**Post-doc position announcement**

Department of Technical Physics and Nanotechnology

Koszalin University of Technology, Poland

We offer a **post-doc position** at the Department of Technical Physics and Nanotechnology, Faculty of Mechanical Engineering and Energetics of the Koszalin University of Technology (KUT) in Koszalin, Poland, for a **period of one year** starting from **February 1, 2025**.

The necessary **funding** is available under the **ULAM Programme** announced by the Polish National Agency for Academic Exchange (NAWA) – see below.

**The scope of research** carried out during the internship will concern the deposition using PVD techniques (magnetron sputtering, HiPIMS) and research on the structure (XRD, HRTEM, EDX, XPS) and selected properties (electrical conductivity and its anisotropy (C-AFM) of multi-component, self-assembled nanocomposite coatings of Me1Me2C-aC:H carbides where Me is transition metal. These coatings will be deposited and tested for their potential use on electrodes in the process of electro-catalytic hydrogen generation by water splitting in an acidic environment. The deposition process will be monitored by plasma optical emission spectroscopy (OES).

The impact of ion assistance in the HiPIMS discharge on the growth and ordering degree of the deposited coatings will be analysed.

The post-doc fellow will join our research team.

**Short description of your job.**

We are looking for a post-doctoral appointee to support vacuum plasma based surface treatment research.

Your duties will include:

* planning and performing experiments, collecting and analysing data to understand how process parameters affect microstructure and performance of advanced coatings,
* developing in-situ process monitoring methods, including plasma emission spectroscopy, to control and understand them,
* performing materials characterization necessary to support experiments,
* publishing high-impact journal articles,
* interacting and collaborating with other inter-disciplinary research groups of KUT to develop new research opportunities and projects,

*Required Qualifications*

* PhD in materials engineering/solid state physics, or a related field,
* Experience with materials processing (physical vapour deposition of thin films, plasma, plasma spectroscopy and characterization (e.g., Scanning Electron Microscopy, EDX; Thermal/Mechanical properties) to establish process-structure-property relationships,
* History of publication of results in peer-reviewed journals and presentations at scientific and/or technical conferences.

*Other expected Qualifications*

Experience with magnetron sputtering and HiPIMS

Experience in designing and conducting experiments,

Good written and verbal interpersonal skills

Interested **candidates can apply for funding** under the **ULAM Programme** announced by the **Polish National Agency for Academic Exchange (NAWA)**: <https://nawa.gov.pl/en/scientists/the-ulam-programme/call-for-proposals-ulam-2024>

The call for applications under the Programme will be conducted from **February 15 to May 15, 2024, until 15:00**, according to the official time in Poland.

All details on the **ULAM Programme** and the **application procedure** can be found in the attached ANNOUNCEMENT OF THE CALL FOR APPLICATIONS IN THE ULAM NAWA PROGRAMME no. 8/2024 of February 15, 2024.

**The invitation from the host-institution (KUT)**, required as an attachment to the application in the NAWA programme, will be sent by us to selected candidates who decide to apply for the ULAM scholarship and contact us in this matter by sending their CV to: [witold.gulbinski@tu.koszalin.pl](mailto:witold.gulbinski@tu.koszalin.pl)

We offer our assistance in completing the application for the ULAM Program, in particular in relation to the paragraph:

4.9. Description of the research and activities to be carried out during the scholarship including:

* detailed objectives, hypothesis
* description of the problem to be solved,
* current knowledge in the field
* description of tools and/or research/didactic methods,
* expected impact of the planned research on the development of science, civilization and society, etc.
* references