

PROFESSORSHIP FOR SEMICONDUCTOR PHYSICS



INFORMATION FOR APPLICANTS

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1. The Johannes Kepler University Linz (Austria)

The Johannes Kepler University Linz (JKU Linz, <http://www.jku.at>) is a young European university with an expert and accomplished focus on the academic areas of social and economic sciences, law, natural sciences and engineering. The studies of Human Medicine were added in 2014. During its fifty year history, the university has achieved a national and international standing with its manifold achievements in research and teaching. The JKU is a campus-style university located north of the city of Linz. The unique campus environment provides close proximity between all disciplines. Interdisciplinary collaboration, innovative base-knowledge research, and close ties to local businesses and the business community have helped to establish its principal direction. By upholding principles of unity in research and teaching as well as fostering advanced methods of knowledge transfer, the JKU Linz generates and provides services for the greater good of society, the business community, fine arts and culture. Core target groups include students, the scientific community as well as organizations representing private and public life.

As the largest institution of research and education in Upper Austria, and thus as a knowledge transfer center, the university contributes to the continual support and development of Upper Austria as a dynamic economic region. The JKU is also actively involved in competence centers, and has developed spin-off programs that support the establishment of new companies. The JKU's mission statement defines and outlines the university's basic principles for future development and its strategic concept.

A special feature of the university is the campus-style layout and easy access to all four faculties

- Faculty of Social Sciences, Economics & Business
- Faculty of Law
- Faculty of Engineering & Natural Sciences
- Faculty of Medicine

on 350,000 m² of land located in a northern section in the city of Linz.

2. The Faculty of Engineering & Natural Sciences

The Faculty of Engineering & Natural Sciences is comprised of 58 institutes in the following fields of base-knowledge research as well areas of application-oriented research:

- Chemistry and Polymer Engineering
- Computer Science
- Mathematics
- Mechatronics
- Physics

See; <https://www.jku.at/technisch-naturwissenschaftliche-fakultaet> for detailed information.

3. The Department of “Physics”

The department of Physics at the JKU consists of the following six institutes, partially subdivided into divisions. It focuses primarily on the physics of condensed matter and biophysics.

- Institute of Applied Physics
- Institute of Biophysics
 - Department of Applied Experimental Biophysics
 - Department of Molecular and Membrane Biophysics
- Institute of Experimental Physics
 - Department of Atom and Surface Physics
 - Department of Soft Matter Physics
- Institute for Semiconductor Physics and Solid State Physics
 - Department of Solid State Physics
 - Department of Semiconductor Physics
- Institute of Theoretical Physics
 - Department of Theoretical Biophysics
 - Department of Many Particle Systems
- Center of Surface and Nanoanalytics (ZONA)

4. Requirements for the Position of “Semiconductor Physics”

The position requires expertise to represent the area of Semiconductor Physics in research and teaching as well as acquiring external funding. The area of Semiconductor Physics is represented at the JKU by the Division of Semiconductor Physics at the Institute of Semiconductor and Solid State Physics. The institute has a wide range of equipment to fabricate samples as well as to characterize their structural, optical, electrical, and magnetic properties. In addition, the institute has access to a new cleanroom for lithography, nanostructuring, and fabrication of prototype devices.

4.1. Research

The successful candidate is expected to conduct and pursue outstanding high-quality and internationally visible research as well as to play a central role in the organization, efficient use and expansion of the new cleanroom.

The research activities of the new professor should synergistically strengthen those at the Institute of Semiconductor Physics and Solid State Physics. Predominant research activities shall include systems with potential applications in the field of quantum technologies and/or photonics based on inorganic semiconductors.

The candidate’s qualifications for the position will be evaluated according to the following criteria:

- Research skills and expertise in the areas of semiconductor physics, quantum physics, nanosciences and related technologies.

- Academic and scientific reputation demonstrated by high quality publications, academic and scientific presentations, collaborations in Austria and abroad, etc
- Venia docendi (Habilitation) or a comparable post-doctorate qualification
- Professional international experience documented by longer stays abroad, cooperation with international universities and research institutions.
- Acquisition, management and organization of research projects.
- Presentation of research concepts for potential activities as a Professor for Semiconductor Physics at the JKU

The successful candidate will be expected to develop a research strategy designed to collaborate on an interdisciplinary platform with working groups at the Faculty of Engineering & Natural Sciences as well as with research groups in Austria and abroad.

4.2. Teaching

The JKU is committed to research-led teaching. The successful candidate is required to hold university-level courses for degree programs offered in the academic area of Physics (Bachelor's and Master's degrees in Technical Physics, the Master's program in Nanoscience and Technology as well as the doctorate degree program) as well as for students enrolled in other physics programs. As the programs are international, the successful candidate is expected to hold classes and lecture in both German and English. Non-German speaking applicants can teach in English for the first two years.

The candidate's application regarding his/her qualifications for the position will be considered under the following criteria:

- The ability to hold mandatory, special and minor subjects in physics and, if available, the teaching evaluation results.
- Experience in supervising student academic works, such as Bachelor's/Master's theses and doctoral dissertations.

4.3. Additional Requirements

- The successful candidate should be willing and open to collaborating with research groups in Austria and abroad and, possibly, with private industry as well. Collaboration efforts should also aim at attracting external funding, as acquiring external funding is a strong financial basis for academic and scientific research at the JKU.
- The successful candidate is also expected to independently carry out administrative tasks in support of department governance and for research infrastructure, particularly in association with the new cleanroom.
- In accordance with the selection criteria, the applicant should possess professional experience in human resource development and support the advancement of women as well as take part in

gender mainstreaming projects as outlined in the JKU's Plan for the Advancement of Women. Please include documentation, if available.

5. Legal Contingencies

Effective as of January 1, 2004, the structure of Austrian universities has been completely re-organized. They are independently financed on the basis of a three-year service level agreement with the Austrian government, have a global budget at their disposal, and are not subject to any directives by the Austrian Federal Ministry of Science and Research.

5.1. Terms of Employment

All terms of employment, including a university professorship, are subject to the Private Sector Employees Act. A work contract between the university and the appointed professor confirms the professor's appointment. The Salaried Employees Act and the collective agreement for university employees provide the legal framework for all related labor, social, and pension conditions. An evaluation of all teaching and research activities will be conducted after a 5-year period to assess the fulfillment of all target agreements.

5.2. Pension Regulations

5.2.1. Pension

A pension account at the Pension Insurance Company for Employees (PVA) provides the basis to calculate the amount of pension. All pension account holders are registered for annual partial credits during insurance periods in the amount of 1.78% of the annual contribution basis and these are capped at the maximum assessment basis. The sum of the partial credits is the total credits that are re-valued annually. The total credit divided by 14 equals the amount of gross monthly pension. For more information about the pension you receive directly from the state, please contact the PVA.

5.2.2. Company Pension Fund for University Professors

In compliance with the 2002 Universities Act, a special pension scheme is provided for university professors and has been agreed upon in a Collective Agreement. The contribution payment made by the university is 10% for the set minimum salary as stated in the collective agreement. Voluntary salary payments agreed upon aside from the collective agreement minimum salary are not a part of the base calculation of the contribution payments.

6. Salary

The amount of the minimum salary for Group A 1 (Professorship) has been determined in the collective agreement for university employees and is a gross annual salary of 74,503.80 Euros per year (last update: 2021). Payment is allocated in 14 equal amounts, whereby two parts are special allocated payments.

The position as Professor for “Semiconductor Physics” provides a provision (on a voluntary basis) to agree on a salary over the minimum salary set by the collective agreement.

After a positive evaluation every six years – maximum of four times – there will be an advance to the next pay grade in accordance to the salary bracket in collective agreement for job category A1.

7. Application

Prospective applicants for the professorship position in Semiconductor Physics are requested to send the following documentation (including a curriculum vitae, application form, and research concept) in electronic form to: application@jku.at. If documents cannot be sent in electronic format, they are to be sent in quintuplet copy and should arrive at the Rector’s office no later than one week after the end of the application deadline.

7.1. General Information

- Application form
- Letter of Intent (1 page)
- Tabular Curriculum Vitae
- Diplomas (Doctorate, Habilitation)

7.2. Research

- Evidence of Venia docendi (Habilitation) or a comparable post-doctorate qualification
- Publication list, including 5 of the publications you consider most important and significant
- List of academic and scientific presentations
- List of international professional experience
- List of acquired research funding (function, project volume, contracting party and/or funding organization, duration)
- Research concept for future activities as a professor at the JKU (with reference to own previous expertise and activities)

7.3. Teaching

- List of previously held courses, course evaluation results and, if available, any participation in university-level didactic continual education courses and/or programs
- List of supervised Bachelor's, Master's/Diploma degree theses and dissertations

7.4. Miscellaneous

- List of previous research collaborations with partners at other universities in Austria and/or abroad
- Participation to programs designed to disseminate science to a non-academic public, at schools, etc.
- Qualifications and ability to lead cooperatively, in human resource development and the advancement of women as well as participation in Gender Mainstreaming projects

8. Information

If you have any questions in regard to the job profile, please contact Univ. Prof. Dr. Andreas Ney (andreas.ney@jku.at, +43 (0)732 2468 9642) and Univ. Prof. Dr. Armando Rastelli (armando.rastelli@jku.at; +43 (0)732 2468 9601).