

CURRICULUM VITAE

<http://www.researcherid.com/rid/A-5779-2009>

PROF. DR. CLAUDIA FELSER born 28.07.1962

Divorced (1996), one daughter (1990)



EDUCATION

Dr. rer. nat. 1994, University of Cologne, Germany
Advisor: Prof. G. Hohlneicher, Physical Chemistry Department

Diploma 1989, University of Cologne, Inorganic Chemistry, Germany

PROFESSIONAL EXPERIENCE

12/2011 – present Director Max Planck Institute Chemical Physics for Solids

6/2003 – 11/2011 Professor (C4/W3) Institute of Inorganic and Analytical Chemistry, Johannes Gutenberg - University, Mainz, Germany. www.superconductivity.de

2010 Offer of a Full Professor position from TU Darmstadt

2002 Offer of a Full Professor position from Osnabrück University

10/1996 – 5/2003 Assistant Professor (C1), Institute of Inorganic and Analytical Chemistry of the Johannes Gutenberg - University, Mainz, JGU Germany.

2000 Visiting Professor at the University of Caen (France)

1998 – 1999 Visiting Scientist in Princeton (USA), host group, Prof. Robert Cava

AWARDS

6 – 10/1996 Postdoctoral grant of the Max Planck-Society, Germany

1994 – 1996 Postdoctoral grant of the Deutsche Forschungsgemeinschaft

1995 Grant Centre International des Etudiants et Stagiaires, France

2001 Order of Merit (Verdienstorden) of the state Rheinland-Pfalz

2010 IEEE Magnetics Society, Distinguished Lecturer Award

2010 IBM Shared University Research (SUR) Grant; (500 000\$ for University Mainz)

2010 Nakamura Lecture Award of the University of California, Santa Barbara

SERVICE TO DEPARTMENT, UNIVERSITY AND THE SCIENTIFIC COMMUNITY

2001 – 2006 Scientific head of the NaT-Lab for secondary school students at the JGU

2004 - 2010 Spokesperson of the DFG research unit 559, www.magnetoResistance.de

2005 - 2008 Spokesperson of the Graduate School of Excellence of the state Rhineland Palatinate „Strongly correlated Quantum Systems“ (MATCOR), www.matcor.de

2005 - present Board of „Stiftung Innovation des Landes Rheinland-Pfalz“

2007 - present Board of the Johannes Gutenberg – College of Excellence of the JGU

2007 - present	Director of DFG Graduate School of Excellence GSC 266, www.mainz.uni-mainz.de
2010 - present	Spokesperson of the JST-DFG research unit 1464, www.aspimatt.de
2010 – 2014	Director of the Zeiss Excellence Cluster: "Inverse design of glass"
2005 - present	Scientific Board of the Institute for Microtechnique MAINZ (IMM)
2010 - present	Advisory board of the IEEE Magnetic Society
2010 - present	Advisory board of Magnetic Materials and Magnetism conference IEEE series
2010 – present	Advisory board of the EFRC Center of Inverse Design of the NREL , USA

SUPPORT OF YOUNG RESEARCHERS

I have supervised more than 10 Diploma and 30 Ph.D students. Two of the former students are doing their Habilitation, Dr. Sabine Wurmehl has recently received an Emmy Noether grant. My current research group consists of three senior scientists, 11 post docs (three preparing their habilitation), 13 doctoral students, and two diploma students. Nearly half of the Ph.D students are women, one of my best diploma students has moved to Princeton for her Ph.D.

SELECTED INVITED TALKS AT CONFERENCES 2011

- 2011 DPG spring meeting Symposium on topological insulators "Tunable multifunctional topological insulators in ternary Heusler compounds", March 16
- APS spring meeting in Dallas, Texas "Tunable multifunctional topological insulators in ternary Heusler compounds", in the invited session on New materials for spin quantum Hall effect and topological insulators, March 22
- ACS spring meeting in Anaheim, California "Heusler compounds: Novel materials for spintronics and energy applications", Cava Symposium, March 26
- MRS Meeting in San Francisco "Heusler compounds for thermoelectric applications symposium "Nanoscale heat transfer: Thermoelectrics, thermophotovoltaics, and emerging thermal devices", April 28
- Spin Caloritronics III, Lorentzcenter, Leiden, Netherlands Heusler compounds for spincaloric applications", 9-13 May

MORE THAN 25 INVITED TALKS AT CONFERENCES AND WORKSHOPS
 MORE THAN 100 UNIVERSITY/INDUSTRY LECTURES AND SEMINARS

The top ten publications (Sep. 2011):

1. *Spintronics: A challenge for materials science and solid-state chemistry*, C. Felser, G. Fecher, B. Balke, *Angewandte Chemie Int. Ed.* 46 (2007) 668. **Times Cited: 143**
2. *Electronic and magnetic phase diagram of beta-Fe_{1-x}Se with superconductivity at 36.7 K under pressure*. S. Medvedev, T. M. McQueen, T. Palasyuk, M. I. Erements, R. J. Cava, I. A. Trojan, S. Naghavi, F. Casper, V. Ksenofontov, G. Wortmann and C. Felser, *Nature Materials* 8 (2009) 630, **Times Cited: 135**
3. *Extreme sensitivity of superconductivity to stoichiometry in Fe_{1-x}Se*, T. M. McQueen, Q. Huang, V. Ksenofontov, C. Felser, Q. Xu, H. Zandbergen, Y. S. Hor, J. Allred, A. J. Williams, J. Checkelsky, N. P. Ong and R. J. Cava, *Phys. Rev. B* 79 (2009) 014522. **Times Cited: 127**
4. *Geometric, electronic, and magnetic structure of Co₂FeSi: Curie temperature and magnetic moment measurements and calculations*, S. Wurmehl, G. H. Fecher, H. C. Kandpal, V. Ksenofontov, H.-J. Lin, J. Morais, and Claudia Felser, *Phys. Rev. B* 72 (2005) 184434. **Times Cited: 106**

5. *Large negative magnetoresistance effects in $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$* , T. Block, C. Felser, G. Jakob, J. Enslin, B. Mühling, P. Gütlich, R. J. Cava, J. Solid State Chem. 176 (2003) 646. **Times Cited: 88**
6. *Calculated electronic and magnetic properties of the half-metallic, transition metal based Heusler compounds*, H. C. Kandpal, G. H. Fecher, C. Felser, J. Phys. D: Appl. Phys. 40 (2007) 1507. **Times Cited: 80**
7. *Element-specific magnetic moments from core-absorption magnetic circular dichroism of the doped Heusler alloy $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$* , H.J. Elmers, G. Fecher, D. Valdaitsev, S. Nepijko, A. Gloskowskij, G. Jakob, G. Schönhense, S. Wurmehl, T. Block, C. Felser, P.-C. Hsu, W.-L. Tsai, S. Cramm, Phys. Rev. B 67 (2003) 104412. **Times Cited: 75**
8. *Correlation in the transition-metal-based Heusler compounds Co_2MnSi and Co_2FeSi* H.C. Kandpal, G. H. Fecher, C. Felser Phys. Rev. B 73 (2006) 094422. **Times Cited: 72**
9. *Investigation of Co_2FeSi : The Heusler compound with highest Curie temperature and magnetic moment*, S. Wurmehl, G. H. Fecher, H. C. Kandpal, V. Ksenofontov, and Hong-Ji Lin, C. Felser, Appl. Phys. Lett. 88 (2006) 032502. **Times Cited: 72**
10. *Properties of the quaternary half-metal-type Heusler alloy $\text{Co}_2\text{Mn}_{1-x}\text{Fe}_x\text{Si}$* B. Balke, G.H. Fecher, et al. Phys. Rev. B 74 (2006) 104405. **Times Cited: 61**

FURTHER SELECTED RECENT PUBLICATIONS:

- The Structural Phase Transition in Fe_{1-x}Se* , T. M. McQueen, A. J. Williams, P. W. Stephens, J. Tao, Y. Zhu, V. Ksenofontov, F. Casper, C. Felser, and R. J. Cava, Phys. Rev. Lett. **103** (2009) 057002. **Times Cited: 43**
- Tunable Multifunctional Topological Insulators in Ternary Heusler Compounds*, S. Chadov, X.-L. Qi, J. Kübler, G. H. Fecher, C. Felser, S.-C. Zhang, Nature Mater. **9** (2010) 541. **Times Cited: 49**
- Efficient spin injector scheme in Heusler materials*, S. Chadov, T. Graf, K. Chadova, X. Dai, F. Casper, G.H. Fecher, C. Felser, Phys. Rev. Lett. 107 (2011) 047202
- Symmetry of valence states of Heusler compounds explored by linear dichroism in hard X-ray photoelectron spectroscopy*. S. Ouardi, G.H. Fecher, X. Kozina, G. Stryganyuk, B. Balke, and C. Felser, E. Ikenaga, T. Sugiyama, N. Kawamura, M. Suzuki, K. Kobayashi, Phys. Rev. Lett. 107 (2011) 036402
- Topological Insulators in Ternary Compounds with a Honeycomb Lattice*, H. J. Zhang, S. Chadov, L. Muehler, B. Yan, X. L. Qi, J. Kübler, S.C. Zhang, C. Felser, Phys. Rev. Lett. 106 (2011) 156402
- Domain formation in $\text{CuIn}_x\text{Ga}_{1-x}\text{Se}_2$ thin-film photovoltaics*, Christian D. R. Ludwig, Thomas Gruhn, Claudia Felser, Tanja Schilling, Johannes Windeln, Phys. Rev. Lett. 105 (2010) 025702.
- I-II-V half-Heusler compounds for optoelectronics: Ab initio calculations*, David Kieven, Reiner Klenk, Shahab Naghavi, Reiner Klenk, Thomas Gruhn, Claudia Felser, Phys. Rev. B 81, (2010) 075208
- Electronic properties of $\text{Ni}^{1+}/\text{Ni}^{2+}$ nickelate, $\text{La}_3\text{Ni}_2\text{O}_6$, isoelectronic with superconducting cuprates*, V. V. Poltavets, Gerhard H. Fecher and Claudia Felser; Martha Greenblatt, Phys. Rev. Lett. 102 (2009) 046405
- Challenge of Magnetism in Strongly Correlated Open-Shell 2p Systems* J. Winterlik, G. H. Fecher, C. A. Jenkins, C. Felser, C. Mühle, K. Doll, M. Jansen, L. M. Sandratskii, J. Kübler, Phys. Rev. Lett. 102 (2009) 016401.
- Mn_3Ga , a compensated ferrimagnet with high Curie temperature, low magnetic moment for spin torque transfer applications*, B. Balke, G. H. Fecher, J. Winterlik, C. Felser, Appl. Phys. Lett. 90 (2007) 152504.

ORGANIZATION OF CONFERENCES SYMPOSIA SINCE 2007

Program Chair: Intermag Vancouver 2012, **Program committee:** 56th MMM 2011 Scottsdale, Intermag Taipei 2011, 55th MMM Atlanta 2010, 11th joint Intermag/MMM Washington DC, 53rd MMM Austin 2008;
Symposia: MRS Fall 2011, EMRS Fall 2011, 55th MMM 2010, MRS Fall 2009, MRS Fall 2008, DPG Spring meeting; **Workshops:** Joint JST-DFG 2009, CECAM-EPFL (photovoltaics) 2008, yearly for the DFG FG 559;

additionally two to three summer schools partially jointly with Stanford, IBM, Santa Barbara, University of Dijon

RESEARCH SUPPORT (SELECTION):

The current third party funding was more than 2 Mill. Euro per year for the last three years:

DFG: German Science Foundation BMBF, BMWi, BMU: ministry of science, economy, environment

Graduate School of Excellence MAINZ: DFG Graduate School of Excellence "MATERIALS SCIENCE IN MAINZ" www.mainz.uni-mainz.de, Director Funding: 12 Mill. € for 25 members, 2007- 2012

Computational Materials Science gestützte Optimierung des Wirkungsgrades von CIGS-Dünnschichtszell, BMU with IBM, Schott 6 Mill. € Funding for Felser group: 500 000 € for four years, 2008 - 2011

Advanced spintronic materials and transport phenomena www.aspimatt.de; DFG-JST, Spokesperson Claudia Felser, 4 Mill. € Funding for Felser group: 1.5 Mill. €, 2010-2013

Hochenergie-Photoemission (HAXPES) für die Materialforschung, BMBF 2.5 Mill. € Funding for Felser group: 680 000 € for six years 2007-2013

ThermoHEUSLER Project: BMWi with Bosch, Isabellenhütte, Fraunhofer IPM, Freiburg, 5 Mill. € Funding for Felser group: 410 000 €, 2010 - 2012

Transport measurements and Mössbauer investigations of FeSe and related novel superconductors under high pressure (SPP1458) Funding for Felser group: 200 000 €, 2010-2013

Zeiss-Excellence Cluster Inverse Design of Materials without Translation Symmetry, Director: Claudia Felser, Funding for the team: 1 Mill. €, 2010 - 2014

Thermoelectric materials for 2020: Heusler compounds with IAV GmbH, BASF GmbH, Fraunhofer IPM, Freiburg, Funding for Felser group: 300 000 €, 2011 - 2013

Technology-Platform Spintronics, Rhineland Palatinate and EFRE, Funding for Felser group: 1,2 Mill. € 2007 – 2013

PATENTS

New inorganic intermetallic compounds with powder magnetoresistance effect and their composites are useful as magnetic field sensor, in spin electronics or for making memory reading head or tunneling magnetoresistance effect device, C. Felser, T. Block, Patentanmeldung DE 101 08 760 A1, International H01L43/08, in 2003 published WO/2002/069356, EP2002722119, CH02805360.5 JP2002568388 granted 2010 US10469098 granted 2005 KR1020037011101 bought by IBM

Neue Materialien mit hoher Spinpolarisation: Halbmetall/Halbleiter- Kombination, Filing date 12.09.2008 Germany DE102008046920.3

Inhomogene Verbindungen mit hohem Magnetwiderstand im paramagnetischen Bereich bei Raumtemperatur, ihre Herstellung und Verwendung, Frederick Casper and Claudia Felser, Germany DPMA102008026241.2

Electrical Devices Formed using Ternary Semiconducting Compounds, Claudia Felser, Shoucheng Zhang, Xiao Zhang, University Mainz and Stanford. Provisional Patent Application Serial No.: 61/415,26 Filing Date: November 18, 2010; US 61/415,266

Half Heusler Legierungen mit maßgeschneiderter Phasenseparation, Martin Köhne, Claudia Felser, Tanja Graf, Hans Joachim Elmers, Bosch, University Mainz, submitted July 2010