M. Garbrecht, Linköping University, Linköping, Sweden: Aberration-Corrected HR(S)TEM as an Ultra-Precise Tool in Materials Science (13 Feb. 2015)

W. Solano-Alvarez, University of Cambridge, Cambridge, UK: Microstructural Degradation of Bearing Steels under Rolling Contact Fatigue (17 Feb. 2015)

B.A. Szost, European Space Agency, Noordwijk, The Netherlands: Hydrogen Trapping in Bearing Steels: Mechanisms and Alloy Design (18 Feb. 2015)

M. Poková, Charles University, Prague, Czech Republic: Electron Microscopy Study of Aluminium Alloys Enhanced by Zr (23 Feb. 2015)

F. von Wrochem, Materials Science Laboratory, Sony Deutschland, Stuttgart: Insights into Work at the Research Facility of Sony in Germany (2 Mar. 2015)

G. Requena, German Aerospace Center (DLR), Cologne: Research on Metallic Structures and Hybrid Materials Systems at the DLR (10 Mar. 2015)

R. Shiju, University of Amsterdam, The Netherlands: Catalysis in Action: A Few Short Stories (17 Mar. 2015)

J. Janßen, Technische Universität Kaiserslautern: An Atomistic Study of C in Alpha-Fe Grain Boundaries (27 Mar. 2015)

R. Hielscher, Technische Universität Chemnitz: MTEX - A Texture Calculation Toolbox (14 Apr. 2015)

K.F. Domke, Max Planck Institute for Polymer Research, Mainz: A Molecular View on Sensitized Solar Cells (14 Apr. 2015)

U. Pietsch, University of Siegen: Structure to Property Relations of Single MBE Grown GaAs and InAs Nanowires onto Silicon (111) by X-Ray Nanodiffraction (24 Apr. 2015)

C. Teichert, Montanuniversität Leoben, Leoben, Austria: Advanced AFM based Electrical Characterization on the Nanometer Scale (27 Apr. 2015)

J. Popovic, Max Planck Institute for Solid State Research, Stuttgart: Individual Contribution of the Ionic Species to the Ionic Conduction: From Lithium Containing Liquid to Liquid-Solid Composite Electrolytes (28 Apr. 2015)

D. Anselmetti, Bielefeld University, Bielefeld: Single Molecule Interaction Analysis: From Nanopores and Catch Bonds (30 Apr. 2015)

R. Reed, University of Oxford: Superplasticity in Ti-6Al-4V: Characterisation, Modelling and Applications (5 May 2015)

Y. Amoyal, Technion - Israel Institute of Technology, Haifa, Israel: Thermoelectric Materials Design via Microstructure and Composition Manipulations: Experimental and Computational Approaches (12 May. 2015, Colloquium)

T. Frolov, University of California, Berkeley, USA: Many Faces of Interfaces (13 May 2015, Colloquium)



- P. Haynes*, Imperial College London, UK: Linear-Scaling DFT and TDDFT with Optimised Local Orbitals and Plane-Waves (19 May 2015)
- M. Militzer*, The University of British Columbia, Vancouver, BC, Canada: Next Generation Phase Transformation Models for Advanced Low-carbon Steels (20 May 2015)
- W. Wolf*, Materials Design®, Paris, France: MedeA Software Package Applications (21 May 2015)
- R. Griessen*, VU University, Amsterdam, and Amsterdam University College, The Netherlands: Hydrogenography: Shedding Light on Switchable Metal-Hydride Mirrors (1 June 2015)
- G. Wilde*, Universität Münster: Shear Bands in Metallic Glasses: Atomic Mobility, Relaxation and Excess Volume (8 June 2015)
- G. Langer*, University of Cambridge, UK: Coccolithophores – With Special Emphasis on Calcification, Coccoliths, and Coccospheres (18 June 2015)
- R. Hoffmann*, Ludwig-Maximilians-Universität München: Coccolithophores – A View Inside on Coccolith Architecture and Crystallographic Orientation (18 June 2015)
- J.C. Yang*, University of Pittsburgh, PA, USA: Structural Dynamics of Surface Reactions: Oxidation and Heterogeneous Catalysis (19 June 2015)
- D. Stroz*, University of Silesia, Katowice, Poland: Progress in Understanding of Phase Transformations in NiTi Shape Memory Alloys (23 June 2015, Colloquium)
- V.I. Levitas*, Iowa State University, Ames, IA, USA: Interaction between Phase Transformations and Dislocations at the Nanoscale: Phase Field Approach (23 June 2015)
- F.H. Akbary*, TU Delft, The Netherlands: Assessment of Mechanical Properties in Quenching and Partitioning Steels (23 June 2015)
- G. Gerstein*, Leibniz Universität Hannover: The Electroplastic Effect in Metallic Materials - Former Investigations and Current Results (29 June 2015)
- S. Wohletz*, Technische Universität Darmstadt: Bond Formation by Cold Extension Welding (1 July 2015)
- B. Sakar*, Galgotias University, India: Finite-Temperature Lattice Dynamics of Binary Chalcogenides within the Quasi-Harmonic Approximation (16 July 2015)
- C.G. Van de Walle*, University of California, Santa Barbara, CA, USA: Oxides for Energy and Electronics (23 July 2015)
- M. Finnis*, Imperial College, London, UK: Thermodynamics of Interfaces (6 Aug. 2015)
- S. Meka*, Max-Planck-Institute for Intelligent Systems (formerly Max-Planck-Institute for Metals Research), Stuttgart: Nitriding Induced Microstructural Transformations in Iron-Based Alloys (12 Aug. 2015)
- R. Nazarov*, Lawrence Livermore National Lab, Livermore, CA, USA: *Ab initio* Calculations in Petaflop Era: Properties of Molecules, Metals and Insulators Computed with Chemical Accuracy using Quantum Monte Carlo (3 Sep. 2015)
- B.P. Gorman*, Metallurgical and Materials Engineering, Colorado School of Mines, Golden, CO USA: Adventures at the Atomic Scale: Diffusion and Defect Chemistry using Correlative STEM and Atom Probe Tomography (4 Sep. 2015)
- P. Felfer*, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nuremberg: New Insights into Interfaces of Metals, Oxides and Nanoparticles via APT (21 Sep. 2015)
- J. Eckert*, IKM Dresden: Tailoring Metastable Metallic Materials for Engineering Applications (14 Oct. 2015, Colloquium)
- S.J.J. Sandoval*, Centro de Investigación y de Estudios Avanzados del IPN, Unidad Querétaro, Mexico: Properties of CuCdTeO Films: From Solid Solutions to Composites (9 Nov. 2015)
- C. Leinenbach*, Laboratory for Joining Technologies and Corrosion, EMPA - Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland: Design and Characterization of Novel TiAl Alloys and Metal-Diamond Composites for Beam-based Additive Manufacturing (10 Nov. 2015)
- K. Loza*, Inorganic Chemistry and Center for Nanointegration Duisburg-Essen (CeNIDE), Essen: Nanostructure of Wet-Chemically Prepared, Polymer-Stabilized Silver–Gold Nanoalloys (6 nm) over the Entire Composition Range (10 Nov. 2015)
- E. Bitzek*, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nuremberg: Atomistic Studies on Dislocation – Interface Interactions: from Planar Coherent Twin Boundaries to Curved Interphase Boundaries (7. Dec. 2015, Colloquium)
- M. Sebastiani*, Roma TRE University, Rome, Italy: Measurement of Fracture Toughness by Nanoindentation Methods: Recent Advances and Future Challenges (14. Dec. 2015)



Lectures and Teaching at University

2013

- G. Dehm*, Universität Salzburg, Austria, Materialwissenschaften 1, WS 2012/13
- G. Dehm*, Ruhr-Universität Bochum: Mechanische Eigenschaften in kleinen Dimensionen, SS 2013
- G. Dehm*, Ruhr-Universität Bochum: Advanced Transmission Electron Microscopy, WS 2013/2014
- A. Erbe*, Ruhr-Universität-Bochum: Spectroscopy of Surfaces and Interfaces, WS 2012/2013
- A. Erbe*, Ruhr-Universität-Bochum: Spectroscopy of Surfaces and Interfaces, WS 2013/2014
- A. Erbe, M. Valtiner, M. Muhler, K.J.J. Mayrhofer, & M. Rohwerder*, Ruhr-Universität-Bochum: Physical chemistry of surfaces and interfaces, Oct 2013
- C. Freysoldt, A. Schindlmayr*, Universität Paderborn: Computerphysik, WS 2013/14
- T. Hickel*, Ruhr-Universität Bochum: Introduction to Quantum Mechanics in Solid-State Physics, WS 2013/2014
- C. Kirchlechner*, University of Leoben: Metallkundliche Arbeitsverfahren, WS 2013/2014
- K.J.J. Mayrhofer*, Ruhr-Universität Bochum: Advanced Methods in Electroanalytical Chemistry Part I, WS 2012/2013
- K.J.J. Mayrhofer*, Ruhr-Universität Bochum: Advanced Methods in Electroanalytical Chemistry Part II, SS 2013
- K.J.J. Mayrhofer*, Ruhr-Universität Bochum: Advanced Methods in Electroanalytical Chemistry Part I, WS 2013/2014
- J. Neugebauer*, Ruhr-Universität Bochum: Application and Implementation of Electronic Structure Methods, SS 2013
- D. Raabe*, RWTH Aachen: Micromechanics of Materials, SS 2013
- D. Raabe*, SurMat IMPRS Teaching, Max-Planck-School: Dislocation and Interfaces – Materials Mechanics, Mar 2013
- M. Rohwerder*, Ruhr-Universität Bochum: Surface Science and Corrosion, WS 2013/2014
- M. Rohwerder*, Ruhr-Universität Bochum: Surface Analysis and Characterization, WS 2013/2014
- F. Roters*, RWTH Aachen: Prozess- und Werkstoffsimulation, WS 2012/2013
- F. Roters*, RWTH Aachen: Prozess- und Werkstoffsimulation, WS 2013/2014
- R. Spatschek, F. Varnik*, Ruhr-Universität Bochum: Thermodynamics and Statistical Physics, WS 2013/2014
- S. Zaefferer, T. Hickel, U. Prahl*, RWTH Aachen: Microstructures, Microscopy & Modelling, SS 2013
- S. Zaefferer*, University of British Columbia, Vancouver, Canada: Textures, Microstructures and Microscopy, Summer course 2013

2014

- G. Dehm*, Ruhr-Universität Bochum: Mechanische Eigenschaften in kleinen Dimensionen, SS 2014
- G. Dehm*, Ruhr-Universität Bochum: Advanced Transmission Electron Microscopy, WS 2014/2015
- A. Erbe*, Ruhr-Universität-Bochum: Spectroscopy of Surfaces and Interfaces, WS 2014/2015
- C. Freysoldt*, Universität Paderborn: Quantenchemie, SS 2014
- T. Hickel*, Ruhr-Universität Bochum: Introduction to Quantum Mechanics in Solid-State Physics, WS 2014/2015
- K.J.J. Mayrhofer*, Ruhr-Universität Bochum: Advanced Methods in Electroanalytical Chemistry Part II, SS 2014
- K.J.J. Mayrhofer*, Ruhr-Universität Bochum: Advanced Methods in Electroanalytical Chemistry Part I, WS 2014/2015
- J. Neugebauer*, Ruhr-Universität Bochum: Application and Implementation of Electronic Structure Methods, SS 2014
- D. Raabe*, RWTH Aachen: Micromechanics of Materials, SS 2014
- M. Rohwerder*, Ruhr-Universität Bochum: Surface Science and Corrosion, WS 2014/2015
- F. Roters*, RWTH Aachen: Prozess- und Werkstoffsimulation, WS 2014/2015
- F. Roters*, RWTH Aachen: ICME for Steels, WS 2014/2015



- C. Scheu, RWTH Aachen: Electron Microscopy and Analytical Techniques, WS 2014/2015
R. Spatschek, F. Varnik, Ruhr-Universität Bochum: Thermodynamics and Statistical Physics, WS 2014/2015
M. Valtiner, Ruhr-Universität Bochum: Non-linear optics, SS 2014
S. Zaeferrer, T. Hickel, U. Prah, RWTH Aachen: Microstructures, Microscopy & Modelling, SS 2014
S. Zaeferrer, Universität Wien, Austria: Textures, Microstructures and Microscopy, Autumn course 2014

2015

- G. Dehm, Ruhr-Universität Bochum: Mechanische Eigenschaften in kleinen Dimensionen, SS 2015
G. Dehm, Ruhr-Universität Bochum: Transmissionselektronenmikroskopie für Fortgeschrittene, WS 2015/2016
T. Hickel, Ruhr-Universität Bochum: Introduction to Quantum Mechanics in Solid-State Physics, WS 2015/2016
K.J.J. Mayrhofer, Ruhr-Universität Bochum: Advanced Methods in Electroanalytical Chemistry Part II, SS 2015
K.J.J. Mayrhofer, M. Muhler, M. Valtiner, S. Wippermann, & M. Rohwerder, Ruhr-Universität-Bochum: Physical chemistry of surfaces and interfaces, Sept. 2015
J. Neugebauer, Ruhr-Universität Bochum: Application and Implementation of Electronic Structure Methods, SS 2015
D. Raabe, SurMat IMPRS Teaching, Max-Planck-School: Dislocation and Interfaces – Materials Mechanics, March 2015
D. Raabe, RWTH Aachen: Micromechanics of Materials, SS 2015
M. Rohwerder, Ruhr-Universität Bochum: Surface Science and Corrosion, WS 2015/2016
M. Rohwerder, Ruhr-Universität Bochum: Surface Analysis and Characterization, WS 2015/2016
C. Scheu, RWTH Aachen: Advanced Characterization, SS 2015
R. Spatschek, F. Varnik, Ruhr-Universität Bochum: Thermodynamics and Statistical Physics, WS 2015/2016
S. Zaeferrer, T. Hickel, U. Prah, RWTH Aachen: Microstructures, Microscopy & Modelling, SS 2015



Invited Talks at Conferences and Colloquia

2012 (not included in Scientific Report 2011/2012)

Enax, J.; Prymak, O.; Fabritius, H.-O.; Raabe, D.; Epple, M.: *Shark teeth: Relating hierarchical structure, composition, and the resulting mechanical properties for bio-inspiration*. (Workshop: Biocompatible Coatings and their applications, University Duisburg-Essen and Evonik. Essen, Germany. 2012-09-13 to 2012-09-14).

Epple, M.; Enax, J.; Prymak, O.; Fabritius, H.-O.; Raabe, D.: *Shark teeth: Relating hierarchical structure, composition, and the resulting mechanical properties for bio-inspiration*. (Ringberg Symposium 2012: Generation of Inorganic Functional Materials - Implementation of Biomineralization Principles, Schloss Ringberg. Rottach-Egern, Germany. 2012-09-30 to 2012-10-03).

Grabowski, B.: *Quantitative Limits of DFT Phase Transitions: Importance of Anharmonicity, Point Defects and Exchange-Correlation Functionals*. (Workshop on "Simulation of Complex Microstructure Pathways for Alloy Design." McMaster University, Hamilton, Canada. 2012-11-29 to 2012-11-30).

Grabowski, B.; Tasan, C.: *Design of Adaptive Structural Materials: A coupled theoretical-experimental approach*. (10th Materials Day. Bochum, Germany. 2012-11-09).

Gutiérrez-Urrutia, I.: *Electron channelling contrast imaging under controlled diffraction conditions: A powerful technique for quantitative microstructural characterization of deformed materials*. (International Symposium on Plastic Deformation and Texture Analysis. Alcoy, Spain. 2012-09-24 to 2012-09-25).

Mayrhofer, K. J. J.: *Investigations of fuel cell electrocatalyst degradation - A fundamental perspective*. (Seminar lecture at Norwegian University of Science and Technology. Trondheim, Norway. 2012-11-01).

Mayrhofer, K. J. J.: *Scanning Flow Cell System for Fully Automated Screening of Electrocatalyst Materials*. (Seminar lecture at Danish University of Technology. Copenhagen, Denmark. 2012-10-11).

Neugebauer, J.: *Ab initio based free energy sampling*. (Workshop. Lake Arrowhead, CA, USA. 2012-12-10 to 2012-12-14).

Neugebauer, J.: *Introduction to Density Functional Theory from a Materials Science Perspective*. (Workshop. Lake Arrowhead, CA, USA. 2012-10-12 to 2012-10-14).

Neugebauer, J.: *Introduction to Density Functional Theory from a Materials Science Perspective*. (IPAM Workshop. Los Angeles, CA, USA. 2012-09-19).

Nikolov, S.; Fabritius, H.-O.; Friák, M.; Raabe, D.: *The Multiscale Modeling of Biomaterials as a Tool for Understanding the Design Principles in Nature*. (IVth National Crystallographic Symposium. Sofia, Bulgaria. 2012-11-01 to 2012-11-03).

Plancher, E.; Tasan, C. C.; Sandlöbes, S.; Raabe, D.: *Multi-scale characterization of the giant fault mechanism in Ti-Nb based gum cast alloys*. (12th Materials Science & Technology (MS&T) Conference. Pittsburgh, PA, USA. 2012-10-07 to 2012-10-11).

Ram, F.; Zaefferer, S.; Khorashadizadeh, A.; Jäpel, T.; Davut, K.: *Electron Diffraction in Scanning Electron Microscope and its applications*. (Institut für Werkstofftechnik, Helmut Schmidt Universität. Hamburg, Germany. 2012-11).

Rohwerder, M.: *Corrosion - Aqueous*. (Gordon Research Seminar: Corrosion - Aqueous, Colby-Sawyer College. New London, NH, USA. 2012-07-08 to 2012-07-13).

Springer, H.; Raabe, D.: *Rapid Alloy Prototyping - Effizientes Legierungsdesign durch kombinatorische Metallurgie und Prozesstechnik*. (Institutsseminar at IEhK - RWTH Aachen, Germany. 2012-12-13).

Springer, H.; Raabe, D.: *Rapid Alloy Prototyping - Effizientes Legierungsdesign durch kombinatorische Metallurgie und Prozesstechnik*. (VDEh Grundlagenausschuss Metallurgie. Düsseldorf, Germany. 2012-06-22).

Tasan, C. C.: *Multi-scale (in-situ) investigation of Adaptive Structural Materials*. (École Seminar, Nationale Supérieure des Mines de St-Étienne, France. 2012-09-20).

2013

Auinger, M.: *Phase Diagrams with FACTSage - Speaking different Languages for Thermochemical Properties*. (GTT-Workshop on Thermodynamic Simulations in Industry. Herzogenrath, Aachen, Germany. 2013-07-05).

Boehlert, C.; Chen, Z.; Gutiérrez-Urrutia, I.; Pérez-Prado, M. T.; Llorca, J.; Bohlen, J.; Yi, S.; Letzig, D.: *In-situ analysis of deformation and recrystallization mechanisms in magnesium alloys*. (International Symposium on Plasticity 2013. Nassau, Bahamas. 2013-01-03 to 2013-01-08).



- Brinckmann, S.: *Combining Atomistic and Dislocation Dynamics into a Concurrent Multiscale Model*. (Seminar zur Physik der kondensierten Materie, Institut für Theoretische und Angewandte Physik, Universität Stuttgart, Germany. 2013-07-09 to 2013-07-09).
- Brinckmann, S.: *Deformation localization and strain hardening during micro shear experiments on gold in the SEM*. (Nanomechanical Testing in Materials Research and Development IV. Olhão (Algarve), Portugal. 2013-10-06 to 2013-10-11).
- Brinckmann, S.: *Joining 3D Dislocation Dynamics and 3D Molecular Dynamics into a Concurrent Multiscale Model*. (SES 50th Annual Technical Meeting and ASME-AMD Annual Summer Meeting. Providence, RI, USA. 2013-07-28 to 2013-07-31).
- Brinckmann, S.: *Discrete Disclination Dynamics in comparison to Discrete Dislocation Dynamics*. (SES 50th Annual Technical Meeting and ASME-AMD Annual Summer Meeting. Providence, RI, USA. 2013-07-28 to 2013-07-31).
- Brinckmann, S.: *Discrete Disclination Dynamics & Discrete Dislocation Dynamics*. (4th International Conference on Ferromagnetic Shape Memory Alloys. Boise, ID, USA. 2013-06-03 to 2013-06-07).
- Brinckmann, S.: *Studying very short cracks with a 3D multiscale model*. (DPG-Frühjahrstagung der Sektion Kondensierte Materie (SKM). Regensburg, Germany. 2013-03-10 to 2013-03-15).
- Choi, P.-P.: *Characterization of internal interfaces in Cu(In,Ga)Se₂ thin-film solar cells using correlative microscopy*. (IEEE - Photovoltaic Specialist Conference. Denver, CO, USA. 2013-06-08 to 2013-06-13).
- Choi, P.: *Characterization of κ -carbide precipitates in austenitic Fe-Mn-Al-C steels using atom probe tomography*. (Thermec 2013. Las Vegas, NV, USA. 2013-12-02 to 2013-12-06).
- Choi, P.: *Atom Probe study of Cu₂ZnSnSe₄ thin-films prepared by co-evaporation and post-deposition annealing*. (Eurostat 2013. Sevilla, Spain. 2013-09-08 to 2013-09-13).
- Choi, P.: *Atomic-scale insights into thin-film solar cells by Atom Probe Tomography*. (Korean German Forum on Nanotechnology. Düsseldorf, Germany. 2013-08-28).
- Choi, P.: *Overview of atom probe tomography research at MPIE*. (Seminar at the Ruhr University of Bochum, Germany. 2013-01-31).
- Cojocaru-Mirédin, O.; Stoffers, A.; Würz, R.; Raabe, D.: *Role of internal interfaces in solar cells*. (International Workshop on Interface-dominated Materials. Bochum, Germany. 2013-10-21 to 2013-10-28).
- Cojocaru-Mirédin, O.: *Atom Probe Tomography*. (2013 MRS Spring Meeting & Exhibit. San Francisco, CA, USA. 2013-04-01 to 2013-04-05).
- Dehm, G.: *Atomic resolution interface study of VN and Cu films on MgO using Cs corrected TEM*. (Microscopy Conference MC 2013. Regensburg, Germany. 2013-08-25 to 2013-08-30).
- Dehm, G.: *Struktur und Nano-/Mikromechanik von Materialien*. (Thüringer Werkstofftag. Ilmenau, Germany. 2013-03-21).
- Dehm, G.: *Struktur und Nano-/Mikromechanik von Materialien*. (Vorstandssitzung des Stahlinstituts VDEh und der Wirtschaftsvereinigung Stahl. Düsseldorf, Germany. 2013-03-14).
- Dehm, G.; Kirchlechner, C.; Imrich, P. J.; Smolka, M.; Wimmer, A. C.; Yang, B.; Zhang, Z.: *Plasticity and Fracture at Small Length Scales: From Single Crystals Towards Interfaces*. (Workshop on Mechanical Behaviour of Systems - 4. Coorg, Karnataka, India. 2013-02-24 to 2013-02-28).
- Dehm, G.: *Mechanical Behavior of Materials with a Focus on Thin Films*. (MACAN-Infineon Idea Exchange Meeting 2013. Villach, Austria. 2013-01-15 to 2013-01-18).
- Dehm, G.: *In situ Transmission Electron Microscopy*. (3rd School on Advanced TEM Quantitative Techniques. Saint-Aygulf, France. 2013-05-13 to 2013-05-24).
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Cojocar-Mirédin, O.; Stoffers, A.; Soni, P. U.; Würz, R.; Raabe, D.: *Interfaces in Semiconductors: Application to photovoltaic materials*. (61st American Vacuum Society International conference. Baltimore, MA, USA. 2014-11-09 to 2014-11-14).

Dehm, G.: *Plasticity of supersaturated Cu–Cr alloys and Cu–Cr multilayers*. (MACAN Meeting. Düsseldorf, Germany. 2014-06-30 to 2014-07-02).

Dehm, G.: *Cu–Cr nanocomposites and multilayers*. (Gordon Research Conference: Thin Film & Small Scale Mechanical Behavior. Bentley University, Boston, MA, USA. 2014-07-13 to 2014-07-18).

Dehm, G.: *In situ Transmission Electron Microscopy*. (GRK 1896 Summer School on In situ Microscopy. Hirschegg, Austria. 2014-09-21 to 2014-09-25).

Dehm, G.: *Localized mechanical study of individual interfaces in miniaturized Cu structures*. (MS&T14 - Materials Science & Technology 2014. Pittsburgh, PA, USA. 2014-10-12 to 2014-10-16).

Dehm, G.: *Small Scale Mechanical Testing: More than just a fashionably tool?! (Kolloquium für Mechanik, KIT. Karlsruhe, Germany. 2014-11-20 to 2014-11-20).*

Dehm, G.: *Differences in deformation behavior of Cu structures containing individual grain boundaries*. (Symposium RR: Scaling Effects in Plasticity - Synergy between Simulations and Experiments, Fall MRS. Boston, MA, USA. 2014-11-30 to 2014-12-05).

Dehm, G.: *From idealized bi-crystals towards applied polycrystals: Plastic deformation in small dimensions*. (Schöntal Symposium - Dislocation-based Plasticity. Kloster Schöntal, Germany. 2014-02-24 to 2014-02-28).

Dehm, G.; Imrich, P. J.; Wimmer, A. C.; Kirchlechner, C.: *From idealized bi-crystals towards applied polycrystals: Plastic deformation in small dimensions*. (TMS2014, 143rd Annual Meeting & Exhibition. San Diego, CA, USA. 2014-02-16 to 2014-02-20).

Dutta, B.; Hickel, T.; Neugebauer, J.: *Coupling of lattice dynamics and magnetism in magnetic shape memory alloys: Consequences for phase diagrams*. (Asia Sweden meeting on understanding functional materials from lattice dynamics (ASMFLD) conference. Indian Institute of technology Guwahati, India. 2014-01-09 to 2014-01-11).



- Enax, J.; Fabritius, H.-O.; Prymak, O.; Raabe, D.; Epple, M.: *Synthetic dental composite materials inspired by shark teeth*. (Annual Meeting of the Canadian Biomaterials Society. Halifax, Nova Scotia, Canada. 2014-06-04 to 2014-06-07).
- Enax, J.; Fabritius, H.-O.; Roters, F.; Raabe, D.; Epple, M.: *Synthetic dental composite materials inspired by the hierarchical organization of shark tooth enameloid*. (Third winter school within the DFG priority programme 1420 "Biomimetic Materials Research: Functionality by Hierarchical Structuring of Materials". Potsdam, Germany. 2014-03-17 to 2014-03-18).
- Fabritius, H.-O.: *Biological Photonic Structures*. (Keynote at the Kick-Off meeting of the DFG SPP1839, Wilhelm-Conrad-Roentgen Campus (Bessy II). Berlin, Germany. 2014-09-25).
- Fabritius, H.-O.: *Structure-property relations in biological composite materials*. (Seminar at Department of Earth- and Environmental Sciences, LMU München, Germany. 2014-02-21).
- Fabritius, H.-O.: *Structure-property relations in biological composite materials – The arthropod exoskeleton*. (Chemical Engineering and Materials Science Seminar, Michigan State University. East Lansing, MI, USA. 2014-10-09).
- Fabritius, H.-O.; Janus, A. M.; Wu, X.; Nikolov, S.; Eisenlohr, P.; Friák, M.; Neugebauer, J.; Raabe, D.: *Structure-property Relations in the Arthropod Exoskeleton, a Multifunctional Biological Composite*. (Materials Science & Technology (MS&T) 2014. Pittsburgh, PA, USA. 2014-10-12 to 2014-10-16).
- Freysoldt, C.: *Die S/PHI/nX-Klassenbibliothek - HPC-Programmierung für Physiker*. (Workshop „High-performance computing und datengetriebene Anwendungen in der MPG. Ringberg, Germany. 2014-02-05 to 2014-02-07).
- Freysoldt, C.; Pfanner, G.; Neugebauer, J.: *Role of the defect creation strategy for modelling dangling bonds in a-Si:H*. (MRS Spring Meeting. San Francisco, CA, USA. 2014-04-21 to 2014-04-25).
- Freysoldt, C.; Neugebauer, J.: *Point defects in supercells: Correction schemes for the dilute limit*. (Workshop on Ab-initio description of charged systems and solid/liquid interfaces. Santa Barbara, CA, USA. 2014-07-07 to 2014-07-11).
- Gutiérrez-Urrutia, I.; Raabe, D.: *Exploring nanotwinned structures in advanced high-Mn steels*. (International Symposium on Plasticity 2014. Freeport, BS, USA. 2014-01-03 to 2014-01-08).
- Haghighat, S. M. H.; Raabe, D.; von Pezold, J.; Race, C. P.; Körmann, F.; Friák, M.; Schäublin, R.; Neugebauer, J.; Egger, G. F.: *Recent development of modelling techniques in nano- and meso-scale simulations of dislocation dynamics*. (Workshop on Integrated Computational Materials Engineering (ICME). Rolduc Abbey, The Netherlands. 2014-06-24 to 2014-06-27).
- Haghighat, S. M. H.; Li, Z.; Zaefferer, S.; Reed, R.; Raabe, D.: *Mesoscale modeling of dislocation climb and primary creep process in single crystal Ni base superalloys*. (International Workshop on Dislocation Dynamics Simulations. Saclay, France. 2014-12-10 to 2014-12-12).
- Haghighat, S. M. H.; Eggeler, G. F.; Raabe, D.: *Mesoscale modelling of the influence of loading conditions on the dislocation mobility and creep process in single crystal Ni base superalloys*. (KTH Royal Institute of Technology. Stockholm, Sweden. 2014-04-24).
- Herbig, M.: *Joint Characterization of Crystallography and Chemistry on the Nanometer Scale by Correlative Electron Microscopy and Atom Probe Tomography*. (Seminar talk at the Institut für Metallkunde und Metallphysik, RWTH Aachen, Germany. 2014-10-21).
- Herbig, M.; Li, Y.; Morsdorf, L.; Goto, S.; Choi, P.-P.; Kirchheim, R.; Raabe, D.: *Bulk Nanostructured Steels*. (Seminar at Ecole Polytechnique Federale de Lausanne (EPFL), Institute of Materials (IMX). Lausanne, France. 2014-11-17).
- Herbig, M.; Choi, P.-P.; Raabe, D.: *Atom Probe Tomography and Correlative TEM/APT at the MPIE*. (Mini-Symposium Atom Probe Tomography, National APT Facility Eindhoven, TU Delft, The Netherlands. 2014-05-27).
- Herbig, M.; Kim, J.-H.; Ponge, D.; Li, Y.; Morsdorf, L.; Goto, S.; Haley, D.; Koyama, M.; Bashir, A.; Merzlikin, S. V.; Rohwerder, M.; Akiyama, E.; Tsuzaki, K.; Kuzmina, M.; Sandlöbes, S.; Choi, P.-P.; Kirchheim, R.; Raabe, D.: *Nanostructure Manipulation by Segregation Engineering*. (2nd ESISM International Workshop on Fundamental Issues of Structural Materials. Kyoto, Japan. 2014-03-11 to 2014-03-12).
- Herbig, M.; Li, Y.; Morsdorf, L.; Goto, S.; Choi, P.-P.; Kirchheim, R.; Raabe, D.: *Nanostructure Manipulation by Segregation Engineering*. (George Smith Symposium on Atom Probe Tomography. Oxford, UK. 2014-04-07 to 2014-04-09).
- Herbig, M.; Li, Y.; Morsdorf, L.; Goto, S.; Choi, P.-P.; Kirchheim, R.; Raabe, D.: *Recent Advances in Understanding the Structures and Properties of Nanomaterials*. (Gordon Research Conference on Structural Nanomaterials, The Chinese University of Hong Kong, China. 2014-07-20 to 2014-07-25).
- Herbig, M.; Choi, P.; Raabe, D.: *Atom Probe Tomography and Correlative TEM/APT at the MPIE*. (Inauguration of the Atom Probe at the Institute for Physics IA at the RWTH Aachen, Germany. 2014-03-17).
- Hickel, T.; Glensk, A.; Grabowski, B.; Körmann, F.; Neugebauer, J.: *Thermodynamics of materials up to the melting point: The role of anharmonicity*. (Asia Sweden Meeting on Understanding Functional Materials from Lattice dynamics. Guwahati, India. 2014-01-09 to 2014-01-11).

Hickel, T.; Nazarov, R.; McEniry, E.; Chakrabarty, A.; Dey, P.; Aydin, U.; Leyson, G.; Grabowski, B.; Neugebauer, J.: *Ab initio based understanding of the segregation and diffusion mechanisms of hydrogen in steels*. (Workshop on Hydrogen Embrittlement. Düsseldorf, Germany. 2014-01-23).

Hickel, T.; Nazarov, R.; McEniry, E.; Chakrabarty, A.; Dey, P.; Spatschek, R. P.; Grabowski, B.; Neugebauer, J.: *Ab initio based understanding of the segregation and diffusion mechanisms of hydrogen in steels*. (TMS Annual Meeting 2014. San Diego, CA, USA. 2014-02-16 to 2014-02-20).

Hickel, T.; Nazarov, R.; McEniry, E.; Chakrabarty, A.; Dey, P.; Aydin, U.; Leyson, G.; Grabowski, B.; Neugebauer, J.: *Ab initio based understanding of the segregation and diffusion mechanisms of hydrogen in steels*. (SteelyHydrogen 2014, International conference on hydrogen in steels. Ghent, Belgium. 2014-05-05 to 2014-05-07).

Hickel, T.; Körmann, F.; Bleskov, I.; Neugebauer, J.: *Ab Initio Based Modelling of Stacking Fault Energies in High-Strength Steels*. (International Seminar on Process Chain Simulation and Related Topics. Karlsruhe, Germany. 2014-03-17 to 2014-03-19).

Hickel, T.: *Understanding complex materials at finite temperatures by ab initio methods*. (Physikalisches Kolloquium der TU Chemnitz, Germany. 2014-04-16).

Hickel, T.: *Understanding complex materials at finite temperatures by ab initio methods*. (Colloquium at Institut für Materialwissenschaft, Universität Stuttgart, Germany. 2014-11-24).

Hickel, T.: *Ab initio basierte Methoden der mechanismen-orientierten Werkstoffentwicklung*. (Colloquium at Salzgitter-Mannesmann-Forschung GmbH. Duisburg, Germany. 2014-05-08).

Hickel, T.; Nazarov, R.; McEniry, E.; Dey, P.; Neugebauer, J.: *Impact of light elements on interface properties in steels*. (CECAM workshop "Modeling Metal Failure Across Multiple Scales". Lausanne, Switzerland. 2014-05-26 to 2014-05-27).

Hickel, T.; Glensk, A.; Nazarov, R.; Sözen, H. I.; Grabowski, B.; Neugebauer, J.: *Ab initio determination of point defects and derived diffusion properties in metals*. (International conference on diffusion in materials, DIMAT2014. Münster, Germany. 2014-08-17 to 2014-08-22).

Imrich, P. J.; Kirchlechner, C.; Motz, C.; Jeon, J. B.; Dehm, G.: *In Situ Electron Microscopy and Micro-Laue Study of Plasticity in Miniaturized Cu Bicrystals*. (CAMTEC III, Symposium on Fine-Scale Mechanical Characterisation and Behaviour. Cambridge, UK. 2014-04-07 to 2014-04-08).

Kirchlechner, C.; Motz, C.; Imrich, P. J.; Dehm, G.: *A novel view on fatigue damage at the micron scale by in situ X-ray μ Laue diffraction*. (TMS2014. San Diego, CA, USA. 2014-02-16 to 2014-02-20).

Kirchlechner, C.: *New insights into the plasticity of micron sized objects by in situ μ Laue diffraction*. (Lecture at Universität Münster, Germany. 2014-07-11).

Kirchlechner, C.: *From Idealized Single Crystals Towards Applied Polycrystals: Insights by X-Ray μ Laue Diffraction*. (The Thin Film & Small Scale Mechanical Behavior - Gordon Research Conference (GRC). Waltham, MA, USA. 2014-07-13 to 2014-07-18).

Kirchlechner, C.: *"What can we learn from X-ray μ Laue diffraction and where do we need to be careful?"*. (Seminar Talk at Helmholtz-Zentrum Geesthacht, Germany. 2014-11-27).

Kirchlechner, C.: *In situ micromechanics: An overview on synchrotron based μ Laue experiments*. (XTOP 2014. Villard de Lans, France. 2014-09-17).

Konijnenberg, P. J.; Stechmann, G.; Zaefferer, S.; Raabe, D.: *Advances in Analysis of 3D Orientation Data Sets Obtained by FIB-EBSD Tomography*. (2nd International Congress on 3D Materials Science 2014. Annecy, France. 2014-06-29 to 2014-07-02).

Körmann, F.; Hickel, T.; Neugebauer, J.: *Phase stabilities of metals and steels - The impact of magnetic excitations from first-principles*. (ADIS (Ab initio Description of Iron and Steel) Conference 2014. Ringberg Castle, Rottach-Egern, Germany. 2014-10-27).

Mayrhofer, K. J. J.: *Scanning Electrochemical Microscopy: Reading, Writing, Monitoring of Functional Interfaces*. (65th Annual Meeting of the International Society of Electrochemistry, Symposium. Lausanne, Switzerland. 2014-08-31 to 2014-09-05).

Mayrhofer, K. J. J.: *Basic Science and Key Technologies for Future Applications*. (Electrochemistry 2014, Johannes Gutenberg-Universität Mainz, Germany. 2014-09-22 to 2014-09-24).

Mayrhofer, K. J. J.: *Combinatorial study of fundamental electrocatalyst performance of materials for oxygen evolution*. (Heraeus seminar "From Sunlight to Fuels - Novel Materials and Processes for Photovoltaic and (Photo)Catalytic Applications". Bad Honnef, Germany. 2014-05-11 to 2014-05-16).

Mayrhofer, K. J. J.: *Oxygen electrochemistry as a cornerstone for sustainable energy conversion*. (International Symposium „Recent Achievements and Future Trends in Electrocatalysis“. Erlangen, Germany. 2014-04-04).



- Mayrhofer, K. J. J.: *Stability of catalyst materials - the key for the deployment of electrochemical energy conversion*. (Seminar lecture at Gesellschaft Deutscher Chemiker. Mülheim/Ruhr, Germany. 2014-01-10).
- Mayrhofer, K. J. J.: *Electrochemical Energy Conversion – The key for sustainable utilization of solar energy*. (Pregl Seminar lecture, National Institute of Chemistry. Ljubljana, Slovenia. 2014-10-23).
- Mayrhofer, K. J. J.: *Stability Investigations of Electrocatalysts for Electrochemical Energy Conversion*. (Seminar lecture at Helmholtz-Zentrum Berlin, Germany. 2014-07-03).
- Neugebauer, J.: *Interplay between Plasticity Mechanisms, Entropy, and Chemical Composition: An Ab initio approach*. (Plasticity 2014. Freeport, Bahamas. 2014-01-03 to 2014-01-08).
- Neugebauer, J.: *Materials design and discovery on the computer: Prospects and challenges*. (ICYS workshop. Tsukuba, Japan. 2014-01-13 to 2014-01-15).
- Neugebauer, J.: *Ab initio thermodynamics: A novel route to understand and design structural materials*. (NIMS. Tsukuba, Japan. 2014-01-15 to 2014-01-17).
- Neugebauer, J.: *Materials design based on predictive ab initio thermodynamics*. (Colloquium at Universität Magdeburg, Germany. 2014-01-28).
- Neugebauer, J.: *A brief introduction to surface science from a modelers perspective*. (Seminar at Ecole Polytechnique. Paris, France. 2014-03-11).
- Neugebauer, J.: *Pourbaix diagrams and stability in electrochemical environment*. (Catalysis Workshop Reimsburg, Germany. 2014-05-25 to 2014-05-28).
- Neugebauer, J.: *Connecting thermodynamic concepts of semiconductor defect chemistry with electrochemistry*. (Calphad Conference. Changsha, China. 2013-06-02 to 2013-06-06).
- Neugebauer, J.: *Understanding hydrogen embrittlement by a combined atomistic-analytic multiscale approach*. (MDRC Conference. Lake Arrowhead, CA, USA. 2014-06-08 to 2014-06-13).
- Neugebauer, J.: *Discrete Models – Material Properties from Electrons and Atoms*. (ICMEg Conference. Rolduc, The Netherlands. 2014-06-24 to 2014-06-27).
- Neugebauer, J.: *Efficient coarse graining of stochastic high-dimensional configuration spaces as fundament for a fully ab initio based materials design*. (Colloquium WIAS. Berlin, Germany. 2014-06-30).
- Neugebauer, J.: *First principles calculations of CCA stability*. (Workshop CC Alloys. München, Germany. 2014-07-15 to 2014-07-18).
- Neugebauer, J.: *Ab initio thermodynamics: A novel route to understand and design structural materials*. (CSW Conference. Tsukuba, Japan. 2014-08-20 to 2014-08-22).
- Neugebauer, J.: *Materials design and discovery on the computer: Prospects and challenges*. (IUMRS-ICA2014. Fukuoka, Japan. 2014-08-20 to 2014-08-22).
- Neugebauer, J.: *Materials design based on predictive ab initio thermodynamics*. (CMD25 JMC. Paris, France. 2014-08-24 to 2014-08-29).
- Neugebauer, J.: *Modeling Ductility at the Atomistic Scale: Status and Challenges*. (MSE 2014. Darmstadt, Germany. 2014-09-23 to 2014-09-25).
- Neugebauer, J.: *The role of hydrogen-hydrogen interaction in understanding H embrittlement: An ab initio guided multiscale approach*. (Hydrogen Conference. London, UK. 2014-10-16 to 2014-10-18).
- Neugebauer, J.: *Design of structural materials based on ab initio computed phase stabilities*. (MS&T Conference. Orlando, FL, USA. 2014-10-12 to 2014-10-16).
- Neugebauer, J.: *Ab initio based design of structural materials: Status and challenges*. (Expertenpanel Computer Simulation of Material Structures and Properties, Schott AG. Mainz, Germany. 2014-11-14).
- Neugebauer, J.: *Identifying H induced failure mechanisms in structural materials: A multiscale approach*. (MRS Fall Meeting. Boston, MA, USA. 2014-11-30 to 2014-12-05).
- Palm, M.: *Alloy development and industrial processing of iron aluminide based alloys*. (Czech-Japanese Workshop on High-Temperature Intermetallics. Brno, Czech Republic. 2014-04-13 to 2014-04-16).
- Palm, M.: *Alloy development and industrial processing of iron aluminide based alloys*. (IMDEA 2014 - Seminar Series. Getafe, Spain. 2014-05-26 to 2014-05-26).
- Raabe, D.; Ponge, D.; Gutiérrez-Urrutia, I.; Springer, H.; Kuzmina, M.; Hickel, T.; Welsch, E.; Haghighat, S. M. H.; Sandlöbes, S.; Choi, P.-P.; Neugebauer, J.: *Designing bulk nanostructured high manganese steels by integrating advanced characterization and ab initio modeling*. (2nd International Conference on High Manganese Steels - HMnS 2014. Aachen, Germany. 2014-08-31 to 2014-09-04).



- Ram, F.; Zaefferer, S.: *Accurate Kikuchi band localization and its application for diffraction geometry determination*. (HR-EBSD workshop, Imperial College. London, UK. 2014-04).
- Rohwerder, M.: *Scanning Kelvin Probe Force Microscopy as Tool for the Investigation of Localized Corrosion*. (2014 ECS and SMEQ Joint Internat. Meeting. Cancun, Mexico. 2014-10-05 to 2014-10-09).
- Rohwerder, M.: *Selbsteheilende Beschichtungen für den Korrosionsschutz: Ein kritischer Überblick*. (28. Sitzung des AK "Korrosionsschutz durch Beschichtungen", GfKorr. Frankfurt, Germany. 2014-11-06).
- Rohwerder, M.: *Self-Healing Coatings for Corrosion Protection: A Critical Overview and Latest Results*. (BASF Corrosion Workshop. Ludwigshafen, Germany. 2014-10-01).
- Rohwerder, M.: *General corrosion mechanisms: Protection by organic coatings and novel intelligent pigments*. (Axalta Innovation Symposium. Düsseldorf, Germany. 2014-09-10).
- Rohwerder, M.: *Self-Healing Coatings for Corrosion Protection: A Critical Overview and Latest Results*. (Gordon Reserach Conference on Aqueous Corrosion. New London, AR, USA. 2014-07-13 to 2014-07-18).
- Rohwerder, M.: *Korrosionsschutz mit leitfähigen Polymeren: Entwicklung selbstheilender Beschichtungen*. (Materials Valley Workshop. Hanau, Germany. 2014-03-13).
- Rohwerder, M.: *Zinc alloy coatings for corrosion protection: From the basics to new challenges*. (MSE Colloquium, The Ohio State University, Columbus, OH, USA. 2014-02-10).
- Rohwerder, M.: *A new technique for high-sensitive and spatially resolved detection of hydrogen and its application in corrosion science steel*. (Hydrogen Embrittlement Workshop. Düsseldorf, Germany. 2014-01-23).
- Roters, F.; Tasan, C. C.; Yan, D.; Diehl, M.; Shanthraj, P.; Gutiérrez-Urrutia, I.; Springer, H.; Welsch, E. D.; Haghighat, S. M. H.; Raabe, D.: *High-strength steels with improved ductility - potentials for lightweight engineering*. (Jahrestagung STAHL 2014 – Annual Conference of the German Iron Steel Institute. Düsseldorf, Germany. 2014-11-06).
- Roters, F.; Diehl, M.; Shanthraj, P.; Zambaldi, C.; Tasan, C. C.; Yan, D.; Raabe, D.: *Simulation analysis of stress and strain partitioning in dual phase steel based on real microstructures*. (MMM2014, 7th International Conference on Multiscale Materials Modeling. Berkeley, CA, USA. 2014-10-06 to 2014-10-10).
- Scheu, C. U.: *Novel 3D Nb₃O₇(OH) Nanostructured Electrodes for Energy Conversion Systems*. (Materials Science & Technology (MS&T). Pittsburgh, PA, USA. 2014-10-12 to 2014-10-12).
- Schwarz, T.; Choi, P.-P.; Raabe, D.: *Interfaces in Solar Cells*. (Microscopy & Microanalysis Conference 2014. Hartford, CT, USA. 2014-08-03 to 2014-08-07).
- Schwarz, T.; Choi, P.-P.; Cojocaru-Mirédin, O.; Laemmlé, A.; Würz, R.; Mousel, M.; Redinger, A.; Siebentritt, S.; Botti, S.; Raabe, D.: *On the Nano-scale Characterization of Thin-Film Solar Cells*. (Microscopy & Microanalysis 2014. Hartford, CT, USA. 2014-08-03 to 2014-08-07).
- Schwarz, T.; Choi, P.-P.; Cojocaru-Mirédin, O.; Mousel, M.; Redinger, A.; Siebentritt, S.; Botti, S.; Raabe, D.: *On the nano-scale characterization of kesterite thin-films*. (Seminar „Neue Materialien - Halbleiter“ 2014, Otto-von-Guericke University. Magdeburg, Germany. 2014).
- Shanthraj, P.; Diehl, M.; Eisenlohr, P.; Roters, F.; Raabe, D.: *Robust spectral-based numerical methods for heterogeneous microstructures*. (4th International Symposium on Computational Mechanics of Polycrystals, CMCn2014. Düsseldorf, Germany. 2014-07-14).
- Shanthraj, P.; Diehl, M.; Eisenlohr, P.; Roters, F.; Raabe, D.: *Robust spectral-based numerical methods for heterogeneous microstructures*. (24th International Workshop on Computational Micromechanics of Materials, IWCM24. Madrid, Spain. 2014-10-02).
- Spatschek, R.: *Amplitude Equations Modeling of Grain Boundary Premelting* (CECAM-Workshop "Multiscale modeling of materials with atomic scale resolution using phase-field-crystal methods", Lausanne, Switzerland, 2014-05-21).
- Spatschek, R.: *Scale bridging modeling of hydride formation* (PFM 2014, State College, USA, 2014-08-28).
- Spatschek, R.: *Selected Topics in Materials Science Modeling* (Nippon Steel, Kimitsu, Japan, 2014-11-07).
- Spatschek, R.: *Scale bridging modeling of embrittlement phenomena* (International Workshop on Multiscale Computational Materials Science, Sendai, Japan, 2014-11-10 to 2014-11-11).
- Tasan, C. C.; Diehl, M.; Yan, D.; Zambaldi, C.; Koyama, M.; Shanthraj, P.; Roters, F.; Raabe, D.: *Joint Multiscale simulation and experimental analysis of stress and strain partitioning in dual phase steel*. (MRS Fall Meeting. Boston, MA, USA. 2014-11-30 to 2014-12-05).
- Tasan, C. C.; Diehl, M.; Yan, D.; Zambaldi, C.; Koyama, M.; Shanthraj, P.; Roters, F.; Raabe, D.: *Experimental and simulation analysis of dual phase steel micromechanics*. (Seminar at Departments of Engineering and Materials, Oxford University, UK. 2014-11-10).



- Tasan, C. C.; Jeannin, O.; Barbier, D.; Morsdorf, L.; Wang, M.; Ponge, D.; Raabe, D.: *In-situ characterization of martensite plasticity by high resolution microstructure and microstrain mapping*. (ICOMAT 2014, International Conference on Martensitic Transformations 2014. Bilbao, Spain. 2014-07-06 to 2014-07-11).
- Tasan, C. C.; Pradeep, K. G.; Deng, Y.; Yao, M.; Springer, H.; Raabe, D.: *Composition dependence of phase stability, deformation mechanisms & mechanical properties of CoCrFeMnNi HEA's*. (Compositionally Complex Alloys 2014. München, Germany. 2014-07-15 to 2014-07-18).
- Tasan, C. C.; Diehl, M.; Yan, D.; Zambaldi, C.; Shanthraj, P.; Roters, F.; Raabe, D.: *Integrated experimental and simulation analysis of stress and strain partitioning in dual phase steel*. (17th U.S. National Congress on Theoretical and Applied Mechanics Michigan State University. East Lansing, MI, USA. 2014-06-15 to 2014-06-20).
- Tasan, C. C.; Morsdorf, L.; Wang, M.; Ponge, D.; Jeannin, O.; Raabe, D.: *Multi-scale characterization of ductile martensitic steels*. (Advanced Steels 2014. Madrid, Spain. 2014-09-18).
- Tasan, C. C.; Yan, D.; Koyama, M.; Wang, M.; Diehl, M.; Hoefnagels, J. P.; Geers, M. G.; Roters, F.; Raabe, D.: *Ductile damage: Micro-mechanisms, macro-influences*. (The 4th International Symposium on Steel Science - ISSS 2014. Kyoto, Japan. 2014-11-03 to 2014-11-06).
- Tasan, C. C.: *Novel micro-mechanical strategies to unravel complex behavior of multi-phase alloys*. (JFE Steel Corporation. Tokyo, Japan. 2014-11-07).
- Tasan, C. C.; Yan, D.; Diehl, M.; Roters, F.; Shanthraj, P.; Zambaldi, C.; Raabe, D.: *Integrated experimental-numerical methodology to map microstructural strain and stress evolution in bulk nanostructured alloys*. (MMM2014. San Francisco, CA, USA. 2014-10-06 to 2014-10-10).
- Tasan, C. C.; Diehl, M.; Yan, D.; Zambaldi, C.; Shanthraj, P.; Roters, F.; Raabe, D.: *Integrated Experimental and Simulation Analysis of Dual Phase Steel Micromechanics*. (Optimising Performance Through Integrated Modelling of Microstructure (OPTIMoM 2014). Oxford, UK. 2014-09-15 to 2014-09-17).
- Tasan, C. C.: *Strain and stress partitioning in ultra-fine grained dual phase steels*. (TMS 2014. San Diego, CA, USA. 2014-02-16 to 2014-02-20).
- Tasan, C. C.; Zhang, J.; Zhang, J.; Lai, M.; Pradeep, K. G.; Grabowski, B.; Zafarani, N.; Springer, H.; Raabe, D.: *Gum metal plasticity*. (The International Symposium on Plasticity 2014. Freeport, Bahamas, USA. 2014-01-03 to 2014-01-08).
- Tasan, C. C.: *Experimental Challenges in Continuum Damage Modelling*. (Plasticity 2014. Freeport, Bahamas, USA. 2014-01-03 to 2014-01-08).
- Tasan, C. C.; Diehl, M.; Yan, D.; Zambaldi, C.; Shanthraj, P.; Roters, F.; Raabe, D.: *Integrated experimental and simulation analysis of stress and strain partitioning in dual phase steel*. (IUTAM Symposium on Connecting Multiscale Mechanics to Complex Material Design. Evanston, IL, USA. 2014-05-14 to 2014-05-16).
- Tasan, C. C.; Hoefnagels, J. P. M.; Geers, M. G. D.: *Experimental challenges in continuum damage modeling*. (The International Symposium on Plasticity 2014. Freeport, Bahamas, USA. 2014-01-03).
- Tasan, C. C.; Ponge, D.; Hoefnagels, J. P. M.; Yan, D.; Diehl, M.; Roters, F.; Calcagnotto, M.; Raabe, D.: *Strain and stress partitioning in ultrafine grained ferrite/martensite steel*. (TMS 2014. San Diego, TX, USA. 2014-02-16 to 2014-02-20).
- Todorova, M.: *Stability and defect chemistry of zinc oxide in contact with an electrochemical environment: An ab initio approach*. (Helmholtz-Zentrum Berlin, Germany. 2014-11-26).
- Todorova, M.: *Connecting defect chemistry in semiconductors and electrochemistry*. (ICMR Workshop on Ab-initio description of charged systems and solid/liquid interfaces for semiconductors and electrochemistry, University of California. Santa Barbara, CA, USA. 2014-07-07 to 2014-07-11).
- Todorova, M.: *Stability and defect chemistry of oxides in contact with an electrochemical environment: An ab initio approach*. (Talk at University of California. Santa Barbara, CA, USA. 2014-06-16).
- Todorova, M.: *Ab-initio study on liquid metal embrittlement in the Fe/Zn System*. (Workshop. Lake Arrowhead, CA, USA. 2014-06-08 to 2014-06-13).
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Dehm, G.: *New Insights into Materials Phenomena by Advanced TEM*. (Symposium: Advanced Materials Analysis by latest STEM Technologies. Mülheim an der Ruhr, Germany. 2015-02-24).

Dehm, G.: *Small Scale Mechanical Testing: More than just a fashionably tool?!* (POSTECH. Pohang, South-Korea. 2015-03-12).

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Fabritius, H.-O.: *Alternative Präparationsmethoden für nichtmetallische Werkstoffe*. (Fachtagung Mikroskopie und Präparation (mikpräp) der Gesellschaft für Materialografie Rhein Ruhr e.V. (gmr²). Solingen, Germany. 2015-03-19).

Fabritius, H.-O.; Enax, J.; Wu, X.; Epple, M.; Raabe, D.: *Structure-property relations in biological composite materials: An inspiration source for synthetic materials*. (79th Annual Meeting of the DPG and DPG Spring Meeting 2015. Berlin, Germany. 2015-03-15 to 2015-03-20).

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Grabowski, B.: *Atomistic origin of superior mechanical properties of Gum Metals* (ICCP9, Singapore, 2015-01).

Grabowski, B.: *Auf dem Weg zu selbstheilenden Stählen: Herausforderungen und potenzielle Strategien* (Stahlmarkt, Düsseldorf, 2015-02).

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Hüter, C.: *A multi-scale perspective on grain boundary failure*. (Seminar ICAMS der Ruhr Universität Bochum, 2015-11-16)

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Hickel, T.; Dutta, B.; Körmann, F.; Neugebauer, J.: *Coupling of magnetic and lattice degrees of freedom in bulk materials*. (Magnetism Workshop. Fagerudd, Sweden. 2015-06-25 to 2015-06-26).

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Köhler, M.: *APT & fracture behaviour of metallic glass thin films*. (Kolloquium über aktuelle Fragen der Materialphysik an der WWU Münster, Germany. 2015).

Kuzmina, M.; Choi, P.-P.; Ma, D.; Hickel, T.; Neugebauer, J.; Friák, M.; Herbig, M.; Ponge, D.; Tasan, C. C.; Sandlöbes, S.; Raabe, D.: *Scale hopping simulations and real atoms*. (ICAMS Workshop 'From Atoms to Continuum', ICAMS, Ruhr University Bochum, Germany. 2015-06-16).

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Leyson, G.: *Multiscale description of dislocation induced nano-hydrides*. (Kolloquium Helmholtz-Zentrum, Geesthacht, 2015-03-05).



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- Mayrhofer, K. J. J.: *Novel in situ in operando methods*. (66th meeting of the International Society of Electrochemistry, Symposium “Novel in situ in operando methods”. Taipei, Taiwan. 2015-10-04 to 2015-10-09).
- Mayrhofer, K. J. J.: *Combinatorial screening of catalyst materials for electrochemical CO₂ reduction*. (ACHEMA 2015, Industrial carbon dioxide utilization. Frankfurt, Germany. 2015-06-15 to 2015-06-19).
- Mayrhofer, K. J. J.: *Combinatorial study of fundamental electrocatalyst performance - The Scanning Flow Cell coupled to online analytics*. (227th annual meeting of the Electrochemical Society, Symposium “State-of-the-Art Tutorial on Diagnostics in Low-Temperature Fuel Cells”. Chicago, IL, USA. 2015-05-24 to 2015-05-28).
- Mayrhofer, K. J. J.: *Combinatorial study of fundamental electrocatalyst performance - The Scanning Flow Cell coupled to online analytics*. (Heraeus seminar “Electrochemical Surface Science”. Bad Honnef, Germany. 2015-01-19 to 2015-01-22).
- Mayrhofer, K. J. J.: *Time and potential resolved dissolution of Pt and Au*. (Catalysis for solar fuels – Fundamentals and application - Workshop lecture at Technical University München, Germany. 2015-02-27).
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- Mercier, D.; Zambaldi, C.; Eisenlohr, P.; Crimp, M. A.; Bieler, T. R.; Martin, R. S.: *STABIX: A Matlab toolbox for slip transmission analysis*. (MTEX workshop. Chemnitz, Germany. 2015-02-09 to 2015-02-13).
- Neugebauer, J.: *Big Data im computergestützten Materialdesign*. (CPTS Big Data round table. Tübingen, Germany. 2015-01-26 to 2015-01-27).
- Neugebauer, J.: *Quantum mechanical design of structural materials on the computer*. (Colloquium at Heinrich Heine Universität Düsseldorf, Germany. 2015-02-02).
- Neugebauer, J.: *Ab Initio Thermodynamics: A Novel Route to Design Structural Materials with Superior Mechanical Properties*. (TMS-MEMA Conference. Doha, Katar. 2015-01-11 to 2015-01-14).
- Neugebauer, J.: *A brief introduction to surface science from a modelers perspective*. (Colloquium at Ecole Polytechnique. Paris, France. 2015-02-10).
- Neugebauer, J.: *Introduction to density functional Theory from a materials science perspective*. (ICAMS course “Multi-scale Modelling”. Bochum, Germany. 2015-02-23).
- Neugebauer, J.: *Multi scale Simulation of complex materials under realistic environments*. (RESOLV Workshop. Velen, Germany. 2015-03-09 to 2015-03-11).
- Neugebauer, J.: *Materials design based on predictive ab initio thermodynamics*. (Colloquium at Lawrence Livermore National Lab. Livermore, CA, USA. 2015-04-13).
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- Neugebauer, J.: *Electrochemistry from a semiconductor physics perspective: New tools and insights*. (SurMat Workshop. Düsseldorf, Germany. 2015-04-27).
- Neugebauer, J.: *From surface modeling to novel semiconductor growth strategies*. (MDRC Conference on Material Defects. Lake Arrowhead, CA, USA. 2015-06-07 to 2015-06-12).
- Neugebauer, J.: *Ordering phenomena in InGaN*. (Lecture at University of California, Santa Barbara, CA, USA. 2015-04-16 to 2015-04-16).
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- Neugebauer, J.: *Point Defects at Finite Temperatures*. (Conference and Workshop “Nothing is perfect. Monte Verita, Switzerland. 2015-04-26 to 2015-04-29).
- Neugebauer, J.: *Pylron – A Python Based Workbench for Automated Atomistic Simulations*. (CECAM Conference. Lausanne, Switzerland. 2015-06-08 to 2015-06-10).



- Neugebauer, J.: *Understanding the fundamental mechanisms behind H embrittlement: An ab initio guided multiscale approach*. (International Workshop MoD-PMI. Marseille, France. 2015-05-25 to 2015-05-27).
- Neugebauer, J.: *Design of structural materials by ab initio guided multiscale simulations*. (CMRI Symposium. Sendai, Japan. 2015-10-13 to 2015-10-14).
- Neugebauer, J.: *Towards automated toolsets for computing high-precision free energies by ab initio approaches*. (MS&T. Columbus, OH, USA. 2015-10-04 to 2015-10-08).
- Neugebauer, J.: *Design of structural materials by predictive ab initio thermodynamics: Challenges, applications and perspectives*. (Euromat Conference. Warsaw, Poland. 2015-09-20 to 2015-09-24).
- Neugebauer, J.: *Ab Initio Computation of Phonon-Phonon and Magnon-Phonon Interactions: Successes and Challenges*. (Workshop DyProSo. Freising, Germany. 2015-09-13 to 2015-09-17).
- Neugebauer, J.: *Ab initio guided design of structurally and thermodynamically complex materials*. (Psi-k 2015 Conference. San Sebastian, Spain. 2015-09-08 to 2015-09-10).
- Neugebauer, J.: *Quantum-mechanical approaches to address the structural and thermodynamic complexity of engineering materials*. (Swedish Chemical Society. Kalmar, Sweden. 2015-08-23 to 2015-08-28).
- Neugebauer, J.: *Vacancies in fcc metals: Discovery of large non-Arrhenius effects*. (The 5th Sino-German Symposium Thermodynamics and Kinetics of Nano and Mesoscale Materials and Their Applications. Changchun, China. 2015-07-26 to 2015-07-31).
- Neugebauer, J.: *Understanding the fundamental mechanisms behind H embrittlement: An ab initio guided multiscale approach*. (Colloquium UCB Vancouver, Canada. 2015-07-06).
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- Raabe, D.; Neugebauer, J.; Tasan, C. C.; Roters, F.; Ma, D.; Sandlöbes, S.; Diehl, M.: *Materials Simulation: Mechanisms and Processes*. (BMBF Wing Conference. Dresden, Germany. 2015-04-28).
- Raabe, D.; Ponge, D.; Kuzmina, M.; Sandlöbes, S.: *Phase transformations at dislocations*. (Workshop Possibilities and Limitations of Quantitative Materials Modeling and Characterization. Bernkastel, Germany. 2015-06-01).
- Raabe, D.; Ponge, D.; Kuzmina, M.; Sandlöbes, S.: *Grain boundary segregation enables nanostructured martensite-austenite laminates by solute decoration and phase transformation at defects*. (10th European Symposium on Martensitic Transformations (ESOMAT). Antwerp, Belgium. 2015-09-17).
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- Roters, F.: *Crystal Plasticity Simulations? Fundamentals, Implementation, Application*. (Seminar „Numerische Mathematik und Mechanik“, Institut für Mechanik, Universität Duisburg-Essen. Essen, Germany. 2015-04-20).
- Scheu, C. U.: *Challenges in nanostructured photovoltaic devices*. (IAMNano 2015 - International Workshop on Advanced and In-situ Microscopies of Functional Nanomaterials and Devices. Hamburg, Germany. 2015-07-08 to 2015-07-10).
- Scheu, C. U.: *Dewetting of Al films on alumina*. (3 Phase, Interface, Component Systems (PICS), Centre Interdisciplinaire de Nanoscience de Marseille (CINaM). Marseille, France. 2015-05-27 to 2015-05-29).
- Scheu, C. U.: *Dewetting of epitaxial Al thin films on (0001) single crystalline sapphire substrates*. (Materials Science & Technology (MS&T). Columbus, OH, USA. 2015-10-04 to 2015-10-08).
- Scheu, C. U.: *Electron microscopic investigation of hydrothermally grown rutile nanowires*. (Microscopy Conference MC 2015. Göttingen, Germany. 2015-09-06 to 2015-09-11).
- Scheu, C. U.: *Interface challenges in nanostructured energy generating devices*. (Energy Materials Nanotechnology (EMN) Photovoltaics Meeting. Orlando, FL, USA. 2015-01-12 to 2015-01-15).
- Scheu, C. U.: *Structural and Functional Properties of Nb₃O₇(OH) and TiO₂ Nanoarrays*. (Max Planck POSTECH/KOREA Symposium on Frontiers in Materials Science. Pohang, Korea. 2015-06-29 to 2015-06-30).
- Springer, H.: *Legierungsentwicklung von Metallmatrix-Komposit-Stählen*. (3. Jahressitzung des DGM RF RR 2015. Siegen, Germany. 2015-09-03).
- Stechmann, G.; Zaefferer, S.: *3-dimensionnal Microstructural Characterization of CdTe-based Solar Cells*. (Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg. Stuttgart, Germany. 2015-03-19).
- Tasan, C. C.: *Doing more, with less, for longer: Designing high-performance eco-friendly materials guided by in-situ experiments and simulations*. (Seminar at the Dept. of Mat. Sci. and Eng. of MIT. Boston, MA, USA. 2015).



Tasan, C. C.: *Auf dem Weg zu selbstheilenden Stählen: Herausforderungen und potenzielle Strategien*. (StahlMarkt 2015. Düsseldorf, Germany. 2015-02-26 to 2015-02-27).

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Zaefferer, S.: *State of the art of EBSD*. (EMAS 2015. Portoroz, Slovenia. 2015-05-03 to 2015-05-07).

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- Zambaldi, C.; Zehnder, C.; and Raabe, D.: *Orientation dependent deformation by slip and twinning in magnesium during single crystal indentation*, Acta Mater. 91 (2015) 267
- Zhang, H.; Pradeep, K.G.; Mandal, S.; Ponge, D.; Springer, H.; and Raabe, D.: *Dynamic strain-induced transformation: An atomic scale investigation*, Scripta Mater. (2015) 23
- Zhang, J.; Tasan, C.C.; Lai, M.; Zhang, J.; and Raabe, D.: *Damage resistance in gum metal through cold work-induced microstructural heterogeneity*, J. Mater. Sci. 50 (2015) 5694
- Zhang, J.; Zaefferer, S.; and Raabe, D.: *A study on the geometry of dislocation patterns in the surrounding of nanoincidents in a TWIP steel using electron channeling contrast imaging and discrete dislocation dynamics simulations*, Mater. Sci. Eng. A 636 (2015) 231
- Zhang, X.; Hickel, T.; Rogal, J.; Fähler, S.; Drautz, R.; and Neugebauer, J.: *Structural transformations among austenite, ferrite and cementite in Fe–C alloys: A unified theory based on ab initio simulations*, Acta Mater. 99 (2015) 281
- Zhang, Z.; Long, Y.; Cazottes, S.; Daniel, R.; Mitterer, C.; and Dehm, G.: *The peculiarity of the metal-ceramic interface*, Sci. Rep. 5 (2015) 11460

Conference Papers, Final Reports and Other Publications

- Li, X.; Palm, M.; Scherf, A.; Janda, D.; Heilmaier, M.; and Stein, F.: *Microstructure and Phase Transformation Temperatures of Two-Phase FeAl (B2) + FeAl₂ Alloys*, Proc. of MRS 2014 1760 (2015) mrsf14
- Mercier, D.; Zambaldi, C.; and Bieler, T.R.: STABiX (2015) DOI: 10.5281/zenodo.14854
- Mercier, D.; Zambaldi, C.; and Bieler, T.R.: *A Matlab toolbox to analyze slip transfer through grain boundaries*, Proc. of the 17th Int. Conf. on Textures of Materials (ICOTOM 17) 82 (2015) 1
- Pengel, S.; Niu, F.; Nayak, S.; Tecklenburg, S.; Chen, Y.-H.; Ebbinghaus, P.; Schulz, R.; Yang, L.; Biedermann, P.U.; Gygi, F.; Schmid, R.; Galli, G.; Wippermann, S.M.; and Erbe, A.: *Oxygen reduction and water at the semiconductor/solution interface probed by stationary and time-resolved ATR-IR spectroscopy coupled to electrochemical experiments and DFT calculations*, Proc. of the 8th Int. Conf. on Advanced Vibrational Spectroscopy (ICAVS) (2015) 130
- Wohletz, S.; Groche, P.; and Altin, A.: *Metallische Verbunde durch Fließpressen*, 30. Jahrestreffen der Kaltmassivumformer Proc.(2015)



Doctoral, Diploma, Master and Bachelor Theses

Doctoral Theses

2012 (not included in Scientific Report 2011-2012)

Dr.-Ing. C. Begau: Characterization of crystal defects during molecular dynamics simulations of mechanical deformation (Ruhr-University Bochum)

2013

Dr.-Ing. M. Asgari: Pulsed Plasma Nitriding - Effect on Hydrogen Embrittlement and Hydrogen Adsorption and Diffusion (Norwegian University of Science and Technology NTNU, Trondheim, Norway)

Dr. rer. nat. S. G. Ayodele: Lattice Boltzmann modeling of advection-diffusion-reaction equations in non-equilibrium transport processes (RWTH Aachen)

Dr.-Ing. K. Davut: Relation between microstructure and mechanical properties of a low-alloyed TRIP steel (RWTH Aachen)

Dr.-Ing. R. D. Kamachali: Grain boundary motion in polycrystalline materials (Ruhr-Universität Bochum)

Dr. rer. nat. J. Klemm: Element resolved corrosion analysis of stainless steel-type glass forming steels and the correlation to their microstructure (Ruhr-Universität Bochum)

Dr.-Ing. C. Kords: On the role of dislocation transport in the constitutive description of crystal plasticity (RWTH Aachen)

Dr. rer. nat. R. Krieg: Untersuchungen zur Inhibition der Sauerstoffreduktion durch Zink-basierende Korrosionsproduktschichten (Ruhr-Universität Bochum)

Dr. rer. nat. J. C. Meier: Degradation phenomena and design principles for stable and active Pt/C fuel cell catalysts (Ruhr-Universität Bochum)

Dr. rer. nat. S. Nayak: Investigation of Electrochemical Oxygen Reduction on Semiconductor Surfaces by Attenuated Total Internal Reflection Infrared Spectroscopy (Ruhr-Universität Bochum)

Dr.-Ing. S. C. M.-F. Reeh: Elastic and plastic properties of fcc Fe–Mn based alloys (RWTH Aachen)

Dr.-Ing. B. Salgin: Monitoring of the oxide-chemistry controlled surface ion mobility (Ruhr-Universität Bochum)

Dr. rer. nat. P. Schneider: Studie über die Anfangsstadien und die Aktivierungsprozesse der Phosphatierung auf aluminium- und siliziumhaltigen Oberflächen (Ruhr-Universität Bochum)

Dr.-Ing. D. Steinmetz: A constitutive model of twin nucleation and deformation twinning in High-Manganese Austenitic TWIP steels (RWTH Aachen)

Dr.-Ing. T. Takahashi: On the growth and mechanical properties of non-oxide perovskites and the spontaneous growth of soft metal nanowhiskers (RWTH Aachen)

Dr. rer. nat. G. K. Tirumalasetty: Mechanics in Steel through Microscopy (TU Delft, The Netherlands)

Dr. rer. nat. H. Zandbergen: Mechanics in Steel through Microscopy (TU Delft, The Netherlands)

2014

Dr. rer. nat. P. J. Bach: Lithiation and delithiation mechanisms of model anodes for lithium ion batteries using the example of Au thin films: Correlation of electrochemical and in-situ high energy X-ray diffraction characterization (Ruhr-Universität Bochum)

Dr. rer. nat. P. F. Beese-Vasbender: From Microbially Induced Corrosion to Bioelectrical Energy Conversion - Electrochemical Characterization of Sulfate-Reducing Bacteria and Methanogenic Archaea (Ruhr-Universität Bochum), **with distinction "summa cum laude"**



Dr.-Ing. W. Guo: Co-deformation of Amorphous CuZr/Nanocrystalline Cu Multilayers (Ruhr-Universität Bochum)

Dr. rer. nat. N. Hamidi Siboni: Molecular Dynamics Studies of Thermodynamical Consistency and Non-locality of Effective Temperature (RWTH Aachen)

Dr. rer. nat. D. Iqbal: Ultrathin Chemisorbed Polymer Coatings: Corrosion Protection and Nanostructuring of ZnO (Ruhr-Universität Bochum)

Dr.-Ing. M. I. Isik: Nucleation of Mo-rich Laves phase particles in 12% Cr steels (Ruhr-Universität Bochum)

Dr.-Ing. T. Jäpel: Feasibility study on local elastic strain measurements with an EBSD pattern cross correlation method in elastic-plastically deforming material (RWTH Aachen)

Dr.-Ing. J. Kahlen: Development of Models and Methods to Simulate Peptide-Assisted Nucleation and Growth of Calcium-Minerals (Mainz University)

Dr. rer. nat. S. Mandal: *Dynamic correlations and confinement effects in glass forming hard sphere systems* (RWTH Aachen)

Dr.-Ing. F. Moszner: Fe–Mn–Pd maraging steels for biodegradable implant applications (ETH Zurich, Switzerland)

Dr.-Ing. G. A. Nematollahi: Multiscale description of super-saturated ferrite in severely deformed pearlitic wires (Ruhr-Universität Bochum), with distinction “**summa cum laude**”

Dr.-Ing. K. G. Pradeep: Atomic scale investigation of clustering and nanocrystallization in FeSiNbB(Cu) soft magnetic amorphous alloys (RWTH Aachen), **with distinction “summa cum laude”**

Dr. rer. nat. L. Schemmann: The inheritance of different microstructures found after hot rolling on the properties of a completely annealed dual phase steel (RWTH Aachen)

Dr. rer. nat. A. K. Schuppert: Combinatorial screening of fuel cell catalysts for the oxygen reduction reaction (Ruhr-Universität Bochum), **with distinction “summa cum laude”**

Dr.-Ing. W. Song: Characterization and simulation of bainite transformation in high carbon bearing steel 100Cr6 (RWTH Aachen), **with distinction “summa cum laude”**

Dr. rer. nat. A. A. Topalov: Design and implementation of an automated electrochemical flow system coupled with mass spectrometry for investigation of the dissolution behavior of platinum (Ruhr-Universität Bochum), **with distinction “summa cum laude”**

Dr. mont. B. Völker: Investigation of interface properties of barrier metals on dielectric substrates. PhD Thesis, Department of Physical Metallurgy and Materials Testing (Montanuniversität Leoben, Austria), **with distinction “summa cum laude”**

Dr. mont. A. C. Wimmer: Plasticity and fatigue of miniaturized Cu structures (Montanuniversität Leoben, Austria), **with distinction “summa cum laude”**

Dr.-Ing. X. Wu: Structure-property-relations of cuticular photonic crystals evolved by different beetle groups (Insecta, Coleoptera) (RWTH Aachen)

Dr. X. Zhang: Structural transformations in Fe-C alloys: From atomistic simulations to a microscopic understanding (Ruhr-Universität Bochum)

2015

Dr.-Ing. C. Baldizzone: Degradation of Carbon-Supported Pt Bimetallic Nanoparticles (Ruhr-Universität Bochum), **with distinction “summa cum laude”**

Dr.-Ing. M. M. Belde: Designing ductile martensitic steel microstructures via localised austenite formation controlled by tailored chemical gradients (RWTH Aachen)

Dr. rer. nat. S. T. Cheng: A density functional theory study on the oxidation behaviour of Mg and Mg-Zn alloys (Ruhr-Universität Bochum)

Dr.-Ing. M. Diehl: High Resolution Crystal Plasticity Simulations (RWTH Aachen), **with distinction “summa cum laude”**



Dr. rer. nat. A. Glensk: Anharmonic contributions to *ab initio* computed thermodynamic material properties (Universität Paderborn)

Dr. Phil. Y. Guo: The interactions between slip band, deformation twins and grain boundaries in commercial purity titanium (Oxford University, UK)

Dr.-Ing. S. Gupta: Micromechanical modeling of martensitic phase transformation in steels based on non-local crystal plasticity (Ruhr-Universität Bochum)

Dr. rer. nat. C. Heinzl: Correlation of structure and performance in high temperature polymer electrolyte membrane fuel cells (LMU Munich), **with distinction “summa cum laude”**

Dipl.-Ing. Dr. mont. Peter J. Imrich: TEM investigations on interactions of dislocations with boundaries (Montanuniversität Leoben, Austria), **with distinction “summa cum laude”**

Dr. rer. nat. S. Kenmoe: *Ab Initio* Study of the Low-Index Non-Polar Zinc Oxide Surfaces in Contact with Water: from Single Molecules to Multilayers (Ruhr-Universität Bochum)

Dr.-Ing. M. Kuzmina: Segregation driven phase transformation in medium Mn steel (RWTH Aachen), **with distinction “summa cum laude”**

Dr. rer. nat. M. Lange: The microstructural influence on high temperature corrosion in DMV617mod under coal-fired conditions (RWTH Aachen)

Dr. rer. nat. C. A. Laska: Development of a Scanning Flow Cell system with Dynamic Electrolyte Change for Fully Automated Parameter Screening (Ruhr-Universität Bochum)

Dr. rer. nat. Z. Pei: Theory-guided combinatorial materials design of ductile Mg-based alloys: employing *ab initio* and atomistic methods (RWTH Aachen)

Dr. rer. nat. S. Pengel: Anwendung eines Quantenkaskadenlasers in der zeitaufgelösten Laserabsorptionsspektroskopie zur kinetischen Untersuchung der elektrochemischen Sauerstoffreduktion an Germanium (Ruhr-Universität Bochum)

Dr.-Ing. F. Ram: The Kikuchi Bandlet Method (RWTH Aachen)

Dr. rer. nat. L. Rossrucker: Electrochemical dissolution characteristics of Zn, Mg, Al and ZnMg(Al) alloys (Ruhr-Universität Bochum)

Dr. rer. nat. T. Schwarz: On the nano-scale characterization of kesterite thin-films (RWTH Aachen), **with distinction “summa cum laude”**

Dr. rer. nat. D. Tytko: Thermal stability of AlN/CrN superlattice hard coatings (RWTH Aachen)

Dr. rer. nat. A. Vimalanandan: Investigation of Redox-Responsive Coatings for Zinc Corrosion Protection (Ruhr-Universität Bochum)

Diploma Thesis

2013

Baron, C.: Mikrostrukturelle und mechanische Untersuchungen an legierten perlitischen Drähten (Hochschule Coburg)

Master Theses

2013

Cai, P.: Study of Dislocation-Twin Boundaries Interaction Using Discrete Dislocation Dynamics simulations (RWTH Aachen)

Li, X.: Microstructure and mechanical properties of Fe–Al–Ti–B alloys with addition of Mo and W (RWTH Aachen)

Morsdorf, L.: Nanocrystallization in soft-magnetic Fe-Si-B amorphous alloys / Nanokristallisation in amorphen weichmagnetischen Fe-Si-B-Legierungen (RWTH Aachen)



- Nguyen, C.-D.*: Structural interactions between solid-melt interfaces (Ruhr-Universität Bochum)
- Stechmann, G.*: Crystallographic and Electronic Characterization of Grain Boundaries in CdTe Thin Film Solar Cells (ENSCL Lille, France)
- Tarzimoghadam, Z.*: Investigation of mechanical properties, microstructures and plastic deformation of near-alpha Ti-Mo and Ti-Fe alloys (RWTH Aachen)
- Wang, Z.*: Residual stress measurements in TWIP steels by nano-indentation and delta EBSD (RWTH Aachen)
- Witt, U.*: Entwurf und Implementierung eines gestenbasierten Natural User Interface zu Werkstoffmodellierung (Universität Duisburg-Essen)
- Yao, M.*: Non-equiatomic FeMnNiCoCr high entropy alloys: microstructure, phase stability and mechanical behavior (RWTH Aachen)

2014

- Archie, F. M. F.*: Nanostructured High-Mn Steels by High Pressure Torsion: Microstructure-Mechanical Property Relations (RWTH Aachen)
- Hu, Q.*: Nanoscale tribocorrosion at model metal and metal oxide interfaces (Ruhr-Universität Bochum)
- Krieger, W.*: Fügen von Stahl und Aluminium bei Raumtemperatur (Ruhr-Universität Bochum)
- Li, Z.*: Optimization and application of Electron channelling contrast imaging (ECCI) technique under controlled diffraction conditions (cECCI) for investigation of dislocation in Ni-based superalloy (RWTH Aachen)
- Pang, B.*: Synthesis of photosensitive molecules and characterization of their adsorbates on Au(111) Surface (Ruhr-Universität Bochum)
- Peng, Z.*: Investigation of ruthenium effect on the formation of topologically close-packed phases in nickel based superalloys
- Rechmann, J.*: Oberflächenmodifizierung von Zink (Eisen) mit Ethinylphenothiazinen und Charakterisierung (Heinrich-Heine-Universität Düsseldorf)
- Sheng, Z.*: Characterization of the Microstructure and Mechanical Properties of Maraging Steels Produced by Laser Additive Manufacturing (RWTH Aachen)
- Sözen, H. I.*: *Ab initio* investigations on the energetics and kinetics of defects in Fe–Al alloy. (Ruhr-Universität Bochum)
- Spies, M.*: Influence of growth conditions on the opto-electronic properties, microstructure and chemistry of $\text{Cu}_2\text{ZnSnSe}_4$ thin-films (Heinrich-Heine-Universität, Düsseldorf)
- Wan, D.*: Electron Channeling Contrast Imaging (ECCI) Analysis on Deformed Aluminum (RWTH Aachen)
- Wang D.*: Crystal Plasticity Simulations on the Formation of Shear Bands. (RWTH Aachen)

2015

- Afshar, M.*: Experimental investigation of the co-deformation of Mg-matrix and LPSO precipitates across phase (RWTH Aachen)
- Grabowski, M.*: Implementation of atomic spin constraints in the density-functional theory package S/PHI/nX (Heinrich-Heine Universität Düsseldorf)
- Gupta, A.*: Precipitation Kinetics in Binary Alloys (Ruhr-Universität Bochum)
- Müller, M.*: Influence of solvated ions on hydrophobic interactions (Fachhochschule Südwestfalen)
- Naikade, M.*: Testing of a new software tool for the determination of the amount of recrystallized and recovered volume fraction and its application to different annealed aluminum alloys (RWTH Aachen)
- Schwenzfeier, K.*: Aggregation von Amphiphilen an der Wasser/Luft-Grenzfläche (Ruhr-Universität Bochum)
- Sharma, L.*: Implementation and comparison of different damage criteria in the framework of crystal plasticity (Ruhr-Universität Bochum)



Tecklenburg, S.: Electrochemical Attenuated Total Reflection Infrared Spectroscopic experiments at Hydrogen terminated Silicon single crystal surfaces (Ruhr-Universität Bochum)

Twiste, F.: Phase field modeling of oxide scale growth (Heinrich-Heine-Universität Düsseldorf)

Weikamp, M.: Instabilities during frictional sliding between strongly dissimilar materials (Heinrich-Heine-Universität Düsseldorf), **with top mark**

Bachelor Thesis

2013

Cox, K.: Elektrochemische Untersuchung von Eisen im Schwefelwasserstoff gesättigten Elektrolyten (Hochschule Niederrhein)

Grabowski, M.: Entwicklung und Validierung DFT-basierter EAM-Potentiale (Heinrich-Heine-Universität Düsseldorf)

2014

Welk, D.: Elastische Wechselwirkungen zwischen Punktdefekten im Supercellansatz: Modellrechnung in 1 - 2 Dimensionen (Heinrich-Heine-Universität Düsseldorf)

2015

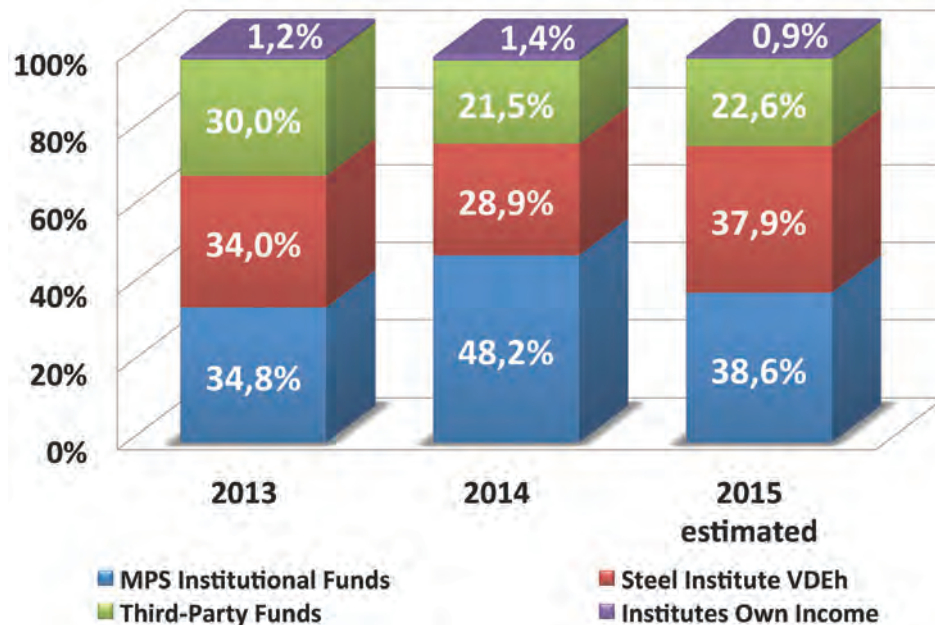
Bottler, F.: GPU simulation and visualization of microstructure evolution (Fachhochschule Jülich-Aachen-Köln)



Budget of the Institute

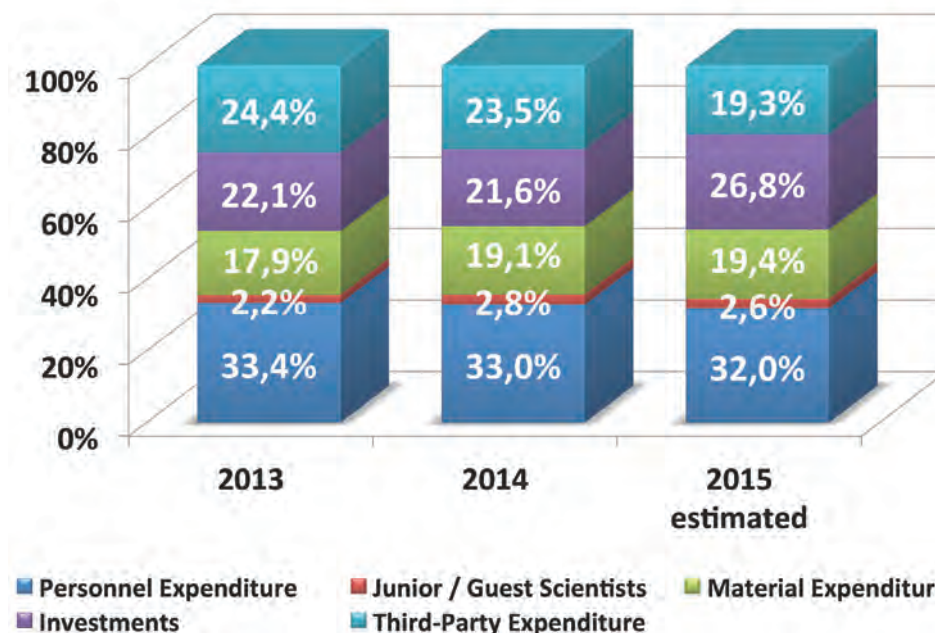
Revenue

(percentual contributions to total revenue without appointment-related investment funds and general reconstruction of the buildings; year 2015 data estimated)



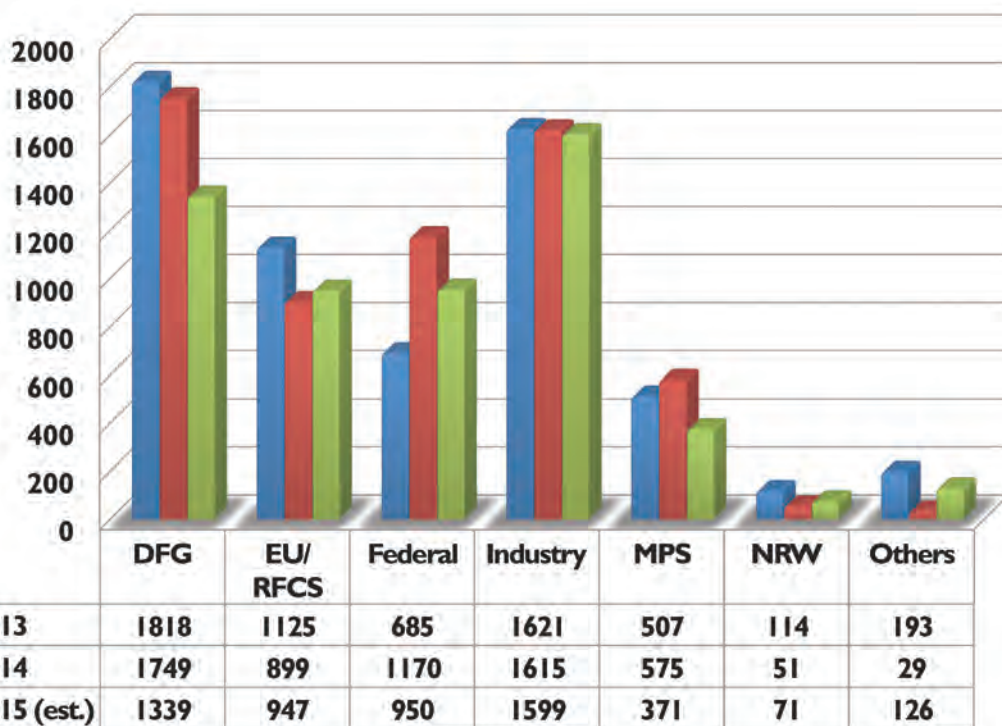
Expenditure

(percentual distribution of total expenditure; investments include large-scale apparatus, electronic data processing, appointment-related investments, separate investment for basic equipment; year 2015 data estimated)



Third-Party Funds

(Contributions in 1,000 € to total revenue including personnel, material and investments, year 2015 data estimated)



DFG: German Science Foundation

EU: European Union

RFCs: Research Fund for Coal and Steel

Federal: BMBF & BMWi

BMBF: Federal Ministry of Science and Education

BMWi: Federal Ministry of Economics and Technology

Industry incl. Christian Doppler Society and MaxNet

MPS: Max Planck Society

NRW: State of North Rhine-Westphalia

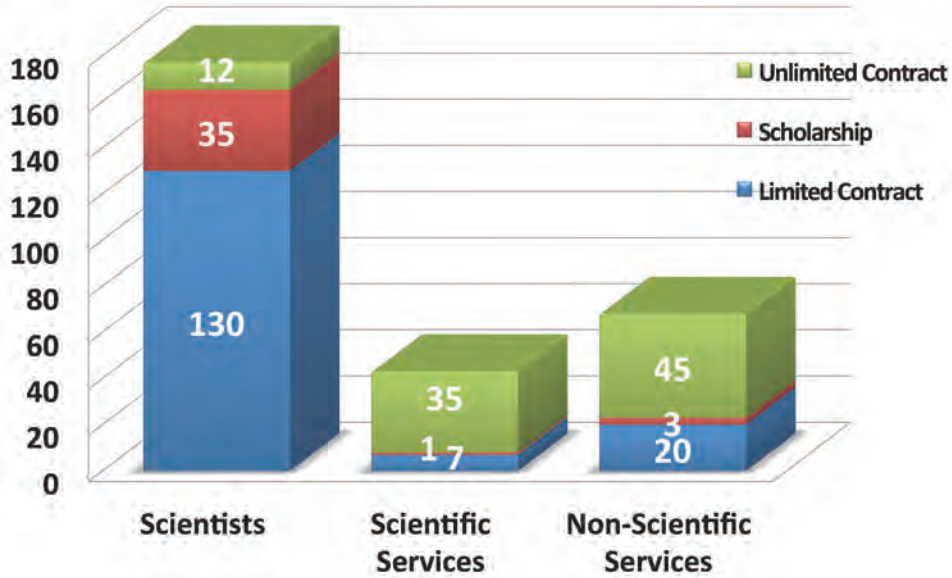
Others: Diverse expenditure on material costs (e.g. Humboldt Foundation, Merkle Foundation)



Personnel Structure

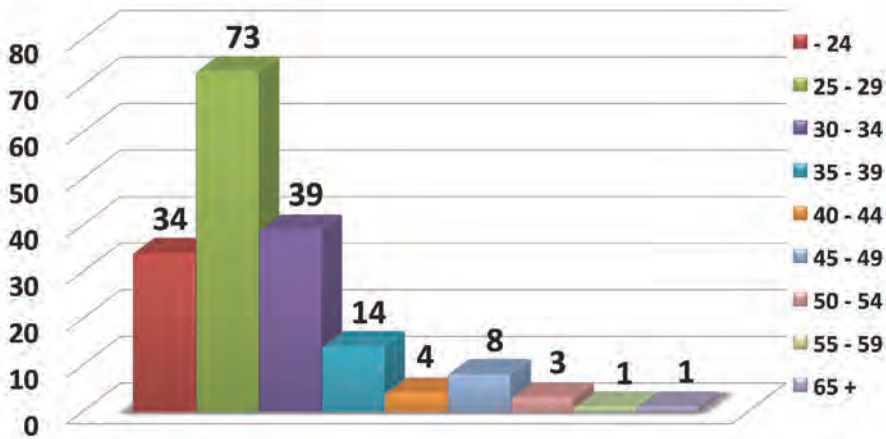
Number of Occupied Scientific / Non-Scientific Positions

(Absolute Numbers, July 2015)



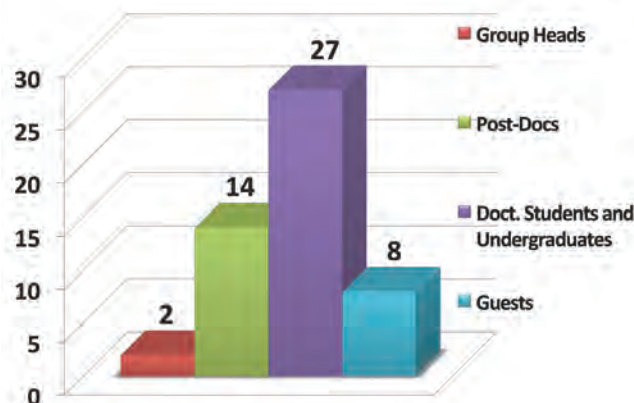
Age Distribution of Scientists

(Absolute numbers, July 2015)



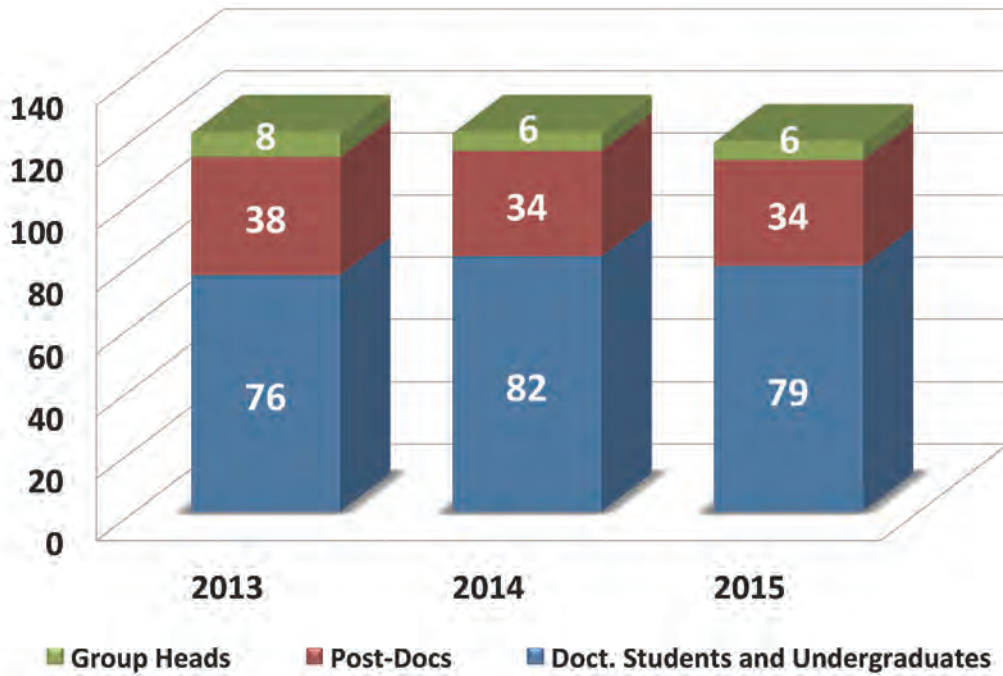
Female Scientists

(Absolute numbers, July 2015)

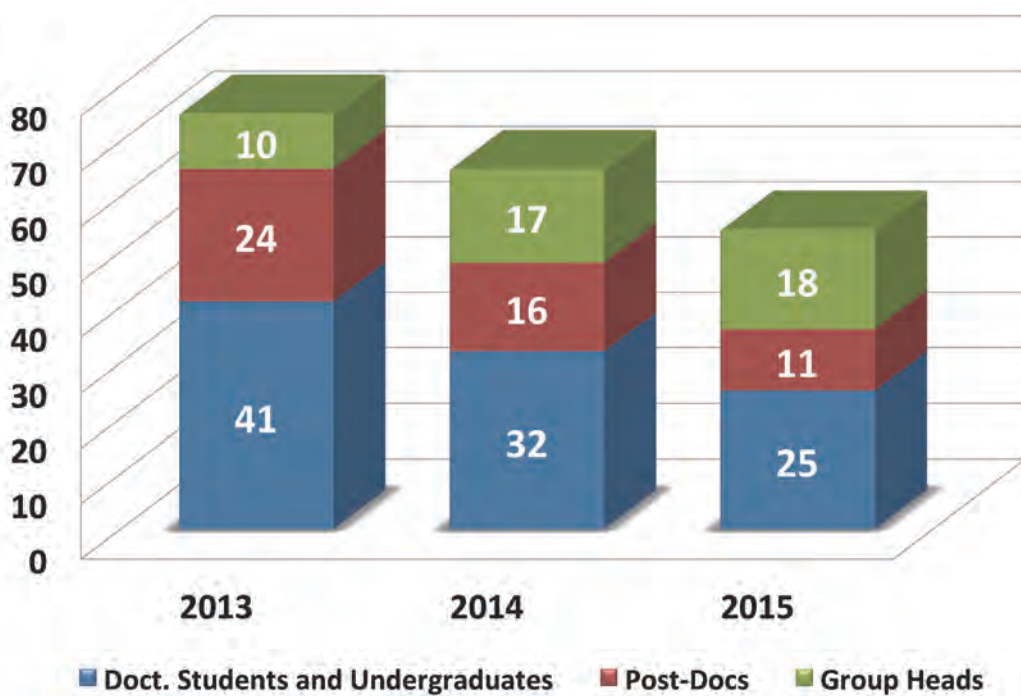


Number of Junior Scientists (Absolute numbers, year 2015 data estimated)

Financed via Third-Party Funds



Not Financed via Third-Party Funds





Scientists and their Home Countries

(Absolute numbers, July 2015)

