

Dr. rer. nat. Michael Feuerbacher

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Personal information

12. Nov. 1966 Born in Munich, Germany. Married, two children

Education

1996 Dr. rer. nat. at the RWTH Aachen University (summa cum laude)

1993 Diploma in Physics at the RWTH Aachen University

Employment

Since 1997 Leader of metals Section at the Institute of Microstructure Research (PGI-5) of the Forschungszentrum Jülich

2004 Visiting Scientist at the Laboratoire de Metallurgie Physique (LMP) at the Université de Poitiers, Poitiers, France

2000, 2002 Visiting Scientist at the Centre d'Elaboration de Matériaux et d'Etudes Structurales des Centre National de la Recherche Scientifique (CEMES-CNRS), Toulouse, France

1994 – 1996 Doctoral thesis at the Institute of Microstructure Research of the Forschungszentrum Jülich, Jülich, Germany

1992 – 1993 Master thesis (Diplomarbeit) at the 1st Institute of Physics (IA) of the RWTH Aachen University

Research interests

- Materials development in complex metallic systems
- Single-crystal growth by means of Czochralski-, Bridgman-, and Zone-melting methods
- Transmission electron microscopy, in high-resolution and diffraction contrast
- Mechanical testing and structural defects

Achievements

- More than 140 peer-reviewed papers in high-ranking scientific journals, 12 book chapters, more than 30 invited conferences on international conferences
- Member of the International advisory board of the International Conference on Quasicrystals
- 2010 – 2015 member of the Working Committee Metal and Materials Physics of the German Physical Society (DPG)
- Organization of conferences and symposia, i.e. at MRS, Euromat, ICQ, DPG

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List of 10 most important publications in peer-reviewed journals

1. M. Feuerbacher, E. Wuertz, A. Kovacs, C. Thomas: Single-Crystal Growth of a FeCoCrMnAl High-Entropy Alloy. *Mat. Res. Lett.* 2, 2017, 128.
2. M. Feuerbacher: Dislocations and deformation microstructure in an Al₂₈Cu₂₀Cr₁₁Fe₁₅Ni₂₆ high-entropy alloy. *Scientific Reports* 6, 2016, 29700.
3. P. Kozelj, S. Vrtnik, A. Jelen, S. Jazbec, Z. Jaglicic, S. Maiti, M. Feuerbacher, W. Steurer, and J. Dolinsek: Discovery of a Superconducting High-Entropy Alloy. *Phys. Rev. Lett.* 53, 2014, 187.
4. M. Heggen and M. Feuerbacher: Core structure and motion of metadislocations in the orthorhombic structurally complex alloy Al₁₃Co₄. *Mat. Res. Lett.*, 2014.
5. M. Feuerbacher: Dislocations in Icosahedral Quasicrystals. Invited Review. *Chem. Soc. Rev.* 41, 2012, 6745.
6. M. Armbrüster, K. Kovnir, M. Friedrich, D. Teschner, G. Wowsnick, M. Hahne, P. Gille, L. Szentmiklósi, M. Feuerbacher, M. Heggen, F. Girgsdies, D. Rosenthal, R. Schlögl, and Yu. Grin: Al₁₃Fe₄ as a Low-Cost Alternative for Palladium in Heterogeneous Hydrogenation. *Nature Materials* 11, 2012, 690.
7. M. Heggen, L. Houben, M. Feuerbacher: Plastic deformation mechanism in complex solids. *Nature Materials* 9, 2010, 332.
8. M. Heggen, F. Spaepen, and M. Feuerbacher: Creation and annihilation of free volume during homogeneous flow of a metallic glass. *J. Appl. Phys.* 97, 2005, 033506.
9. K. Urban and M. Feuerbacher. Structurally complex alloy phases. *J. Non Cryst. Sol.* 334 - 335, 2004, 143.
10. H. Klein, M. Feuerbacher, P. Schall and K. Urban: A novel type of dislocation in an Al-Pd-Mn quasicrystal approximant, *Phys. Rev. Lett.* 82 1999, 3468.

Total number of publications 1992 – 2017

- Papers in peer-reviewed journals: 144
- Papers in conference proceedings: 32
- Books and book chapters: 12
- Invited oral presentations: 31
- Patents: 2

Full List available under <http://feuerbacher.net/pers/pub.html>