

## CURRICULUM VITAE

Frank Steglich

**AFFILIATION:** Max Planck Institute  
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### EDUCATION

University of Göttingen, Germany	1963	"Vordiplom" in Physics
	1966	"Diplom" in Physics
	1969	"Dr. rer. nat."
University of Köln, Germany	1976	"Habilitation" in Physics

### APPOINTMENTS

1966 - 1969	"Wissenschaftlicher Assistent" (Research Fellow), Georg August University, Göttingen, Germany
1969 - 1976	"Wissenschaftlicher Assistent" (Research Fellow), University of Köln, Germany
1976 - 1978	"Privatdozent" (Lecturer), University of Köln, Germany
1978 - 1980	Professor of Physics (C3), Technical University (TU) Darmstadt, Germany
1980 - 1998	Professor of Physics (C4), TU Darmstadt, Germany
1996 - 2012	Director, Department of Solid-State Physics, Max Planck Institute for Chemical Physics of Solids (MPI CPfS), Dresden, Germany
1999 - present	Honorary Professor, TU Dresden, Germany
2012 - present	Director emeritus, MPI CPfS, Dresden, Germany
2012 - present	Director, Center for Correlated Matter (CCM), Zhejiang University (ZJU), Hangzhou, China

### HONORS

1986 - 87	Academy Stipend, Volkswagen Foundation
1986	Gottfried Wilhelm Leibniz Prize, German Research Foundation (Deutsche Forschungsgemeinschaft, DFG)
1986 - 2011	Several Named Lectures in Germany and abroad
1989	Hewlett Packard Europhysics Prize, European Physical Society (together with G.G. Lonzarich and H.R. Ott)
1989	Humboldt Award for the Promotion of the Scientific Cooperation between France and the Federal Republic of Germany (Gay Lussac Humboldt Prize)
1990	International Prize (James C. McGroddy Prize) for New Materials, American Physical Society (together with Z. Fisk, H.R. Ott and J.L. Smith)
1996	Honorary Professorship, W. Trzebiatowski Institute for Low Temperature and Structure Research (INTiBS), Polish Academy of Sciences (PAN), Wrocław, Poland
1999	Corresponding Member, Academy of Sciences, Göttingen, Germany
1999	Corresponding Member, Academy of Sciences of Saxony, Leipzig, Germany
2000	Magnetism Award, International Union of Pure and Applied Physics, ICM 2000, Recife, Brazil
2000	Honorary Doctorate, University of Augsburg, Germany
2002	Member, National Academy of Science and Engineering (acatec)
2004	Stern Gerlach Medal, German Physical Society (DPG)
2005	Honorary Doctorate, Goethe University, Frankfurt/Main, Germany
2005	Honorary Doctorate, University of Köln, Germany
2005	Order of Merit, Federal Republic of Germany (Das große Verdienstkreuz des Bundesverdienstordens der Bundesrepublik Deutschland)

2006	Bernd T. Matthias Prize for Superconducting Materials
2008	Honorary Doctorate, Jagiellonian University, Kraków, Poland
2010	Foreign Member, PAN
2012 - present	Qiushi Distinguished Visiting Professor, Zhejiang University (ZJU), Hangzhou, China
2012 - present	Distinguished Visiting Professor, Institute of Physics (IOP), Chinese Academy of Sciences (CAS), Beijing, China

## PUBLICATIONS, PATENTS

More than 840 publications in refereed journals and books, 2 patents.

### Some recent publications

MAGNETISM AND SUPERCONDUCTIVITY DRIVEN BY IDENTICAL  $4f$  STATES IN A HEAVY - FERMION METAL; S. Nair, O. Stockert, U. Witte, M. Nicklas, R. Schedler, K. Kiefer, J.D. Thompson, A.D. Bianchi, Z. Fisk, S. Wirth and F. Steglich, Proc. Natl. Acad. Sci. USA **107**, 9537 (2010).

FERMI-SURFACE COLLAPSE AND DYNAMICAL SCALING NEAR A QUANTUM CRITICAL POINT; S. Friedemann, N. Oeschler, S. Wirth, C. Krellner, C. Geibel, F. Steglich, S. Paschen, S. Kirchner and Q. Si, Proc. Natl. Acad. Sci. USA **107**, 14547 (2010).

HEAVY FERMIONS AND QUANTUM PHASE TRANSITIONS; Q. Si and F. Steglich, Science **329**, 1161 (2010).

MAGNETICALLY DRIVEN SUPERCONDUCTIVITY IN  $\text{CeCu}_2\text{Si}_2$ ; O. Stockert, J. Arndt, E. Faulhaber, C. Geibel, H.S. Jeevan, S. Kirchner, M. Loewenhaupt, K. Schmalzl, W. Schmidt, Q. Si and F. Steglich, Nature Phys. **7**, 119 (2011).

HEAVY-FERMION SUPERCONDUCTIVITY; F. Steglich, in: 100 Years of Superconductivity, P. Kes and H. Rogalla (eds.), Taylor & Francis, CRC Press (2011) p.283.

EMERGING LOCAL KONDO SCREENING AND SPATIAL COHERENCE IN THE HEAVY-FERMION METAL  $\text{YbRh}_2\text{Si}_2$ ; S. Ernst, S. Kirchner, C. Krellner, C. Geibel, G. Zwirnagl, F. Steglich and S. Wirth, Nature **474**, 362 (2011).

SUPERCONDUCTIVITY IN Ce- AND U-BASED “122” HEAVY-FERMION COMPOUNDS; O. Stockert, S. Kirchner, F. Steglich and Q. Si, J. Phys. Soc. Jpn. **81**, 011001 (2012).

THERMAL AND ELECTRICAL TRANSPORT ACROSS A MAGNETIC QUANTUM CRITICAL POINT; H. Pfau, S. Hartmann, U. Stockert, P. Sun, S. Lausberg, M. Brando, S. Friedemann, C. Krellner, C. Geibel, S. Wirth, S. Kirchner, E. Abrahams, Q. Si and F. Steglich, Nature **484**, 493 (2012).

FERROMAGNETIC QUANTUM CRITICAL POINT IN THE HEAVY-FERMION METAL  $\text{YbNi}_4(\text{P}_{1-x}\text{As}_x)_2$ ; A. Steppke, R. Kuchler, S. Lausberg, E. Lengyel, L. Steinke, R. Borth, T. Lühmann, C. Krellner, M. Nicklas, C. Geibel, F. Steglich and M. Brando, Science **339**, 933 (2013).

CHARGE-DOPING-DRIVEN EVOLUTION AND NON-FERMI-LIQUID BEHAVIOR IN THE FILLED SKUTTERUDITE  $\text{CePt}_4\text{Ge}_{12-x}\text{Sb}_x$ ; M. Nicklas, S. Kirchner, R. Borth, R. Gumeniuk, W. Schnelle, H. Rosner, H. Borrmann, A. Leithe-Jasper, Yu. Grin and F. Steglich, Phys. Rev. Lett. **109**, 236405 (2012).

NERNST EFFECT: EVIDENCE OF LOCAL KONDO SCATTERING IN HEAVY FERMIONS; P. Sun and F. Steglich, Phys. Rev. Lett. **110**, 216408 (2013).

THE FIRST BINARY COMPOUND OF COBALT AND BISMUTH:  $\text{CoBi}_3$  – A NEW SUPERCONDUCTOR; U. Schwarz, S. Tencé, O. Janson, C. Koz, C. Krellner, U. Burkhardt, H. Rosner, F. Steglich and Y. Grin, Angew. Chem. Int. Ed. **52**, 9853 (2013).

HYBRIDIZATION GAP AND FANO RESONANCE IN  $\text{SmB}_6$ ; S. Rößler, T.-H. Jang, D. J. Kim, L. H. Tjeng, Z. Fisk, F. Steglich and S. Wirth, Proc. Natl. Acad. Sci. USA **111**, 4798 (2014).

CONTIGUOUS  $3d$  – AND  $4f$  – MAGNETISM: TOWARDS STRONGLY CORRELATED  $3d$  - ELECTRONS IN  $\text{YbFe}_2\text{Al}_{10}$ ; P. Kunthia, P. Peratheepan, A. Strydom, Y. Utsumi, K.-T. Ko, K.-D. Tsuei, L.H. Tjeng, F. Steglich and M. Baenitz, Phys. Rev. Lett. **113**, 216403 (2014).

MULTIPLE QUANTUM PHASE TRANSITIONS IN A HEAVY FERMION ANTIFERROMAGNET; L. Jiao, Y. Kohama, E.D. Bauer, J.-X. Zhu, J. Singleton, T. Shang, J.L. Zhang, Y. Chen, H.O. Lee, T. Park, M. Jaime, J.D. Thompson, F. Steglich, Q. Si and H.Q. Yuan, Proc. Natl. Acad. Sci. USA **112**, 673 (2015).

## **SYNERGISTIC ACTIVITIES SINCE 1996**

Founding Director, MPI CPFS, Dresden, Germany, 1996

Member, Founding Committee of the Laboratory for Pulsed High Magnetic Fields Dresden, Dresden, Germany, 1999

Vice President, DFG, 2001 - 2007

Member, Board of Governors, German-Israeli Foundation, 2002 – 2007

Member, International Advisory Board, Institute for Materials Research, Tohoku University, Sendai, Japan, 2003

Member, External Advisory Committee, National High Magnetic Field Laboratory, Florida State University, Tallahassee, USA, 2003 - 2008

Chairman, Scientific Advisory Board of the Center for Electronic Correlations and Magnetism (EKM), University of Augsburg, Germany, since 2006

Member, Advisory Committee, Institute for Quantum Matter, Johns Hopkins University, Baltimore, USA, 2010

Member, Scientific Committee, Einstein Foundation, Berlin, Germany, since 2012

Founding Director, Center for Correlated Matter, ZJU, Hangzhou, China, 2012

Member, Scientific Advisory Board, Rice Center for Quantum Materials, Rice University, Houston, USA, since 2014

## **RECENT COLLABORATORS AT OTHER AFFILIATIONS**

E. Abrahmas (UC Los Angeles, CA, USA), T. Cichorek and A. Pikul (INTiBS, PAN, Wrocław, Poland), S. Friedemann (University of Bristol, UK), P. Gegenwart and A. Loidl (University of Augsburg, Germany), K. Ishida (University of Kyoto, Japan), L. Jiao (Zhejiang University, Hangzhou, China), A. Jesche (Ames Lab., Iowa State University, IA, USA), C. Krellner, M. Lang and J. Müller (Goethe University, Frankfurt/M., Germany), M. Loewenhaupt (TU Dresden, Germany), K. Miyake (Osaka University, Japan), S. Paschen (TU Vienna, Austria), Q. Si (Rice University, Houston, TX, USA), A. Steppke (University of St Andrews, UK), A.M. Strydom (University of Johannesburg, South Africa), P. Sun (IOP, CAS, Beijing, China), J. D. Thompson (Los Alamos National Laboratory, NM, USA), H. von Löhneysen (Karlsruhe Institute of Technology, Karlsruhe, Germany), H.Q. Yuan (ZJU, Hangzhou, China)

## **GRADUATE AND POSTDOCTORAL ADVISORS OF FRANK STEGLICH**

Graduate advisor: R. Hilsch, Georg August University, Göttingen, Germany

Postdoctoral advisors: G. von Minnigerode and D.K. Wohlleben, University of Köln, Germany

## **DIPLOMA AND DOCTORAL THESIS ADVISING**

Diploma students: ≈ 120

Doctoral students ≈ 60

among them: P.A. van Aken (Max Planck Institute for Intelligent Systems, Stuttgart, Germany), D. Meschede (University of Bonn, Germany), S. Horn and P. Gegenwart (University of Augsburg, Germany), K. Gloos (University of Turku, Finland), G. Sparr (Max Planck Institute for Nuclear Physics, Heidelberg, Germany), M. Lang, J. Müller and C. Krellner (Goethe University, Frankfurt/M., Germany), H.Q. Yuan (ZJU, Hangzhou, China), A. Bentien (University of Århus, Denmark), H.S. Jeevan (Saha Institute of Nuclear Physics; Kolkata, India), S. Friedemann (University of Bristol, UK)

Postdoctoral fellows: ≈ 40

among them: L. Luo (Shanghai Institute of Microsystems and Information Technology, CAS, Shanghai, China), N.L. Wang (International Center for Quantum Materials, Peking University, Beijing, China), D. Kaczorowski, T. Cichorek and A. Pikul (INTiBS, PAN, Wrocław, Poland), N.K. Sato (Nagoya University, Japan), S. Süllo (TU Braunschweig, Germany), S. Paschen (TU Wien, Austria), T. Tayama (University of Toyama, Japan), F.M. Grosche (Cavendish Laboratory, University of Cambridge, Cambridge, UK), K. Tenya (Shinshu University, Nagano, Japan), Z. Hossain (Indian Institute of Technology, Kanpur, India), R. Viennois (CNRS, University of Montpellier, France), C.F. Miclea (National Institute for Materials Research, Bukarest, Romania), J. Haase (University of Leipzig, Germany), Y. Tokiwa (University of Kyoto, Kyoto, Japan), R. Daou (CNRS, University of Caën, France)