

Curriculum vitae PD Dr.-Ing. Stefan Zaefferer

Personal Data

Born 15. 02. 1965 in Marl,
Nationality German,
married, 2 daughters
(7 and 10 years old),
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Germany
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Education

1984-1991 Studies on materials science, focus physical metallurgy and metal physics, TU Clausthal
Research works: *1. Grain refinement of shape-memory alloys*
2. Determination of k-factors for EDS analysis
Stay abroad Michigan Technological University, USA:
Stress corrosion cracking in Brass
Industrial experience: Thyssen Feinguss, Thyssen Stahl

Academic Degrees

1991 Engineering Diploma ("Mit Auszeichnung" = passed with distinction)
Diploma work: *Determination of slip systems in TiAl6V4*

1995 Doctor in engineering (PhD) (TU Clausthal) ("Mit Auszeichnung" = passed with distinction)
Thesis: *Development and applications of an electron microscope technique for the on-line determination of deformation systems in hexagonal metals.*
Supervisor: *Prof. Dr. R. Schwarzer, Institute for physical metallurgy and metal physics, TU Clausthal*

2009 Habilitation at the RWTH Aachen
Venia legendi: Microstructure Characterization
Thesis: *Orientation microscopy in SEM and TEM: fundamentals, techniques and applications in physical metallurgy*
Subject of habilitation lecture: *Energy storage for mobile applications: Materials science problems of hydrogen storage and battery materials*

Professional Experience

1988 – 1991 Student assistant, Institute for physical metallurgy and metal physics, TU Clausthal
EDS measurements

1991 – 1995 Scientific assistant, Institute for physical metallurgy and metal physics, TU Clausthal

- Collaboration at BRITE-EURAM project "Texture control of hexagonal materials"*
Supervision of projects and students in transmission electron microscopy
Development of computer programs for crystallographic analysis in SEM and TEM
Supervision of student experiments on phase transformation and thermal treatment of steels
- 1995 – 1997 Post-Doc, Laboratoire de Métallurgie Structurale, Université Paris-Sud, France (Scholarship of the « Académie de Science » and of IMPHY S.A.)
Study of nucleation mechanisms for the formation of the cube recrystallisation texture in Fe₃₆%Ni
Development of diffraction techniques for the investigation of highly deformed microstructures in TEM
- 1997 – 1998 Industry stay for knowledge transfer Industry-Academia, IMPHY S.A., France (3 month)
- 1998 – 1999 Post-Doc, Dept. of Material Science and Engineering, Kyoto University, Japan (Scholarship of the Japan Society for the Promotion of Science on recommendation of the Alexander von Humboldt-foundation)
Study of recrystallisation mechanisms in cubic face centred metals.
- 1999 - 2000 Scientific assistant, Department chemical analysis, Institute for materials science, TU-Darmstadt, Germany
- Since 2000 till today Head of the research group "microscopy and diffraction", department for microstructure physics and metal forming, and head of the service group "metallography", Max-Planck-Institute for Iron Research, Düsseldorf, Germany
Research interests:
Development of tools for electron microscopy and diffraction
Understanding formation of microstructures on steels, magnesium alloys, aluminium alloys, titanium alloys, intermetallics, solar cell materials
Relation between properties and microstructures of steels, measured by electron microscopy
Contributions to the scientific community:
Representative of the scientific members of the Max-Planck-Institute for Iron Research in the Max-Planck Society
Teaching classes on analytical transmission and scanning electron microscopy, physical metallurgy
Supervision of master and PhD students
Reviewer for many international journals
- since 2009 till today Lecturer at RWTH Aachen
International master course "Materials Technology": "Microstructures, Microscopy and Modelling"
Further teaching activities
Teaching of classes on electron microscopy, diffraction, texture- and microstructure analysis at Vienna University; UBC, Vancouver; Deakin University, Melbourne;

Awards and Honours

- 1996 Award of the Eberhard Schürmann-Foundation (TU Clausthal) for the PhD thesis
- 2001 *Young Scientist Award 2001, awarded by the First Joint Intern. Conf. On Recrystallization and Grain Growth, Aachen*
- 2002 *Masing Gedächtnispreis 2002 of the German Society for Materials Science*
- 2006 *ThyssenKrupp Werkstoffinnovationspreis (Materials Innovation Award)*
- 2007 *Best Poster Award, Rex & GG III, Korea (awarded to M. Frommert, S. Zaefferer, D. Dorner, L. Lahn, D. Raabe)*
- 2008 *Best Poster Award, EBSD 2008, Sheffield, England (awarded to C. Zambaldi and S. Zaefferer)*
- 2010 *ISIJ best paper award (Sawamura award) 2009 awarded to H.Sato, S. Zaefferer, Y. Watanabe for the paper "In-situ Observation of Butterfly-type Martensite in Fe-30mass%Ni Alloy during Tensile Test Using High-resolution EBSD"*