

Curriculum Vitae

Univ.-Prof. Dr. Friedrich Aumayr
TU Wien, Vienna, Austria



Present position

Professor of Ion - and Plasma Physics
Director of Institute of Applied Physics at TU Wien
Head of the Atomic and Plasma Physics Research Group
TU Wien – Vienna University of Technology, Institute of Applied Physics
Wiedner Hauptstr. 8-10/E134, 1040 Vienna, Austria
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E-mail: aumayr@iap.tuwien.ac.at URL: <http://www.iap.tuwien.ac.at/www/atomic>

Director of the Austrian Fusion Research Program at the Austrian Academy of Sciences (ÖAW)
Head of Research Unit of Fusion@ÖAW URL: <http://www.oeaw.ac.at/fusion/>

Research interests

Ion Physics: Physics of highly charged ions, atomic collisions (ions–atom/molecule, ion-surface), “hollow” atom formation and decay, ions as tools to modify and investigate surfaces
Plasma Physics: Fusion plasmas, plasma-wall-interaction, plasma diagnostics and modelling, atomic data for fusion, ECR ion sources, X-ray lasers
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, 2D-materials (graphene, hBN, MoS₂)
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, TU Wien, Austria
1985 Dr.techn. (PhD) in Technical Sciences from TU Wien, Austria (advisor: HP. Winter)
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 (advisor: P. Bauer)

Scientific publications

More than **280** publications in international peer-reviewed journals (among them **21 Phys. Rev. Lett.**, **1 Nature Comm.**, **2 Appl. Phys. Lett.**, etc.). More than **60** invited talks at international conferences.
ISI “Web of Knowledge” (15.10.2018): 5641 citations (4033 without self citations), **h - index: 40**
Scholar google [profile](#): 7636 citations, **h-index: 45**; i10-index: **173**;
ResearcherID <http://www.researcherid.com/rid/A-3920-2009>.
Other IDs: ORCID [0000-0002-9788-0934](https://orcid.org/0000-0002-9788-0934),
Scopus Author ID: [7005607254](https://scopus.com/authid/detail.uri?authorId=7005607254)

Research Grants

Grants obtained as principal investigator since 1989		
12	Grants from FWF (Austrian Science Foundation)	1 492 k€
7	Grants from EU and EURATOM	2 583 k€
21	Grants from ÖAW (Austrian Academy of Sciences)	751 k€
14	Grants from other funding agencies	1 041 k€
	in total	(80 Mio. öS) 5.87 Million €

Professional career

2016 -	Director (Institutsvorstand) of Institute of Applied Physics (IAP) TU Wien
2015 -	Full Professor of Ion- and Plasma Physics at TU Wien
2013 -	Director (Head of Research Unit) of the Austrian Nuclear Fusion Program at ÖAW
2008 -	University Professor (Berufstitel)
2006 - 2015	Deputy Director (stellv. Institutsvorstand) of Institute of Applied Physics (IAP) TU Wien
1997 - 2014	ao.Professor of Experimental Physics, TU Wien
1992 - 1997	Associate Professor (with tenure) Inst. f. Allgemeine Physik, TU Wien
1990 -	Research group leader "Atomic and Plasma Physics", IAP, TU Wien
1989 - 1990	Postdoctoral Researcher, Princeton University, Princeton/NJ USA, Plasma Physics Laboratory and MAE-Department, X-Ray Laser Group, advisor: Symon Suckewer
1986 - 1991	Univ. Assistant, Inst. f. Allgemeine Physik, TU Wien, Vienna, Austria
1986	Military Service
1982 - 1985	Research Assistant, Austrian Academy of Sciences (ÖAW)

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, FZ-Jülich/Germany

Fellowships, honors and awards

2018	Best Lecture Award 2018 - TU Wien, Faculty of Physics
2018	Best Teacher Finalist 2018 - TU Wien, Faculty of Physics
2017	Best Lecture Award 2017 - TU Wien, Faculty of Physics
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)



Present Memberships and official functions

- since 2018 Chair of the Foundation Committee of the Friedrich Schiedel Foundation for Energy Technology
- since 2014 *Head of Research Unit of Fusion@ÖAW* (Director of the Austrian Nuclear Fusion Research Program)
- since 2014 Representative of ÖAW/Austria in the General Assembly of the EUROfusion-Consortium (Co-Fund Action within Horizon 2020, grant agreement 633053)
- since 2014 Member of the Scientific Advisory Board of Helmholtz Zentrum Dresden Rossendorf (HZDR), Germany
- since 2014 Member of the ÖAW Commission for Participation in Large-Scale Research Facilities
- since 2010 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)
- since 2011 Member of the Faculty Council of the Faculty of Physics at TU Wien
- 2019 -2023 Member of the Executive Committee of the International Conference on the Physics of Electronic, Photonic and Atomic Collisions (ICPEAC)
- since 2009 Member of the International Committee of the Conference on Elementary Processes in Atomic Systems (CEPAS)
- since 2008 Member of Rotary Club St. Pölten (District 1910)
- since 2006 Member of the International Committee of the Intern. Symposium on Atomic Level Characterizations for New Materials and Devices (ALC)
- since 2006 Member of the International Scientific Committee of the Symposium on Surface Science (3S)
- since 2002 Member of the International Scientific Committee of the International Workshop on Inelastic Ion - Surface Collisions (IISC)
- since 1998 Member of the International Advisory Committee of the International Conference on Highly Charged Ions (HCI)
- since 1997 Member of the Commission of the Austrian Academy of Sciences (ÖAW) for the Coordination of Fusion Research in Austria (KKKÖ)
- since 1983 Member of the Austrian Physical Society (ÖPG)

Past Memberships and official functions

- 2014 - 2018 Member of the Foundation Committee of the Friedrich Schiedel Foundation for Energy Technology
- 2013 - 2016 Vice-Chair of the Atomic, Molecular & Optical Physics Division (AMOPD) of the European Physical Society EPS
- 2007 - 2016 Member of the Program Advisory Committee for Interdisciplinary Research (CERIG) at GANIL in Caen/France
- 2014 - 2015 President of the Chemical-Physical Society (CPG) Vienna, Austria
- 2010 - 2013 Chair of the Atomic, Molecular & Optical Physics Division (AMOPD) of the European Physical Society EPS
- 2013 - 2013 *Head of Research Unit of the Association EURATOM-ÖAW* (FP7 Fusion program)
- 2006 - 2012 *Deputy - Head of Research Unit of the Association EURATOM-ÖAW*
- 2004 - 2012 Member of the International Scientific Committee of the International Conference on Atomic Collisions in Solids (ICACS)
- 2009 - 2011 Board-Member of the Chemical-Physical Society (CPG) Vienna, Austria
- 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)

Organisation of international conferences and workshops

- ICPEAC-2021 32nd Intern. Conference on Photonic, Electronic and Atomic Collisions 2021, Ottawa, Canada, July 20 - 27, 2021 (international chair)
- ICPEAC-2019 31st Intern. Conference on Photonic, Electronic and Atomic Collisions 2019, Douville, France, July 24 - 30, 2019 (international vice-chair)
- 3S*18 Symposium on Surface Science 2018, St. Christoph am Arlberg/Austria, Feb. 25 – March 3, 2018 (conference co-chair and local organizer)
- ECAMP-2016 12th European Conference on Atomic, Molecular and Optical Physics 2016, Frankfurt, Germany, Sep. 4 - 9, 2016 (international vice-chair)
- 3S*16 Symposium on Surface Science 2016, St. Christoph am Arlberg/Austria, Feb. 21 - 27, 2016 (conference co-chair and local organizer)
- 3S*14 Symposium on Surface Science 2014, St. Christoph am Arlberg/Austria, March 9 - 15, 2014 (conference co-chair and local organizer)
- ECAMP11 11th European Conference on Atomic, Molecular and Optical Physics 2013, Aarhus, Denmark, June 24 - 28, 2013 (international chair)
- SPARC2012 SPARC-Collaboration Workshop 2012, Austrian Academy of Sciences, Vienna, Austria, Nov. 26 - 28, 2012 (organizing committee member)
- 3S*12 Symposium on Surface Science 2012, St. Christoph am Arlberg/Austria, March 11 - 17, 2012 (conference co-chair and local organizer)
- PWI 2010 9th 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 and local organizer)
- 3S*08 Symposium on Surface Science 2008, St. Christoph am Arlberg/Austria, March 2 - 8, 2008 (conference co-chair and local organizer)
- 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 and local organizer)
- 3S*04 Symposium on Surface Science 2004, St. Christoph am Arlberg/Austria, Feb. 28 - March 6, 2004 (conference co-chair and local organizer)
- 3S*02 Symposium on Surface Science 2002, St. Christoph am Arlberg/Austria, March 3 - 9, 2002 (conference co-chair and local organizer)
- ECOSS-18 18th European Conference on Surface Science, Vienna/Austria, Sep. 21 - 24, 1999 (organizing committee member)
- FA-AMP 1997 Fachtagung des Fachausschuss Atom-, Molekül & Plasmaphysik der ÖPG, TU Wien, Vienna, Austria, 23. Sep. 1997 (local organizer)
- ICPEAC-1997 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 and local organizer)
- HCI-1994 7th International Conference on the Physics of Highly Charged Ions, Vienna/Austria, Sep. 19 - 23, 1994 (chair of the local organizing committee)
- FA-AMP 1988 Fachtagung des Fachausschuss Atom-, Molekül & Plasmaphysik der ÖPG, TU Wien, Vienna, Austria, 27. Sep. 1988 (local co-organizer)

ÖPG-1985 35. Annual Meeting of the Austrian Physical Society ÖPG, TU Wien Austria, Sep. 23 - 27, 1985 (member 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 - 2013 Member of ASDEX Upgrade Program Comm. at the MPI Plasma Physics Garching/D

2007 - 2010 EU expert evaluator for the European Research Council (7th Framework Program FP)

2007 - 2009 Expert Evaluator for the annual review of a EU-Network of Excellence (6th FP)

2004 - 2006 Member of the EU-Panel for evaluation of NEST proposals (6th FP)

2004 Member of the EU-Panel for the evaluation of Marie Curie Conferences (6th FP)

2003 - 2004 EU expert evaluator for EURATOM Fusion fellowships (6th FP)

2003 Member of the EU-Physics Panel for Marie Curie Fellowships (6th FP)

2003 EU expert evaluator for EURATOM Training Fellowships (6th FP)

2003 Member of the EU-Physics Panel for Intra - European Fellowships (EIF) (6th FP)

1999 Chairman of EU-Physics Panel for evaluation of Indiv. Marie Curie Fellowships (4thFP)

1999 Expert Evaluator for MidTerm Reviews of TMR Networks

1996 - 1999 Member of the EU-Physics Panel for the evaluation of TMR research networks (4.FP) and TMR research training grants (3rd and 4th 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. DFG, 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, ACS Appl. Nano Mat., Nature Scientific Reports, JPB, 2D Materials, CPL, EPJ, EPL, 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 (1st and 3rd Semester)

Lectures and courses currently offered:

138.005 VO Grundlagen der Physik I WS 5,0 (Compulsory course on Fundamentals of Physics I)**

134.120 VO Grundlagen der Physik III WS 3,0 (Compulsory course on Fundament. of Physics III)***

138.072 VU Einführung in das Physikstudium (Introduction into the physics curriculum)

138.514 VO Atomare Stoßprozesse (special course on atomic collision physics)

138.172 VO Ionen-Festkörper-Wechselwirkungen (special course on ion-solid-interactions)

136.067 VO Ringvorlesung Doktoratskolleg TU-D

134.133 PA Projektarbeit Experimentelle Atomphysik

134.141 PA Projektarbeit Ionenphysik

134.065 PV Privatissimum f. Dissertanten

134.081 SE Seminar aus Allgemeiner Physik

** received the "Best Lecture Award 2017" of the Faculty of Physics at TU Wien

*** received the "Best Lecture Award 2018" of the Faculty of Physics at TU Wien

Lectures and courses offered in the past:

134.105 VO Grundlagen der Physik II SS 5,0 (Compulsory course on Fundamentals of Physics II)

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)
 134.114 PA Projektarbeit Interactions with Surfaces
 134.051 PR Vorb. zur Diplomarbeit f. Lehramtskandidaten

Supervision of 24 PhD students (degree received in)

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|------------------------------------|----------------------------------|
| Martin Gieler (1992) | Katharina Igenbergs (2011) |
| Kristine Töglhofer (1993) | Robert Ritter (2013) |
| Manfred Pöckl (1995) | Matthias Willensdorfer (2013) |
| Christoph Lemell (1998) | Katharina Dobes (2014) |
| Hannes Eder (2000) | Elisabeth Gruber (2017) |
| Günter Hayderer (2000) | Bernhard Berger (2017) |
| Johannes Stöckl (2003) | Florian Laggner (2017) |
| Stefan Cernusca (2003) | Reinhard Stadlmayr (in progress) |
| Sylvicley Figueira da Silva (2007) | Janine Schwestka (in progress) |
| Dorian Bridi (2008) | Georg Harrer (in progress) |
| Walter Meissl (2008) | Paul Szabo (in progress) |
| Gregor Kowarik (2011) | Herbert Biber (in progress) |

Supervision of 58 diploma/master students (degree received in)

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|--------------------------------|-------------------------------|
| Manfred Pöckl (1992) | Christopher Vasko (2009) |
| Walter Koppensteiner (1992) | Kai Iskratsch (2009) |
| Martin Weber (1993) | Markus Hinterhofer (2010) |
| Christoph Lemell (1994) | Martin Sturn (2010) |
| Peter Platzer (1996) | Paulus Naderer (2011) |
| Gregor Horvath (1996) | Markus Wallerberger (2011) |
| Johannes Stöckl (2000) | Elisabeth Gruber (2012) |
| Stefan Cernusca (2000) | Dominik Schrempf (2013) |
| Ernst Galutschek (2000) | Alexander Veiter (2013) |
| Alexander Diem (2002) | Florian Laggner (2013) |
| Benedikt Hackl (2004) | Valerie Smejkal (2016) |
| Karl Schmid (2004) | Reinhard Stadlmayr (2016) |
| Manfred Schabernig (2005) | Janine Schwestka (2016) |
| Michael König (2005) | Lorenz Bergen (2016) |
| Martin Fürsatz (2006) | Sebastian Keerl (2016) |
| Katharina Kaska (2006) | Georg Harrer (2016) |
| Martin Simon (2006) | Marko W. Mayr (2017) |
| Gregor Kowarik (2007) | Dominic Blöch (2017) |
| Katharina Igenbergs (2007) | Johannes Gnilsen (2017) |
| Asena Kuzucan (2007) | Matthias Schmidtmayr (2017) |
| Clemens Grünberger (2007) | David Melinc (2017) |
| Oliver Hekele (2008) | Jakob Kirschner (2017) |
| Michael Brunmayr (2008) | Paul Szabo (2017) |
| Robert Ritter (2008) | Lukas Leonhartsberger (2018) |
| Daniel Winklehner (2008) | Herbert Biber (2018) |
| Josef Kamleitner (2009) | Daniel Mayer (in progress) |
| Katharina Dobes (2009) | Matthias Werl (in progress) |
| Christoph Gösselsberger (2009) | Anna Niggas (in progress) |
| Matthias Willensdorfer (2009) | Christian Cupak (in progress) |