Faculty of Mechanical Science and Engineering

For the DFG-funded research project *Straintronics of imperfect quasi-two-dimensional materials: coplanar vs lamellar heterostructures* the Institute of Materials Science, Chair of Materials Science and Nanotechnology (Prof. G. Cuniberti) offers a position as

**Research Associate**

(Subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

The position will start at the earliest possible date and is limited for 3 years. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG). The position offers the chance to obtain further academic qualification (e.g. PhD or habilitation thesis).

The position is embedded in a cooperative research project funded by the German Research Foundation and the Ministry of Education & Science of Ukraine. The project is related to the theoretical modeling of the mechanical properties and electron transport characteristics of selected two-dimensional materials. The DFG project encourages the highest quality research in Europe through competitive funding and by supporting investigator-driven frontier research on the basis of scientific excellence. The project allows researchers to identify new opportunities and tries to fund new and promising topics with a great degree of flexibility. Ultimately, with this project we would like to address the needs of a knowledge-based society and provide Europe with the capabilities in frontier research necessary to meet global challenges.

The scientific activities of the Chair of Materials Science and Nanotechnology are focused on developing non-conventional strategies for novel materials and devices with intrinsic nanoscale complexity. The position will be embedded within the Dresden Center for Computational Materials Science (DCMS) and strongly interacting with its more than 70 members. The Center aims at fostering and clustering the activities related to materials modeling and simulations in the Dresden region. For more information, please refer to [https://nano.tu-dresden.de/](https://nano.tu-dresden.de/) and [http://dcms.tu-dresden.de/](http://dcms.tu-dresden.de/).

**Tasks:** The successful candidate will address the electronic structure and charge transport properties of 2D materials under applied strains. The main methodologies will be state of the art density-functional theory approaches and non-equilibrium Green functions. The theoretical investigations will be done in close collaboration with a team at the G. V. Kurdyumov Institute for Metal Physics, National Academy of Science in the Ukraine.

**Requirements:** Candidates with excellent university degree in *Theoretical Physics* or in *Theoretical Chemistry* are expected to have expertise in density-functional based software as well as in quantum transport calculations. We target at top-notch dedicated and proactive young scientists who plan to make their mark in science.

You will join a team of enthusiastic scientists who pursue creatively their individual research agenda inspired by the chair's innovative approach and support. Your research environment will include access to state of the art research of leading academic institutes, promotion of gender equality and family-friendly work environment.

Applications from women are particularly welcome. The same applies to people with disabilities. Applicants should send their application documents as a single *pdf file*, including a letter of motivation, Curriculum Vitae, publication list, and names of at least two referees preferably via email to [jnano@msx.tu-dresden.de](mailto:jnano@msx.tu-dresden.de) (Please note: We are currently not able to receive electronically signed and encrypted data.) with the **Subject:** "Application Straintronics,"
your surname" or to TU Dresden, Fakultät Maschinenwesen, Institut für Werkstoffwissenschaft, Professur für Materialwissenschaft und Nanotechnik, Herrn Prof. Cuniberti, Helmholtzstr. 10, 01069 Dresden. Deadline for applications is 25.07.2019 (stamped arrival date of the university central mail service applies). Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: https://tu-dresden.de/karriere/datenschutzhinweis