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At the **Faculty of Nuclear Science and Physical Engineering (FNSPE)**, Department of Materials, group of Prof. Miroslav Karlík, we have a job opportunity for a

Ph.D. junior researcher (2),

in advanced testing of biomedical ferroic materials. The position, within the European project “Ferroic multifunctionalities”, is offered for 45 months, starting on October 1st, 2024.

Background

Ferroics exhibit intriguing functional properties widely utilized in the design of biomedical devices and implants. However, the exact effect of the implant manufacture processes, in vitro, and in vivo conditions on these properties is yet to be fully understood.

Job content

The Ph.D. study will address the effects of the implant manufacture processes and the in vitro test conditions on the performance of ferroic implant materials, namely:

- effects of radiation sterilization (gamma, electrons) on the deterioration of ferroic functional properties of materials used commonly for biomedical implants,
- the role of simulated body media on the stress-corrosion cracking and fatigue performance of ferroic materials in a bioreactor with advanced media control,
- in vitro testing based on the actual data from the healthcare industry, mimicking the living-body environment to address the in vitro-in vivo correlation factors.

The student will receive significant experience and in-depth insight into:

- advanced testing of mechanical, fracture, and electromagnetic properties,
- biomaterials and implant development,
- microstructure-property correlation using advanced characterization techniques.

Profile

- master’s degree in materials science, mechanical engineering, or biomedical engineering,
- motivation to pursue a truly multidisciplinary study including physics, materials science, and biomedicine with active collaboration with healthcare experts,
- basic knowledge of physical metallurgy or biomedical engineering,
- good communication skills, and positive attitude.

The remuneration will be 35 000 CZK/month + a Ph.D. stipend of 12 000 CZK/month (in total approx. 1860 EUR, a good income for a student in the Czech Republic with quite low living costs).

Applicants are requested to send their application materials (a motivation letter, CV, transcripts, and the name of a professor with whom the application can be consulted) to Prof. Miroslav Karlík, E-mail: Miroslav.Karlik@fjfi.cvut.cz. The deadline for applications is **30th June 2024**.