



ČESKÉ VYSOKÉ UČENÍ TECHNICKÉ V PRAZE

Fakulta Elektrotechnická
Katedra Řídicí Techniky

**Postdoctoral position in
“Triboelectric nanogenerators design for green energy production”
Prague, Czech Republic**

Job description

Applications are invited for postdoctoral researchers in the [Advanced Materials Group](#) (AMG) at the [Department of Control Engineering](#), [Faculty of Electrical Engineering](#), [Czech Technical University in Prague](#), to work on the [triboelectric nanogenerators design for green energy production](#), under the supervision of Dr. Antonio Cammarata. AMG is a well-established group and consists of dynamic and motivated researchers leading international collaborations on broad interdisciplinary topics.

The recent and fast growth of electronic miniaturization called for the development of power nanogenerators which can harvest energy from the environment. Among them, triboelectric nanogenerators (TENGs) are the forefront of current research: they are capable to convert friction into electric power. Recent findings suggest that layered transition metal dichalcogenides (TMDs) may be the best candidate materials for TENGs with high efficiency. We plan to study the atomic level phenomena directing the charge current formation in layered TMD-based TENGs under tribological conditions. Our final goal is to provide experimental guidelines on how to design efficient TENG devices by formulating predictive paradigms on the tribocharge generation and diffusion. Such guidelines will be possibly validated by assembling and testing a TMD-based TENG prototype.

Job requirements

Successful candidates must have a PhD in Physics, Chemistry, Materials Science or a closely related discipline obtained in the year 2015 or later. A strong background in solid-state density functional theory is mandatory. Experience in using large-scaling DFT methods represents a great advantage. Researchers are expected to perform calculations on Linux-based HPC architectures, as well as writing and submitting proposals to obtain access to HPC resources. Programming experience in widely-used scientific languages (Fortran, C, C++) together with knowledge of shell scripting in a UNIX environment is also desirable. Good knowledge of English, both written and oral, is compulsory.

Contract details

The positions will be available for up to two years upon successful completion of a probationary first year. The salary will be very competitive at 62200 CZK (~ 2400 EUR) gross per month.

How to apply

The call is open immediately and applications are received until 31.8.2021. Decision on the application will be taken by the end of September 2021. The expected starting date is 1.1.2022. Your application must include: letter of motivation, CV, list of publications, reference contacts and proof of completed PhD. Please direct all correspondence to advamat@fel.cvut.cz and to drimkat@fel.cvut.cz