



Curriculum Vitae

PERSONAL INFORMATION

Family name, First name: **ZEHETBAUER Michael**
 Researcher unique identifier(s): ORCID 0000-0001-8430-8587
 Nationality: Austrian
 Date of birth: 29 June 1951
 URL for website: <http://physnano.univie.ac.at/>

EDUCATION & POSITIONS

2007-2016 Head of Faculty Group Physics of Nanostructured Materials
 Faculty of Physics, University Vienna, Austria
 1997 ff. University Professor (associated) and Head of Institute Group Nanocrystalline Materials,
 Institute of Materials Physics, Faculty of Natural Sciences, University Vienna, Austria
 1992-1997 Docent (Dr.habil.) "Solid State Physics"
 Institute of Solid State Physics, Faculty of Natural Sciences, University Vienna, Austria
 1978-1992 University Assistant Professor, Faculty of Natural Sciences, University Vienna, Austria
 1973-1978 PhD (Physics), Faculty of Philosophy, University Vienna, Austria

• GUEST PROFESSORSHIPS & AWARDS

2016-2017 Tammann-Price of the German Materials Society
 2015 Award from the Materials Science Faculty of Warsaw University of Technology, Warszawa, Poland, for the successful achievements in the field of SPD processed nanomaterials
 2011 Award of Conference "Bulk Nanostructured Materials BNM 2011", Ufa, Russia, for outstanding work on bulk functional nanomaterials
 2008 Visiting Professor (Polymer Physics), Institute of Fluid and Solid Mechanics, Universit  Louis Pasteur, Strasbourg, France
 1999 Visiting Professor (Metal Physics), Institut Superieur de Genie Mecanique et Productique, Universit  Metz, France
 1986-1992 (several stays between 1-14 weeks) Visiting Assistant Professor (Metal Physics), Institut f r Werkstoffe, Technical University Braunschweig, Germany

• SUPERVISION OF GRADUATE STUDENTS & POSTDOCTORAL FELLOWS

1981-2017 11 PostDocs / 22 PhDs / 19 Master Students, 7 Bachelor Students

• TEACHING ACTIVITIES

1993 ff. (all per year): Lectures "Fundamentals of Materials Physics I, II", 2 Lab Courses "Materials Science", 1-2 Lab Courses "Nanostructured Materials"

• INSTITUTIONAL RESPONSIBILITIES

2004-2016 Member of Council, Faculty of Physics, University of Vienna, Austria
 1995-2013 Organizer of Physics Faculty's Representancy at the Annual Vienna Job Fair

• ORGANISATION OF SCIENTIFIC MEETINGS

2016 27th Colloquium on Fatigue Mechanisms, Vienna, Austria (chair, 65 participants)
 2014 International Conference on Polymer Behaviour, Vienna, Austria (chair, 100 participants)
 2013 Winterschool of EU MC-ITN Network "BioTiNet", Vienna, Austria (chair, 60 participants)

- 2012 Acta Materialia Gold Medal Symposium “Recent Developments in the Processing and Properties of Ultrafine-Grained Materials, E-MRS Fall Meeting, Warszawa, Poland (chair, 90 participants)
- 2011 Symposium Mechanical Properties of Nanomaterials-Experiments & Modelling, E-MRS Fall Meeting, Warszawa, Poland (chair, 100 participants)
- 2011 22nd Colloquium on Fatigue Mechanisms, Vienna, Austria (chair, 50 participants)
- 2008 Int.Workshop Multiscale Phenomena in Materials, Vienna, Austria (co-chair, 60 participants)
- 2005 Symposium High Pressure Technology of Nanomaterials, E-MRS Fall Meeting, Warszawa, Poland (co-chair, (80 participants)
- 2002 2nd Int.Conference on Nanomaterials by Severe Plastic Deformation, Vienna, Austria (chair, 153 participants)

• COMMISSIONS OF TRUST

- 2011 Member of Advisory Board of the Nanocenter of the Nanjing University of Science and Technology, China.
- 2010-2011 Member of Board of the Austrian Society of Chemistry and Physics
- 2007-2009 Member of Review Boards of German Research Foundation, Bonn, Germany, concerning network project types “Transregio” (2) and “Research Group” (1)
- 2004 Evaluator, Institute Physics of Materials-Czech Academy of Sciences, Brno, Czech Republic
- 2002 - Member of International NanoSPD Steering Committee
- 1996-2014 Member of Editorial Board, Kovove Materialy – Metallic Materials (Czech Republic)

• MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- 2008 - Austrian Society of Chemistry and Physics
- 2007 - TMS The Minerals, Metals & Materials Society, USA
- 2000 - DGM German Materials Society
- 1978 - Austrian Physical Society (ÖPG)

• EDITORSHIPS OF BOOKS & JOURNAL SPECIAL ISSUES

- 2013 **Mechanics of Materials Vol. 67 (Dec. 2013) Special Issue “Nanostructured Materials”** M.J. Zehetbauer, H. Garmestani, eds.; Selected Papers (ISI registered and peer reviewed) of Conference E-MRS 2011, Symposium C „Mechanical Properties of Nanomaterials: Experiment and Modelling“, Sept. 19-23, 2011, Warszawa, Poland
- 2012 **Journal of Materials Science Vol. 47, Issue 22 (Nov. 2012) Special Issue “Ultrafine Grained Materials”** S. N. Mathaudhu, X.Huang, H.S. Kim, T.G. Langdon, T.C. Lowe, R. Z. Valiev, X. Wu, M. J. Zehetbauer, Y.Th. Zhu eds.; Selected Papers (ISI registered and peer reviewed) of Symposium ”Ultrafine Grained Materials VIII” at TMS 2012 Annual Meeting, March 11-15, 2012, Orlando FL, USA
- 2009 **Bulk Nanostructured Materials;** Book with 30 review articles M. J. Zehetbauer & Y.T. Zhu eds. 2009, WILEY Weinheim, Germany
- 2003 **Advanced Engineering Materials Vol. 5, No. 5 (May 2003) Special Issue** Guest Editors: M. J. Zehetbauer, Keynote papers (ISI registered and peer reviewed) of Conference ‘Nanomaterials by Severe Plastic Deformation – NANOSPD2’, Dec. 9-13, 2002, Vienna, Austria

• MAJOR INTERNATIONAL COLLABORATIONS

T.Ungar, A.Revesz: X-Ray Line Profile Analysis (especially of dislocated and/or nanocrystalline materials), Department of Materials Physics, Eötvös Lorand University Budapest, Hungary

M.Calin, A.Gebert, T.Gemming: Amorphous Materials, Biomedical Alloys, Hydrogen Storage Nanomaterials, Transmission Electron Microscopy. Institute for Complex Materials, IFW Leibniz Institute for Solid State Physics and Materials Research, Dresden, Germany

G. Wilde, S. Divinski: SPD Nanomaterials, Diffusion, DSC, TEM: Institute of Materials Physics, University Münster, Germany

Y.Zhu, C.Koch: Nanomaterials from SPD and Ball Milling, Mechanical Properties. Department of Materials Science & Engineering, North Carolina State University, Raleigh, USA

10 Selected Publications (2007-2017)

[number of citations given in blue, without self citations 14 % less in average]

Total number of papers: 254 (accepted), 181 (peer reviewed)

h-factor : 34 (ISI WoS Thomson-Reuters), 36 (Scopus Mendeley)

- 1) G. V. Duong, N. Hanh, D. V. Linh, R. Groessinger, P. Weinberger, E. Schafler, M. Zehetbauer; Monodispersed Nanocrystalline $\text{Co}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$ Particles by Forced Hydrolysis: Synthesis and Characterization, J. Mag. Magn.Mater. 311, 46-50 (2007) [49]
- 2) R. Z. Valiev, M. J. Zehetbauer, Y. Estrin, H. W. Hoepfel, Y. Ivanisenko, H. Hahn, G. Wilde, H. J. Roven, X. Sauvage, T. G. Langdon; The Innovation Potential of Bulk Nanostructured Materials; Adv.Eng.Mater. 9, 527-533 (2007) [136]
- 3) D. Setman, E. Schafler, E. Korznikova, M.J. Zehetbauer; The Presence and Importance of Vacancy type Defects in SPD Nanometals; Mater.Sci.Eng. A 493, 116-122 (2008) [91]
- 4) M. J. Zehetbauer, R. Groessinger, H. Krenn, M. Krystian, R. Pippan, P. Rogl, T. Waitz, R. Wuerschum; Bulk Nanostructured Functional Materials by Severe Plastic Deformation; Adv. Eng. Mater. 12, 692–700 (2010) **Feature Paper** of Special Issue: Bulk Nanostructured Materials [41]
- 5) M. Krystian, M. Zehetbauer, G. Krexner, H. Kropik, B. Mingler; Hydrogen storage properties of bulk nanostructured ZK60 Mg alloy processed by Equal Channel Angular Pressing; J. Alloys Comp. 509S, S449-S455 (2011) [28]
- 6) E. Steyskal, B. Oberdorfer, W. Sprengel, M. Zehetbauer, R. Pippan, R. Würschum; Direct experimental determination of grain boundary excess vacancies in metals; Phys. Rev. Lett. 108, 055504 (2012) [28]
- 7) G. Rogl, D. Setman, E. Schafler, J. Horáky, M. Kerber, M. Zehetbauer, M. Falmbigl, P. Rogl, E. Royanian, E. Bauer; High Pressure Torsion, A New Processing Route For Thermoelectrics Of High ZTs By Means Of Severe Plastic Deformation; Acta Mater. 60, 2146-2157 (2012) [62]
- 8) G. Rogl, A. Grytsiv, P. Rogl, N. Peranio, E. Bauer, M. Zehetbauer, O. Eibl; n-type skutterudites $(\text{R},\text{Ba},\text{Yb})\text{yCo}_4\text{Sb}_{12}$ (R = Sr, La, Mm, DD, SrMm, SrDD) approaching ZT ~ 2.0, Acta Mater. 63, 30–43 (2014) [74]
- 9) R. Z. Valiev, Y. Estrin, Z. Horita, T. G. Langdon, M. J. Zehetbauer, Y. T. Zhu, Fundamentals of Superior Properties in Bulk NanoSPD Materials; Mater.Res.Lett. 4, 1-21 (2016) [28]
- 10) M. Boenisch, A. Panigrahi, M. Stoica, M. Calin, E. Ahrens, M. Zehetbauer, W. Skrotzki, J. Eckert Colossal thermal expansion and α -precipitation pathways in martensitic Ti-Nb alloys Nature Comm., accepted for publication (2017)

Important Invited/Keynote Lectures At International Conferences (2007-2017)

1. SPD Massive Nanomaterials – Successes and Open Questions, 17th Int.Europ.Conf. on Fracture (ECF 17), Brno, Czech Republic (Sept. 2008)
2. X-ray Line Profile Analysis – An Ideal Tool to Quantify Structural Parameters of Nanomaterials, 2010 TMS Annual Meeting, Symposium Neutron and X-Ray Studies of Advanced Materials III, Seattle, USA (Feb. 2010)
3. Successes and Problems in Functionalizing Bulk Nanostructured Materials; 17th Int. Sympos. on Metastable, Amorphous & Nanostr. Mater. (ISMANAM 2010) Zurich, Switzerland (July 2010)

4. Outstanding Physical Properties of SPD Processed Light Metals, ECEMP – European Centre for Emerging Materials and Processes Dresden, 10th Intern. Kolloquium, Dresden (Dec. 2010)
5. Hydrogen Storage in SPD-processed Nanometals, 14th Int.Conf. Rapidly Quenched & Metastable Materials, Salvador, Brazil (Sept. 2011)
6. Functional Nanomaterials by SPD: Hydrogen Storage, Shape Memory Effect, and Thermoelectricity, Topical Session „Bulk Nanostructured Materials“ at the DPG Spring Meeting, Berlin (March 2012)
7. Enhancing Functional Properties of Bulk Nanostructured Materials, BNM Int. Workshop on Bulk Nanostructured Metals, Kyoto University, Kyoto, Japan (June 2012)
8. Enhancing Mechanical Properties Of Biomedical Materials: Experiments & Modelling, Int. Conf. Comp. Modelling Nanostr.Mater. ICCMNM Frankfurt Institute for Advanced Studies, Goethe University, Frankfurt am Main, Germany, September 3-6 (Sept. 2013)
9. Designing Bulk Functional Nanomaterials By Severe Plastic Deformation, XII Int. Conference on Nanostructured Materials (NANO 2014) Moscow, Russia, July 13-18 (July 2014)
10. Improving Bulk Functional Nanomaterials By Means Of Severe Plastic Deformation; International Nanomaterials Workshop, June 6-7, 2015, Nanjing University of Science & Technology, Nanjing, China (2015)
11. SPD Functional Nanomaterials: New Highlights, New Insights
Int.Workshop on Giant Straining Processes for Advanced Materials GSAM 2015, Sept. 3-6, Fukuoka, Japan (2015)
12. 15 Years SPD-Processed Bulk Nanostructured Materials: From Mechanical to Functional Highlights 2016 Sustainable Industrial Processing Summit & Exhibition (SIPS 2016), Dubois Int.Symp., Nov. 6-10, 2016, Sanya, Hainan Island, China (2016)

Organisation of International Conferences (2007-2017, see more in CV)

- Int. Workshop “*Multiscale Phenomena in Materials*”, Wien, Austria (September 2008, 60 participants).
- 22nd & 28th Colloquium “Fatigue Mechanisms”, Wien, Austria (March 2011 & 2016, 50 & 60 participants.)
- E-MRS Fall Meeting, Warszawa, Poland 2011, Symposium “*Mechanical Properties of Nanomaterials-Experiments & Modelling*” (100 participants)
- E-MRS Fall Meeting, Warszawa, Poland 2012, Acta Materialia Gold Medal Symposium “*Recent Developments in the Processing and Properties of Ultrafine-Grained Materials*” (90 Participants)
- Winterschool of EU-MC-ITN Training Network “BioTiNet”: “*Materials Development on the Nanoscale*” Wien, Austria (Feb. 2014, 60 participants).

International Memberships (2007-2017, for prices & awards see CV)

- Member of International Steering Committee “Severe Plastic Deformation” (since 2002)

3 major research monographs, chapters in collective volumes and any translations thereof (2007-2017)

1. **M. Zehetbauer**, Y. Estrin, Modelling of Strength and Strain Hardening of Bulk Nanostructured Materials ch. 5 in: *Bulk Nanostructured Materials*, eds. M.J. Zehetbauer, Y.T.Zhu 2009 WILEY-VCH Verlag GmbH & Co, Weinheim, Germany
2. Y. Estrin, **M. Zehetbauer**, Niche Applications of Bulk Nanostructured Materials Processed by Severe Plastic Deformation, ch. 28 in: *Bulk Nanostructured Materials*, eds. M.J. Zehetbauer, Y.T.Zhu 2009 WILEY-VCH Verlag GmbH & Co, Weinheim, Germany
3. G. Rogl, P. Rogl, E. Bauer, **M.J. Zehetbauer**; “Severe Plastic Deformation, a Tool to Enhance Thermoelectric Performance”, in: *Thermoelectric Nanomaterials*, (Koumoto K., Mori T., Eds.), Springer Series in Materials Science 182; 2013 SPRINGER–Verlag Berlin Heidelberg, pp. 193-254