Job offer for the SONATA BIS 10 National Science Centre (NSC) project

M:M-PROP: *metallophilic interactions – allies or enemies?*

Institution: **University of Warsaw, Faculty of Chemistry**

Position: **Student – scholarship holder**

Number of positions: **1**

Requirements:

1. Knowledge of basic synthetic chemistry, crystallography and/or spectroscopy (simple (in)organic/organometallic synthesis, single crystal preparation, X-ray diffraction experiments, spectroscopic measurements).
2. Good knowledge of physics and/or physical chemistry.
3. At least basic English language skills.
4. *Programming skills, in languages such as Python and/or C++, will be an asset.*
5. *Commitment to scientific research, ambition, passion, and ingenuity are welcome.*

Duties:

1. Performing simple organic/organometallic syntheses and growing single crystals using various methods.
2. Performing routine X-ray diffraction measurements on a single-crystal diffractometer.
3. Performing spectroscopic measurements.
4. Crystallographic and/or spectroscopic data processing and analysis.

Project description:

The aim of this project is to deeply investigate the effect of formation of the intra- and intermolecular metallophilic interactions, the type and character of the present metallophilic interactions, their impact on light-induced charge-transfer processes and, in consequence, on the spectroscopic properties of the selected series of Rh^{I}, Pt^{II} or Au^{III} coordination compounds. We are interested here in relationships between the molecular structure, electronic configuration, oxidation state and charge distribution, metal···metal interactions (Rh···Rh, Pt···Pt, Au···Au etc.), ligand character, and the macroscopic properties of substances. We would like to explain the observed phenomena and trends, find clear answers when specific interactions enhance the desired properties and when not. Furthermore, we plan to verify whether (and if so – when) it is possible to sensibly control the spectroscopic properties via temperature and pressure. The studies will be conducted in the most comprehensive and systematic way, starting from synthesis & crystallisation, spectroscopy of solution and single crystals, diffraction studies (including multi-temperature and high-pressure experiments), to advanced time-resolved spectroscopic and photocrystallographic methods.

NSC programme type: **SONATA BIS 10 (ST panel)**

Application deadline: **October 4, 2025, 23:59:59 CET**

Application submission method: **e-mail**

Scholarship conditions:

The scholarship amounts to **2,000.00 PLN** per month. The expected start date is **November 1, 2025**. The scholarship duration is **11 months** with the possibility of extension.

Additional information:

Applications should be submitted by **October 4, 2025** (**11:59:59 PM**, *end of day*) exclusively via email to: **katarzyna.jarzembska@uw.edu.pl**. The email should be titled as follows: “SONATA BIS 10 Student - Name Surname”. The application must include (*only* ***PDF*** *files will be accepted*):

1. A concise CV (1-2 A4 pages).
2. A cover letter relating to the research group's subject matter (www.photocrystallography.eu).
3. Contact details for one person who can provide feedback on the candidate (*please do not submit feedback yourself*).
4. Information on the personal data processing
(available for download: http://www.chem.uw.edu.pl/oferty-pracy/).

The best candidates will be invited to an interview in mid-October (interview invitations will be sent via email by *October 10, 2025*). The **selection committee's decision** will be communicated to candidates via email no later than **October 22, 2025**.

For more information, please contact the project manager – Prof. **Katarzyna Jarzembska**, PhD DSc (**katarzyna.jarzembska@uw.edu.pl**).