IFW Dresden e.V.

Leibniz Institute for Solid State and Materials Research Dresden

The Leibniz Institute for Solid State and Materials Research Dresden e. V. (IFW Dresden) conducts modern materials research on a scientific basis for the development of new and sustainable materials and technologies. The institute employs an average of 500 people from over 40 nations and, in addition to its scientific tasks, is dedicated to promoting young scien-tists and engineers. The IFW supports its employees in reconciling work and family life and regularly undergoes the audit berufundfamilie® and beruf&vielfalt. Further information at: http://www.ifw-dresden.de.

Postdoctoral position (m/f/div) 053-26-1000

The Institutes for Solid State Research (IFF) and Materials Chemistry (IMC) offers a Postdoctoral position (m/f/div) on the topic “Two-Dimensional Transition Metal Dichalcogenide (2D TMDC) Materials Integration for De-vice Fabrication”. We are seeking a highly motivated and creative Postdoctoral Researcher (m/w/div) to join our research Team. The successful candidate will spearhead an experimental project to unlock the full potential of two-dimensional transition metal dichalcogenides (2D TMDCs) by tackling one of the field's most persistent bottlenecks: high electrical contact resistance in device fabrication. While 2D semiconductors such as transition-metal dichalcogenides (MoS2, WSe2) offer ex-traordinary electrical and optical properties for next-generation nanoelectronics, Fermi-level pinning and interfacial scattering at metal-semiconductor junctions severely limit device per-formance. The research project will directly address these challenges by integrating innova-tive materials and nanofabrication techniques to achieve high-performance electrical con-tacts. Starting date: November 1, 2026, full-time with 100% funding for 12 months, with the option to extend for another year.

City: Dresden; Starting date (earliest): 01/11/26; Remuneration: TV-L EG 13; Reference number: 053-26-1000

Tasks

Key responsibility:

- Device Fabrication: Design, fabricate, and optimize high-performance field-effect tran-sistors (FETs) and optoelectronic devices based on 2D TMDC materials using state-of-the-art cleanroom facilities.
- Contact Engineering: Investigate and implement advanced contact strategies, including van der Waals metal integration, phase engineering, and interlayer buffer engineering.
- Characterization: Evaluate the TMDC layers using atomic force microscopy (AFM), Raman spectroscopy, X-ray photoelectron spectroscopy (XPS), and X-ray diffraction (XRD). Perform electrical transport measurements and collaborate on material charac-terization.
- Collaboration & Mentoring: Collaborate with theoretical researchers to model charge injection mechanisms and mentor graduate and undergraduate students in the lab.

- Dissemination: Publish high-impact research findings in peer-reviewed scientific journals and present them at national and international conferences.

Requirements

Education: Ph.D. in Physics, Materials Science, Electrical Engineering, Nanotechnology, or a closely related discipline.
Technical Expertise: Hands-on experience with cleanroom nanofabrication (electron-beam lithography, metal deposition, reactive ion etching).
Strong background in 2D material synthesis (CVD/ALD/PVD), dry-transfer techniques, and assembly of van der Waals heterostructures.
Demonstrated track record of electrical characterization and device physics analysis.
Soft Skills: Excellent written and verbal communication skills in English, a strong publication record, and the ability to work effectively in a multidisciplinary, collaborative team environ-ment.

What we offer

- Access to state-of-the-art thin film materials synthesis, nanofabrication, and characteriza-tion facilities,
- Opportunities for international collaboration, conference travel, and professional career development,
- A vibrant, inclusive, and diverse research environment,
- a modern, well-equipped workplace on the campus of the Technische Universität Dresden,
- flexible, family-friendly working hours,
- 30 days’ vacation per year,
- Company pension scheme (VBL),
- Benefits for job ticket/Germany ticket,
- Special annual payment,
- Capital-forming benefits,
- Company health management (back training, health day with various offers),
- Discounted sports offers from the Dresden University Sports Center,
- Job-related further training opportunities and language courses,
- Company restaurant with a variety of breakfast and lunch dishes,
- A future-oriented environment with a workplace with modern research infrastructure,
- working with international and interdisciplinary scientists from different fields,
- working on current research fields.

The employment relationship, including the salary is according to the German tariff TV-L and is task-related up to pay group 13 TV-L.

Application

IFW Dresden strives for a balanced gender ratio in all areas. In science, IFW Dresden would like to increase the proportion of women and therefore explicitly invites suitably qualified fe-male scientists to apply. Applications from severely disabled individuals and those with equal status according to § 2 paragraph 3 SGB IX are explicitly welcomed. A corresponding proof must be included with the application documents.

If you are interested in the position, please send your application including a CV and the list of publications, a motivation letter describing the research career goals, skills and experience, copies of certificates citing the reference number 053-26-1000 as a single pdf file (other formats will not be accepted) no later than 06.09.2026 to

bewerbung@ifw-dresden.de.

Please contact Prof. Bernd Büchner (office-iff@ifw-dresden.de) or Prof. Anjana Devi (office-imc@ifw-dresden.de) for more information.

More information at https://stellenticket.de/206459/TUD/
Offer visible until 06/09/26