



Warsaw 03.08.2020

## **Recruitment No 49/2020**

### **Coordination complexes and functional materials**

**Student – scholarship position. Number of positions available: 2**

#### **Job summary:**

Student – scholarship position available in the Institute of Physical Chemistry PAS within National Science Center (NSC) **MAESTRO 11 nr 2019/34/A/ST5/00416** entitled “Elaboration of unconventional nanostructured perovskites and zinc oxide through compositional and morphological engineering for game-changing improvements in light-harvesting devices” (leader **prof. Janusz Lewiński**)

#### **Job Description:**

Electron transport layers (ETLs) play a vital role in PSCs performance and stability. To date,  $\text{TiO}_2$  is commonly used as ETL in heterojunction PSCs due to its suitable band alignment with perovskite layer and good transparency for visible light. However,  $\text{TiO}_2$ -based layers also showcased some significant drawbacks. ZnO nanostructures hold great promise for optoelectronics, but to do so effectively requires to overcome the limitations of the sol-gel process as well as to exclude or reduce the use of organic capping agents. Moreover, application of novel morphologies of perovskites together with ZnO ETLs can significantly change efficiency of the PSCs or exhibit brand new electrical or optoelectronic properties. In our project, we plan to search for an alternative ETL, based on high-quality ZnO nanomaterials, alongside with development of perovskite morphological engineering. Thus, the main aim of the project will be to elaborate new high-quality pristine ZnO and metal-doped ZnO nanomaterials by the developed in our group one-pot self-supporting organometallic (OSSOM) procedure and their further use as ETLs in photovoltaic applications as well as to determine the relationship between the properties of the resulting ZnO QDs and the electrical parameters of the obtained layers along with the solar cell efficiency.

#### **Responsibilities:**

- Student will be involved in the realization of research tasks:
  - a) preparation of high quality ZnO nanomaterials prospective for light harvesting devices,
  - b) preparation of metal halide perovskite materials of various morphologies,
  - c) fabrication of perovskite- and ZnO-based thin film layers
  - d) characterization of physicochemical properties of the resulting nanostructured materials.

**Research Profile:** First Stage Researcher (R1)

**Main Research Field:** chemistry

**Career perspectives:**

- Participation in high impact and timely research,
- Access to unique technology and modern research laboratories,
- Opportunity to work in a team of dedicated researchers and technologists
- Participation in international conferences and seminars

**For additional job details:** Contact <http://lewin.ch.pw.edu.pl>

**Benefits:**

Scholarship amount is **1 500 PLN\***.

The position within the grant is for a period of **12 months**.

\*under the condition that according to NCN regulations regarding Maestro 11 call a total amount of remuneration and scholarships received from the NCN funded source does not exceed 5 000 PLN per month. Scholarships funded within ETIUDA call as well remuneration of PI within PRELUDIUM call are excluded from the above limit.

**Application Details:**

- **Envisaged Job Starting Date: October 1st, 2020**
- **Application Deadline: September 14, 2020, 23:00**
- **How to Apply:** Send application directly to [rekrutacja@ichf.edu.pl](mailto:rekrutacja@ichf.edu.pl);  
**IMPORTANT: email title "Rekrutacja nr 49/2020"**

**Required Languages:** English, **Language level:** good

**Additional requirements**

1. Status of Student of a full-time first or second-cycle degree programme or uniform Master's studies at a university in Poland,
2. Basic knowledge in inorganic, organic and organometallic chemistry,
3. good command in English, communication skills and predispositions to work in a team.

**Recruitment procedure:**

Complete application should include the following items:

- curriculum vitae
- motivation letter
- transcript of the grades/credits received during the last stage of studies and grade point average

The best applicants will be invited for an interview (on-site or online) between **17.09-18.09 2020**.

The scholarship will be awarded in accordance with the NCN regulations: "*Regulations for awarding NCN scholarships for NCN-funded research projects*" (Annex to Resolution No 25/2019 of the NCN Council, 14.03.2019:

[https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2019/uchwala25\\_2019-zal1\\_ang.pdf](https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2019/uchwala25_2019-zal1_ang.pdf))

and in accordance with the Employment policy of the Institute of Physical Chemistry PAS  
( [http://ichf.edu.pl/employment\\_policy.pdf](http://ichf.edu.pl/employment_policy.pdf))

A scholarship agreement will be signed with successful applicants on condition that the Institute of Physical Chemistry signs the grant agreement with NSC."

- The Commission will take into account the following criteria:
  - a) the candidate's competence to carry out specific tasks in the research project,
  - b) the candidate's research achievements, including publications in prestigious academic press /journals,
  - c) research-related achievements, scholarships, awards and research experience gained in Poland or abroad, research workshops and training courses, participation in research projects.
- The commission evaluates applications on a point scale. The scholarship will be awarded to the person who obtains the highest number of points.
- If the top candidate does not sign the contract, due to the resignation, we reserve the right to choose the next candidate from the ranking list.
- The results of the competition are made public.
- The Competition results shall be made known on **21 September 2020**.
- Scheduled date of starting work within the Project: **October 1st, 2020**

**By submitting the application you consent to the processing of your personal data in the recruitment process.**

The controller of your personal data is the Institute of Physical Chemistry of the Polish Academy of Sciences with its registered office in Warsaw, NIP: 5250008755 (the "Institute"). The Institute will process your data for the purpose of carrying out scientific and research activities, providing services and contact with the Institute, on the basis of a contract (in connection with the performance of the contract or in order to take action on your request before the contract is concluded – Article 6, paragraph 1, letter b) of GDPR), the legitimate interest of the Institute (Article 6, paragraph 1, letter f) of the GDPR) and legal provisions (Article 6, paragraph 1, letter c) of the GDPR) - depending on the circumstances.

You have the right to: request access to your data, receive a copy of it; rectify (correct) it; delete it; limit its processing; transfer it; lodge a complaint to the supervisory body; withdraw your consent for processing at any time (withdrawal of consent does not affect the lawfulness of the processing carried out prior to its withdrawal) or to lodge an objection to data processing. More information is available on the Institute's website.

[http://ichf.edu.pl/gen\\_inf/gen\\_en/GDPR%20-%20General%20Information%20Clause.pdf](http://ichf.edu.pl/gen_inf/gen_en/GDPR%20-%20General%20Information%20Clause.pdf)