

# Curriculum Vitae

Univ.-Prof. Dr. Friedrich Aumayr  
TU Wien (Vienna University of Technology)



## Present position

Professor of Experimental Physics  
Head of the Atomic and Plasma Physics Research Group  
and Deputy Director of Institute of Applied Physics (formerly known as Institut für Allgemeine Physik)  
TU Wien - Vienna University of Technology  
Wiedner Hauptstr. 8-10/E134, A-1040 Wien, Austria  
Tel.: +43 1 58801 13430, Fax: +43 1 58801 13499  
E-mail: [aumayr@iap.tuwien.ac.at](mailto:aumayr@iap.tuwien.ac.at)  
URL: <http://www.iap.tuwien.ac.at/www/atomic>

## Research interests

Atomic Physics: Physics of highly charged ions, atomic collisions (ions–atom, ion–molecule), “hollow” atom formation and decay  
Surface Physics: Basic ion - surface interaction processes (electron emission, sputtering, nanostructure formation), capillary guiding of ion beams, AFM/STM studies of ion-induced surface nanostructures  
Plasma Physics: Fusion plasmas, plasma-wall-interaction, plasma diagnostics and modelling, atomic data for fusion, ECR ion sources, X-ray lasers  
Other Interests: Popularization of science

## Personal information

born August 16, 1959 in Linz, Austria, Austrian Citizenship, married, 3 children

## Academic degrees

1991 Univ. Dozent - Habilitation in Experimental Physics, Vienna University of Technology  
1985 Dr.techn. (PhD) in Technical Sciences from Vienna University of Technology, Austria  
1982 Mag.rer.nat. (MSc.) in Mathematics & Physics from J. Kepler University Linz, Austria  
1982 Dipl.Ing. (MSc.) in Technical Physics from J. Kepler University Linz, Austria

## Scientific publications

More than **200** publications in international peer-reviewed journals (among them **17 Phys. Rev. Lett.**).  
More than **50** invited talks at international conferences.

*Citation report according to "Science Citation Index Expanded" (status 2. Oct. 2011):*

**h - index (Hirsch number): 33**

Total number of citations: 3821 (without self citations: 2734)

Average number of citations per year: 136

For an up-to-date ISI-statistics, including citations and Hirsch-index, please visit ISI-ResearcherID online at <http://www.researcherid.com/rid/A-3920-2009>.

## Research Grants

Grants obtained as principal investigator since 1989	
10 Grants from FWF (Austrian Science Foundation)	1 168 k€
6 Grants from EU and EURATOM	1 958 k€
11 Grants from ÖAW (Austrian Academy of Sciences)	534 k€
10 Grants from other funding agencies	554 k€
<b>in total</b>	<b>(58 Mio. öS) 4 214 000 €</b>

## Professional career

- 2008 University Professor (Univ.-Prof.)
- 2006 Deputy Director (stellv. Institutsvorstand) of Institut f. Allgemeine Physik (IAP)  
Vienna University of Technology (TU Wien)
- 1997 Professor of Experimental Physics (ao.Univ.-Prof.), IAP, TU Wien
- 1992 Associate Professor (with tenure), IAP, TU Wien
- 1990 Research group leader "Atomic and Plasma Physics", IAP, TU Wien
- 1989 (Jan. – Dec.): Postdoctoral Researcher, Princeton University, Princeton/NJ USA, Plasma  
Physics Laboratory and MAE-Department, X-Ray Laser Group, under Symon Suckewer
- 1986 Assistant Professor, IAP, TU Wien
- 1982 Research Assistant, Austrian Academy of Sciences

## Research visits at foreign laboratories

- 2008 (May): Max Planck Institut f. Kernphysik, Heidelberg, Germany
- 2008 (April): ARIBE Accelerator Facility GANIL-CIMAP, Caen, France
- 2005 (May): Max Planck Institut f. Kernphysik, Heidelberg, Germany
- 2001 (April): Humboldt University Berlin, Germany
- 1993 (Feb. – Mar.): Lawrence Livermore Nat'l Lab., CA, EBIT Group
- 1992 (April): Lawrence Livermore Nat'l Laboratory, CA, EBIT Group
- 1992 (Jan. – Mar.): Heavy Ion Accelerator Facility GSI-Darmstadt/Germany
- 1990 (July – Aug.): Princeton Plasma Physics Lab. PPPL, X-Ray Laser Group, Princeton/NJ USA,
- 1989 (Jan. – Dec.): Princeton University, Princeton/NJ USA, MAE-Department, X-Ray Laser Group
- 1985 (Jan.): Ruhruniversität Bochum/Germany
- 1983 – 1988: various research periods of 2 – 4 weeks at TEXTOR Tokamak, Institut f. Plasmaphysik,  
KFA-Jülich/Germany

## Fellowships, honors and awards

- 2008 Berufstitel "Universitätsprofessor"
- 2001 Technikpreis der Wiener Wirtschaft
- 2000 Recipient of the "Innovative Projects" grant of TU Wien
- 1996 Röntgen-Preis (Award, Univ. Giessen/Germany)
- 1989 Erwin Schrödinger Fellowship (Austrian Science Fund FWF)
- 1985 Promotio sub auspiciis praesidentis rei publicae  
(PhD thesis awarded with honors sub auspiciis praesidentis for excellence)

## Memberships and official functions

- 2010 - present Chair of the Atomic, Molecular & Optical Physics Division (AMOPD) of the European Physical Society EPS
- 2010 - present Member of the Editorial Board for the SCI Journal "*Nuclear Instruments and Methods in Physics Research Section B - Beam Interactions with Materials and Atoms*" (Elsevier Science BV, Amsterdam, Netherlands, ISSN: 0168-583X)
- 2006 - present Vice - "Head of Research Unit" of the Association EURATOM-ÖAW
- 2009 - present Board-Member of the Austrian Chemical-Physical Society (CPG)
- 2008 - present Member of Rotary Club St. Pölten (District 1910)
- 2011 - present Member of the Faculty Council of the Faculty of Physics at TU Wien
- 2009 - present Member of the International Committee of the Conference on Elementary Processes in Atomic Systems (CEPAS)
- 2006 - present Member of the International Committee of the Intern. Symposium on Atomic Level Characterizations for New Materials and Devices (ALC)
- 2006 - present Member of the International Scientific Committee of the Symposium on Surface Science (3S)
- 2004 - present Member of the International Scientific Committee of the International Conference on Atomic Collisions in Solids (ICACS)
- 2002 - present Member of the International Scientific Committee of the International Workshop on Inelastic Ion - Surface Collisions (IISC)
- 1998 - present Member of the International Advisory Committee of the International Conference on Highly Charged Ions (HCI)
- 1997 - present Member of the Commission of the Austrian Academy of Sciences (ÖAW) for the Coordination of Fusion Research in Austria (KKKÖ)
- 2007 - 2010 Member of the Science and Technology Advisory Committee STAC of EFDA (European Fusion Development Agreement)
- 2000 - 2002 Austrian representative in the EU - Fusion Physics Committee (FPC)
- 1997 - 2003 Executive Officer and Member of the Executive Committee of the International Conference on the Physics of Electronic, Photonic and Atomic Collisions (ICPEAC)
- 1996 - 1997 Chair of the Atomic -, Molecular - and Plasma Physics Division (FAMP) of the Austrian Physical Society (ÖPG)
- 1983 - present Member of the Austrian Physical Society (ÖPG)

## Organisation of international conferences and workshops

- ECAMP11 11<sup>th</sup> European Conference on Atomic, Molecular and Optical Physics 2013, Aarhus, Denmark, June 24 - 28, 2013 (international chair)
- 3S\*12 Symposium on Surface Science 2012, St. Christoph am Arlberg/Austria, March 11 - 17, 2012 (conference co-chair)
- PWI 2010 9<sup>th</sup> Annual Meeting of the Plasma-Wall-Interaction Task Force of EFDA, Vienna/Austria, Nov. 3 - 5, 2010 (local organizer)
- 3S\*10 Symposium on Surface Science 2010, St. Christoph am Arlberg/Austria, March 7 - 13, 2010 (conference co-chair)
- 3S\*08 Symposium on Surface Science 2008, St. Christoph am Arlberg/Austria, March 2 - 8, 2008 (conference co-chair)
- IISC-16 International Workshop on Inelastic Ion-Surface Collisions, Schloss Hernstein, NÖ/Austria, Sep. 17 - 22, 2006 (conference chair)
- 3S\*06 Symposium on Surface Science 2006, St. Christoph am Arlberg/Austria, March 5 - 11, 2006 (conference co-chair)

- 3S\*04 Symposium on Surface Science 2004, St. Christoph am Arlberg/Austria, Feb. 28 - March 6, 2004 (conference co-chair)
- 3S\*02 Symposium on Surface Science 2002, St. Christoph am Arlberg/Austria, March 3 - 9, 2002 (conference co-chair)
- ECOSS-18 18th European Conference on Surface Science, Vienna/Austria, Sep. 21 - 24, 1999 (organizing committee member)
- ICPEAC-97 20th International Conference on the Physics of Electronic and Atomic Collisions, Vienna/Austria, July 23 - 19, 1997 (local co-chair)
- 3S\*95 Symposium on Surface Science 1995, Kitzsteinhorn/Austria, April 23 - 29, 1995 (conference co-chair)
- HCI-94 7th International Conference on the Physics of Highly Charged Ions, Vienna/Austria, Sep. 19 - 23, 1994 (chair of the local organizing committee)

## Experience in scientific evaluation, review and impact assessment

- 2007 - present Member of Program Advisory Committee for Interdisciplinary Research (CERIG) at GANIL in Caen/France
- 2007 - present Member of the ASDEX Upgrade Program Committee at the Max Planck Institute of Plasma Physics in Garching/Germany
- 2007 - present EU expert evaluator for the European Research Council (7<sup>th</sup> Framework Program FP)
- 2007 - 2009 Expert Evaluator for the annual review of a EU-Network of Excellence (6<sup>th</sup> FP)
- 2004 - 2006 Member of the EU-Panel for the evaluation of NEST (New and Emerging Science and Technology) proposals (6<sup>th</sup> FP)
- 2004 Member of the EU-Panel for the evaluation of Marie Curie Conferences (6<sup>th</sup> FP)
- 2003 - 2004 EU expert evaluator for EURATOM Fusion fellowships (6<sup>th</sup> FP)
- 2003 Member of the EU-Physics Panel for Marie Curie Fellowships (6<sup>th</sup> FP)
- 2003 EU expert evaluator for EURATOM Training Fellowships (6<sup>th</sup> FP)
- 2003 Member of the EU-Physics Panel for Intra - European Fellowships (EIF) (6<sup>th</sup> FP)
- 1999 Chairman of the EU-Physics Panel for the evaluation of Individual Marie Curie Fellowships (4<sup>th</sup> FP)
- 1999 Expert Evaluator for MidTerm Reviews of TMR Networks
- 1997 Member of the EU-Physics Panel for the evaluation of TMR research networks (4.FP)
- 1996 - 1999 Member of the EU-Physics Panel for the evaluation of TMR research training grants (3<sup>rd</sup> and 4<sup>th</sup> FP)
- 1990 - 1991 Scientific Secretary of the International Commission for the Evaluation of Physics Research in Austria
- 1992 - present Referee and Evaluator for various National Funding Agencies (e.g. US-DOE, Helmholtz-Gemeinschaft, ÖAW – Austrian Academy of Sciences, ANR, CNRS, Czech Academy of Sciences, NFST-Chile, NRF South Africa, etc.)
- 1985 - present Referee for numerous international scientific journals (e.g. Nature Nanotechnology, Phys.Rev.Lett., PRA, PRB, JPB, CPL, EPJ, PLA, NIMB, IJMS, RSI, JNM, etc.)

## Teaching (list of lectures and courses)

Main lectures at present: Fundamentals of Physics I (Mechanics, Waves, Thermodynamics, Relativity) and III (Quantum Mechanics, Atomic & Nuclear Physics) for Physics Bachelors (1<sup>st</sup> and 3<sup>rd</sup> Semester), special Course on Atomic Collision Physics for Physics Master and Diploma Students.

- 134.104 VO Grundlagen der Physik I WS 5,0 (Compulsory course on Fundamentals of Physics I)
- 134.105 VO Grundlagen der Physik II SS 5,0 (Compulsory course on Fundamentals of Physics II)
- 134.120 VO Grundlagen der Physik III WS 3,0 (Compulsory course on Fundament. of Physics III)
- 134.514 VO Atomare Stoßprozesse (Optional course on Atomic Collision Physics)

- 134.109 UE Übungen zu Grundlagen der Physik I (Compulsory exercises)  
 134.110 UE Übungen zu Grundlagen der Physik II (Compulsory exercises)  
 134.125 UE Übungen zu Grundlagen der Physik III (Compulsory exercises)  
 134.133 PA Projektarbeit Experimentelle Atomphysik  
 134.114 PA Projektarbeit Interactions with Surfaces  
 134.051 PR Vorb. zur Diplomarbeit f. Lehramtskandidaten  
 134.065 PV Privatissimum f. Dissertanten  
 134.624 PV Privatissimum f. Diplomanden

For an up-to-date list of present courses please visit <http://www.iap.tuwien.ac.at/www/atomic/teaching>.

### **Supervision of 17 PhD students** (degree received in)

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| Martin Gieler (1992)               | Gregor Kowarik (2011)                |
| Kristine Töglhofer (1993)          | Katharina Igenbergs (2011)           |
| Manfred Pöckl (1995)               | Artur Golczewski (in progress)       |
| Christoph Lemell (1998)            | Robert Ritter (in progress)          |
| Hannes Eder (2000)                 | Katharina Dobes (in progress)        |
| Günter Hayderer (2000)             | Matthias Willensdorfer (in progress) |
| Johannes Stöckl (2003)             |                                      |
| Stefan Cernusca (2003)             |                                      |
| Sylvicley Figueira da Silva (2007) |                                      |
| Dorian Bridi (2008)                |                                      |
| Walter Meissl (2008)               |                                      |

### **Supervision of 39 diploma students** (degree received in)

- |                             |                                |
|-----------------------------|--------------------------------|
| Manfred Pöckl (1992)        | Asena Kuzucan (2007)           |
| Walter Koppensteiner (1992) | Clemens Grünberger (2007)      |
| Martin Weber (1993)         | Oliver Hekele (2008)           |
| Christoph Lemell (1994)     | Michael Brunmayr (2008)        |
| Peter Platzer (1996)        | Robert Ritter (2008)           |
| Gregor Horvath (1996)       | Daniel Winklehner (2008)       |
| Johannes Stöckl (2000)      | Josef Kamleitner (2009)        |
| Stefan Cernusca (2000)      | Katharina Dobes (2009)         |
| Ernst Galutschek (2000)     | Christoph Gösselsberger (2009) |
| Alexander Diem (2002)       | Matthias Willensdorfer (2009)  |
| Benedikt Hackl (2004)       | Christopher Vasko (2009)       |
| Karl Schmid (2004)          | Kai Iskratsch (2009)           |
| Manfred Schabernig (2005)   | Markus Hinterhofer (2010)      |
| Michael König (2005)        | Martin Sturn (2010)            |
| Martin Fürsatz (2006)       | Paulus Naderer (2011)          |
| Katharina Kaska (2006)      | Markus Wallerberger (2011)     |
| Martin Simon (2006)         | Stefan Fossati (in progress)   |
| Gregor Kowarik (2007)       | Elisabeth Gruber (in progress) |
| Katharina Igenbergs (2007)  | Dominik Schrempf (in progress) |
| Sebastian Pleschko (2007)   |                                |