

## Florian Spieckermann (Mag. rer. nat. Dr. rer. nat.)

born July 7, 1979  
in Göttingen, Germany  
married  
two children , born 2012 and 2016

### Senior Scientist

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## Professional Experience

- from 06/2016 Senior scientist Montanuniversität Leoben, Austria
- 02/2016-09/2017 External lecturer Fachhochschule Technikum Wien, Vienna, Austria
- 05/2015-05/2016 Assessor and inspector for medical devices, AGES GmbH (Austrian Agency for Health and Food Safety), Vienna, Austria
- 01/2015-04/2015 Project report and accounting (FWF proj. P22913), publication work
- 01/2014-12/2014 Post doctoral researcher, Researchgroup Experimental Polymer Physics (Head: Günter Reiter) , Institute of Physics, University of Freiburg, Germany
- 12/2010-12/2013 Post doctoral researcher (FWF project P22913), Researchgroup Physics of Nanostructured Materials (Head: Michael Zehetbauer), University of Vienna , Austria
- 08/2010-12/2010 Researcher, Researchgroup Physics of Nanostructured Materials, University of Vienna, Austria
- 10/2009-06/2010 Freelancer, Researchgroup Physics of Nanostructured Materials, University of Vienna, Austria
- 10/2006-09/2009 Initiative college assistant, in the framework of the Initiative College *Experimental Materials Science - Nanostructured Materials* (Heads:H.P. Karnthaler, W. Schranz) , University of Vienna, Austria
- 04/2006-09/2006 Researcher in the framework of RTN-DEFINO (*Deformation and fracture instabilities in novel materials and processes*, EU-FP 5&6 project), Laboratory for Mechanics and Materials (Head: Elias Aifantis) , Aristotle University Thessaloniki, Greece

## Current research interets

- Fast calorimetry** of metastable metallic and polymeric systems in combination with time resolved X-ray diffraction
- Metallic glasses** under structural confinement and as functional (bio-)materials

## Academic Education

- 04/2006-12/2010 Doctoral thesis "*Investigation of Deformation Induced Changes of the Microstructure of Semicrystalline Polymers and their Impact on Mechanical Properties*", supervised by Ao. Univ. Prof. Dr. Michael Zehetbauer, Researchgroup Physics of Nanostructured Materials, University of Vienna, Austria (with distinction)
- 1999 - 2006 Physics, University of Vienna, Austria, graduation with "Magister der Naturwissenschaften"; supervised by Ao. Univ. Prof. Dr. Michael Zehetbauer, Institute of Materials Physics, University of Vienna, Austria (with distinction)

## Schooling

- 1990 - 1997 Gymnasium St.Ursula (high school), Vienna, Austria, graduation with Austrian Matura (A-Levels)
- 1992/1993 Cours de Français at Collège de Champittet, Lausanne, Switzerland (year abroad), graduation with Diplôme de Langue of the Alliance Française
- 1985 - 1989 Volksschule Bendagasse, Vienna, Austria and Janusz-Korzczak-Schule Göttingen, Germany (primary schools)

## Awards and Grants

- Co-Applicant FWF-ANR project I 3937 "Thermoplastic Net Shaping of Low-Density and Biocompatible Ti-Metallic Glasses for Dental Implants" (~ €700.000, -), bilateral project Austria-France, start 02/2019
- OEAD WTZ Project Austria-France (AMADEUS) "Strong and Ductile Bulk Metallic Glasses with optimized surface features for dental implant" (€7.000, -) 2018-2019
- Co-Applicant FWF project P22913 "Dislocations in semicrystalline polymers" (€299.000, -), 03/2011-09/2014
- Participant 58th Meeting of Nobel Laureates dedicated to physics, Lindau, Germany (one of 4 Austrian participants invited)
- Graduate Student Award Nanoplasticity Workshop, Lake Bostal, Germany, 2008
- CALIPSO and ELISA transnational access grants for synchrotron experiments in Hamburg (DESY, 7 grants) and Trieste (ELETTRA, 1 grant), 2007-2018.

## Invited Presentations

- 09 /2017 *How high pressure torsion affects the relaxation of bulk metallic glasses*, Florian Spieckermann, et al., Thermec 2018, Paris, France, **invited oral**
- 03 /2017 *In-situ synchrotron experiments as a tool to probe defect mediated plasticity in nanostructured materials*, F. Spieckermann, International Conference on Advances in Metallurgy, Materials and Manufacturing (ICAMMM-2017), Salem India, **invited oral**.

01/2015      *The role of dislocations for jerky creep of semicrystalline polymers*,  
F. Spieckermann et al., Energy Materials Nanotechnology Meeting  
(EMN), Orlando Florida, US , **invited oral**

**Selected Publications (total: 24 peer reviewed, 14 non-peer reviewed, 4 submitted, 64 conference contributions, 2 theses)**

5. *Dislocation movement induced by molecular relaxations in isotactic polypropylene*, F. Spieckermann, G. Polt, H. Wilhelm, M. Kerber, E. Schafner, M. Reinecker, V. Soprunyuk, S. Bernstorff and M.J. Zehetbauer, *Macromolecules*, 2017, 50, 6362-6368, doi:10.1021/acs.macromol.7b00931 .
4. *Micropatterning kinetics of different glass-forming systems investigated by thermo-plastic net-shaping*, Sarac, B., Bera, S., Spieckermann, F., Balakin, S., Stoica, M., Calin, M., Eckert, J., *Scripta Materialia*, Pergamon, 2017.  
doi: 10.1016/j.scriptamat.2017.02.038.
3. *The role of dislocations in  $\gamma$ -i-PP under plastic deformation investigated by X-ray line profile analysis*. Polt, G., Spieckermann, F., Wilhelm, H., Kerber, M., Schafner, E., Bernstorff, S., and Zehetbauer, M., *Mechanics of Materials*, (2013), 67, 126–132, doi:10.1016/j.mechmat.2013.05.010.
2. *Mechanical properties of filled antimonide skutterudites*, L. Zhang, G. Rogl, A. Grytsiv, S. Puchegger, J. Koppensteiner, F. Spieckermann, H. Kabelka, M. Reinecker, P. Rogl, W. Schranz, M. Zehetbauer, M.A. Carpenter, *Materials Science and Engineering B*, (2010), 170, 26-31, doi:10.1016/j.mseb.2010.02.022.
1. *Determination of lamella thickness distributions in isotactic polypropylene by X-ray line profile analysis*, F. Spieckermann, H. Wilhelm, M. Kerber, E. Schafner, S. Bernstorff and M.J. Zehetbauer, *Polymer*, (2010), 51, 4195-4199, doi:10.1016/j.polymer.2010.07.009.

**Reviewer for the following journals**

Journal of Polymer Engineering, Journal of Applied Polymer Science, Materials Science and Engineering A, Journal of Alloys and Compounds, Express Polymer Letters, Soft Materials, Journal of Materials Research, Scientific Reports, European Polymer Journal, Macromolecules, Thermochemica Acta, Journal of Materials Science, Polymer (with G.Reiter) Colloid and Polymer Science (with G.Reiter).

**Organization of Conferences**

- 27/08-01/09/2017    16th International Conference on Rapidly Quenched and Metastable Materials (RQ16), Leoben, Austria (member of local organizing committee, URL: <http://http://rq16.unileoben.ac.at>)
- 22/09-26/09/2014    6th International Conference on Polymer Behaviour, ICPB6, Vienna, Austria (member of local organizing committee and guest editor special issue in *Polymer International*, URL: <http://icpb6.univie.ac.at>)
- 19/09-23/09/2011    E-MRS 2011 Fall Meeting - Symposium C, Warsaw, Poland (administrative support)

### **Key Collaborations (in alphabetic order)**

**Prof. Dr. Alexander Bismarck**, Institute for Materials Chemistry, Univ. of Vienna, Austria

**Dr. Sigrid Bernstorff**, ELETTRA, Sincrotrone Trieste, Italy

**Prof. Dr. Damien Fabregue**, Laboratory MATEIS, INSA de Lyon, France

**Prof. Dr. Jörg Löffler**, Department of Materials, ETH Zurich, Switzerland

**Prof. Dr. Stefan Pogatscher**, Inst. of Nonferrous Metallurgy, Univ. of Leoben, Austria

**Dr. Martin Rosenthal**, European Synchrotron Radiation Facility ESRF, Grenoble, France

**Prof. Dr. Erhard Schafner**, Fac. of Physics, University of Vienna, Austria

**Dr. Mihai Stoica**, Department of Materials, ETH Zurich, Switzerland

**Dipl. Ing. Harald Wilhelm**, LKT-TGM Lab. of Polymer Engineering, Vienna, Austria

**Prof. Dr. Michael Zehetbauer**, Fac. of Physics, University of Vienna, Austria

### **Co-Supervision of (Graduate) Students**

Monika Antoni     PhD student with R. Grössinger & J. Eckert, in progress

Mohammad Zare Ghomsheh     PhD student with M. Zehetbauer, graduation 2018

Stephan Laule     PhD student with G. Reiter, graduation 2016

Gerald Polt     PhD student with M. Zehetbauer, graduation 2016

Hui Zhang     PhD student with G. Reiter, graduation 2014

Peter Cengeri     diploma student with M. Zehetbauer, graduation 2013

Gerald Polt     diploma student with M. Zehetbauer, graduation 2011

### **Teaching Experience**

*at Universities of Vienna (UVIE), Freiburg im Breisgau (UFR), Leoben (MUL) and at the University of Applied Sciences FH Technikum Wien (FHTW)*

since 10/2018     MUL: Lecture on Materials Pyhsics II (*optical and thermal properties*)

since 10/2017     MUL: Lab. courses in modern metallographic methods

since 03/2017     MUL: Lecture on Metastable materials

10/2016-09/2017     MUL: Exerc. courses in physics I and II (*mechanics, electro-magnetism, thermodynamics, relativity, ...*)

since 02/2016     FHTW: Lecture "Materials science and lightweight construction"

2014     UFR: Exerc. courses in experimental physics II&III (*electro-magnetism, quantum mechanics, relativity, optics*)

2004 - 2013     UVIE: Lab. course in materials physics (*plasticity*)

2008 - 2013     UVIE: Lab. course in basic physics (*Anfängerpraktikum*)

- 2009 - 2013 UVIE: Lab. course “Nanomaterials” (*production of nanomaterials, calorimetry, X-ray diffraction, nanoindentation*)
- 2004 - 2013 Participation in several public relation activities of the University of Vienna (*physics:open, Lange Nacht der Forschung, Kinderuni*)

### **Laboratory Experience**

X-ray and neutron diffraction (small and wide angle scattering including more than 10 campaigns at synchrotrons (ELETTRA, DORIS III, PETRA III, ESRF) and neutron sources (BNC)), calorimetry (DSC, DTA), mechanical testing (tensile, compression, fatigue, incl. extensometry), nanoindentation, resistometry, microscopy (optical, SEM, AFM), rheology (DMA)

### **Participation in Workshops**

- 07/2014 SoMaS School: soft matter under external constraints, International Research Training Group (IRTG) “Soft Matter Science: Concepts for the Design of Functional Materials”, Mittelwihl, Fance
- 11/2010 Motivation of employees and team building, Systemisches Institut Wien/University of Vienna, Vienna, Austria
- 05/2009 X-ray line profile analysis: a training course from basics to practice, Eötvös Loránd University, Budapest, Hungary
- 06/2008 58th Meeting of Nobel Laureates dedicated to physics, Lindau, Germany (one of 4 Austrian participants invited)
- 07/2006 19th Panhellenic Conference and Summerschool on Nonlinear Science and Complexity, Thessaloniki, Greece

### **Other Activities**

- since 1996 Member of Vienna Celtic Rugby Football Club including diverse activities (B-Team Manager, Assistant Coach Austrian U18 National Team in Luxembourg 2005)
- since 2000 Voluntary paramedic at Malteser Hospitaldienst Austria (MHDA)
- 2000/2001 Facility management officer MHDA Vienna (voluntary)
- 1997 - 1999 Member of LUC-Rugby (Lausanne Université Club)

October 5, 2018