

## JOB OFFER/STIPEND in INTiBS

Position in the project:	Student
Scientific discipline:	Chemistry, physics, heterogeneous catalysis
Job type:	Stipend
Number of job offers:	2
Remuneration/stipend amount/month (“X0 000 PLN of full remuneration cost, i.e. expected net salary at X 000 PLN”):	1500 PLN / month
Position starts on:	01.10.2019
Maximum period of contract/stipend agreement:	9 months
Institution:	Division of Nanomaterials Chemistry and Catalysis / Institute of Low Temperature and Structure Research, Polish Academy of Sciences in Wrocław
Project leader:	PhD Katarzyna Adamska
Project title:	<p><i>Searching for novel catalysts for soot emission abatement from automotive exhaust gases - bimetallic Ru-Re and Ru-Pt nanoparticles supported on oxide carriers</i></p> <p><b>Project is carried out within the REINTEGRATION programme of the Foundation for Polish Science</b></p>
Project description:	<p>The goal of the project is to produce novel stable bimetallic Ru-Re and Ru-Pt catalysts, high efficient in the total oxidation of particulate matters from automotive exhaust including the oxidation of harmful polycyclic aromatic compounds adsorbed on the soot. Currently used catalysts for this purpose are expensive and require specific conditions to work, the fulfilment of which is not always possible. Ru is much cheaper than Pt or Pd, more resistant to poisoning with sulfur, carbon monoxide and water vapor. Introducing the small amount of a second metal, like Re or Pt, to the catalytic system may be the solution of the problem of a low thermal stability of the ruthenium in the oxygen-rich atmosphere. Additional doping by alkali metals is expected to extra enhance the activity of the prepared catalysts in the soot and naphthalene oxidation. Catalysts will be tested in the combustion of PM from diesel, biodiesel and gasoline in O<sub>2</sub> and NO/O<sub>2</sub> atmosphere</p>
Key responsibilities include:	<ol style="list-style-type: none"> <li>1. Synthesis of colloidal ruthenium catalysts doped with platinum or rhenium, deposited on porous supports</li> <li>2. Physicochemical characterization of the obtained catalytic systems</li> <li>3. Studying the catalytic activity in total combustion of naphthalene and soot oxidation</li> <li>4. Doping the selected systems with alkali metals and studying their impact on the catalytic properties of the obtained catalysts</li> <li>5. Studying the activity and stability of the catalysts in the soot combustion reactions in the atmosphere similar to realistic conditions in car engines</li> </ol>

Profile of candidates/requirements:	<ol style="list-style-type: none"> <li>1. A student of the second degree or of the first degree in the field of chemistry, physics or a related field at the beginning of the project</li> <li>2. Very good knowledge of English</li> <li>3. Experience in working in a chemical laboratory</li> <li>4. Interest in the research topic</li> <li>5. Knowledge of basic issues in the field of heterogeneous catalysis and solid surface research methods will be an advantage</li> </ol>
Required documents:	<ol style="list-style-type: none"> <li>1. Curriculum vitae with a list of the most important achievements of the candidate</li> <li>2. Scholarship application addressed to the Director of the Institute, containing information about current scientific achievements of the candidate</li> </ol>
We offer:	<p>Interesting master's thesis preparation in cooperation with the Jagiellonian University</p> <p>Opportunity to participate in scientific conferences, training courses and internship programs</p> <p>The estimated working time of the scholarship at the Institute will depend on the nature of the tasks being carried out at a given time and it will be agreed between the scholarship student and the project manager</p>
Please submit the following documents to:	<p>PhD Katarzyna Adamska</p> <p>k.adamska@intibs.pl</p>
Application deadline:	<b>31.08.2019</b>
For more details about the position please visit (website/webpage address):	k.adamska@intibs.pl
Euraxess job/stipend offer (in case of PhD and postdoc positions):	-

Please include in your offer:

“I agree that my personal data will be processed by Institute of Low Temperature and Structure Research, Polish Academy of Sciences in Wrocław in order to recruit for the position I am applying for.”