

## JOB OFFER

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| Position in the project:  | Assistant (PhD student)   |
| Scientific discipline:  | Mechanical Engineering/Energy Engineering and/or similar  |
| Job type (employment contract/stipend):   | stipend   |
| Number of job offers:   | 1   |
| Remuneration/stipend amount/month<br>(*X0 000 PLN of full remuneration cost, i.e. expected net salary at X 000 PLN*): | 4 000 PLN   |
| Position starts on:   | 01.11.2018 r.   |
| Maximum period of contract/stipend agreement:   | 01.11.2018 r. – 31.03.2021 r.   |
| Institution:  | Division of Boilers and Steam Generators / Institute of Power Engineering and Turbomachinery / Faculty of Energy and Environmental Engineering / Silesian University of Technology  |
| Project leader:   | dr hab. inż. Sylwester Kalisz   |
| Project title:  | <i>Process optimisation and valorisation of combustion by-products in transition to circular economy (UPS-Plus)</i><br><br><b><i>Project is carried out within the TEAM-TECH Core Facility programme of the Foundation for Polish Science</i></b>   |
| Project description:  | The main object of the project is the realisation of circular economy ideas by optimising the combustion process in order to obtain combustion by-products likely to valorisation and usable in industry. Optimization of low-quality solid fuels combustion (e.g. biomass or refuse-derived fuel) will be based mostly on upgrading fuel properties with additives, especially connected with slagging, fouling and high-temperature corrosion and on a reduction of harmful compounds (e.g. NO <sub>x</sub> , Hg, HCl, HF, NH <sub>3</sub> ). The purpose of the optimisation is to produce specific by-products subsequently subjected to thermal and chemical functionalization resulting in obtaining useful materials, e.g. geomats, insulations or sorption medium. Project objectives will be carried through the usage of innovative, multifunctional Core Combustion Facility (CCF) – semi-technical boiler stand allowing to develop research service concerning modification of combustion process in order to receive most useful by-products. |
| Key responsibilities include:   | <ol style="list-style-type: none"> <li>1. Research within Task 2.1 - Thermal and chemical functionalization of combustion by-products (modification of the physical and chemical structure of combustion by-products in order to obtain materials characterised by stable and reproducible parameters and being useful in the industry).</li> </ol>   |
| Profile of candidates/requirements:   | <ol style="list-style-type: none"> <li>1. Master Degree in Materials Engineering/Nanotechnologies and Material Processing Technologies or/and similar.</li> <li>2. A PhD student status in a field of Materials Engineering/Nanotechnologies and Material Processing Technologies or/and similar.</li> <li>3. Oral and written language skills in English (min. B2 level).</li> <li>4. Professional experience (or internship) in, at least, one research unit – industry or academic.</li> <li>5. Proven experience in performing scanning electron microscope and infrared camera analysis as well as in injection moulding machine usage.</li> </ol>   |

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|   | <ol style="list-style-type: none"> <li>6. Proven experience in production, modification and functionalisation of materials, including nanostructured materials.</li> <li>7. Knowledge of materials cascade usage (with particular emphasis on plastics), recycling of thermoplastic polymer materials and research methods used in the composite and polymer materials analysis.</li> <li>8. General knowledge of construction and architectural issues, enabling recognition of application possibilities of materials produced with the use of functionalised combustion by-products.</li> </ol>   |
| Required documents:   | <ol style="list-style-type: none"> <li>1. Covering letter including the reason of willing to realise the PhD thesis within the UPS-Plus Project (max. 1 page).</li> <li>2. CV including relevant professional experience and knowledge (max. 2 pages).</li> <li>3. Copy of the degree certificate(s) with grades list. Translations into English or Polish if the original documents are not issued in one of these languages.</li> <li>4. Confirmation of good oral and written communication skills in English (min. B2 level).</li> <li>5. Confirmation of professional experience, according to Requirements pt 4 (confirmed by direct superior).</li> <li>6. Confirmation of required skills, according to Requirements pts 5 and 6.</li> </ol> |
| We offer:   | The possibility of realising PhD research in a dynamic research environment in close cooperation with industries and advanced research centres in the world.   |
| Please submit the following documents to:                                   | agnieszka.sadowska@polsl.pl (e-mail subject: CCF – PhD student application 4)  |
| Application deadline:   | 15.10.2018 r.  |
| For more details about the position please visit (website/webpage address): | www.ccf.polsl.pl   |
| Euraxess job/stipend offer (in case of PhD and postdoc positions):          | <a href="https://euraxess.ec.europa.eu/jobs/337820">https://euraxess.ec.europa.eu/jobs/337820</a>  |

Please include in your offer:

“I hereby give consent for my personal data included in my application to be processed for the purposes of the recruitment process within the project conducted by Silesian University of Technology which is the administrator of my personal data.

I am aware of the fact that providing personal data is voluntary and necessary in the recruitment process. I have the right to withdraw or limit the scope of consent to data processing.

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place, date and signature”