



PhD Position

Laboratory of the Photoelectrochemistry and Solar Energy Conversion at the Centre of New Technologies (University of Warsaw), headed by prof Jan Augustyński, invites applications for PhD positions. Positions are funded by the National Science Centre within Maestro grant Multifunctional thin -film mixed and/or doped metal oxide materials -from photoelectrochemistry to electrocatalysis

Qualifications:

- MSc in chemistry or related fields or MD,
- Good knowledge of English,
- Experience or knowledge in laboratory work: electrochemistry, photoelectrochemistry, UV-Vis spectroscopy, Semiconductors physics, analytical chemistry
- Knowledge of Adobe Photoshop, Adobe Illustrator, PowerPoint,
- Team work skills.

The project:

Initial tests of oxide films deposition by drop casting (DC) and photoelectrochemical investigations by scanning (photo)electrochemical microscopy (SECM). Given the easy implementation of the sol-gel method, the initial attempts will concern WO₃. These tests are expected to show the extent of reproducibility of the approach. Subsequent investigations will be extended to WO₃ layers doped with various cations.

Extended combinatorial investigations of ternary metal oxides such as WO₃-Fe₂O₃ or SrTiO₃ with various dopants using DC and SECM. Selected oxides will be subsequently deposited in conventional sizes and submitted to morphological (SEM, AFM), structural (XRD, Raman spectroscopy, XPS), optical and photoelectrochemical investigations.

Electrochemical impedance studies of the conductivity of nanostructured oxide layers, initially focusing on anatase and rutile TiO₂. The synthesis of composite layers such as TiO₂/metallic conductors or TiO₂/RGO with deposited metal particles. Nanocatalysis, photo- and electrochemical deposition of transition metal nanoparticles at the oxide (TiO₂, WO₃, others) surfaces; influence of the annealing conditions on the spectroscopic (XPS) and electrochemical properties. Electrocatalysis on oxide surfaces including deposited gold nanoparticles.

The application should include:

- Curriculum Vitae (CV)
- Cover letter, describing Candidate motivation
- MSc certificate
- One or more letters of recommendation from a scientist who is familiar with the Candidate (submitted directly to email address below)
- Information on scientific publications, scholarships, prizes and awards or other relevant documents demonstrating the excellence of Candidate
- A list of attended conferences with titles and authors of presentations
- A personal data processing agreement

Contact:

Please apply to: j.augustynski@cent.uw.edu.pl

Deadline for applications: 7.06.2018

Employment conditions:

The fellowship, with monthly salary 3000 PLN (brutto). start in.12.06.2018

Please include in the CV:

"I hereby give consent for my personal data included in my application to be processed for the purposes of the recruitment process under the Personal Data Protection Act as of 29 August 1997, consolidated text: Journal of Laws 2016, item 922 as amended."