

Scholarship for Student/PhD student (Reference: D-PS-2022-2)

The Faculty of Mechanical Engineering at Silesian University of Technology, Gliwice Poland, hereby announces a scholarship competition for a student/PhD student in the research project entitled: "Deciphering laser-microstructure interaction in multicomponent alloys (DECLARMIMA)". The research project (Project Number: 2021/42/E/ST5/00339) is funded by the Narodowe Centrum Nauki (NCN) within the framework of SONATA BIS 11 competition.

Requirements of candidates:

1. BSc degree /MSc degree in mechanical engineering, materials engineering, physics or a related discipline
2. Strong background in at least one of the following scientific areas: (1) Additive manufacturing, (3) Selective Laser Melting, (4) Fused Deposition Modelling, (5) Big data processing (6) Statistics and optimization techniques;
3. Programming skills in one of the following languages (e.g. Python, C++);
4. Good command of spoken and written English language;
5. Ability to work independently as well as work together in team.
6. Proven track record in the sector of experimental works related to additive manufacturing.

Job description:

The aim of the proposed experimental research is to systematically collect featurized data associated with the laser-material interfaces for initially bulk solid and powdered Sn-Ag-Cu-X (X is a random fourth element), Al-Ni-Fe-Cr and Ti-based alloys. The characterization and processing will be done with the help of laser devices, high speed camera, scanning electron microscope, sensors and data loggers. In addition to doing the experiment, the researcher will be communicating with other members of the research team for ensuring the compatibility of features between data from experiment and data from the mesoscale and nanoscale computational models, and thus partially contributing in the creation of combined experimental and simulations data.

The main tasks for the PhD student:

1. Perform laser processing for Sn-Ag-Cu-X, Al-Ni-Fe-Cr and Ti-based alloys in Type A and Type B materials. Note: Type A – solid multicomponent alloy, Type B – powdered multicomponent alloy)
2. Characterize the laser-microstructure dynamics in the experimental process in the above materials with different laser devices.
3. Generate experimental data in different formats (e.g. image and video data from high speed camera, microstructure data from microscopes, sensing data etc. in relation to the laser processing experiments)
4. Featurize the experimental data in machine readable format.
5. Contribute to the publications of peer-reviewed articles in reputed scientific journals;

NCN call for proposals type: SONATA BIS - ST

Deadline for submission of tenders: 10.09.2022

Form of tender submission: email

Terms of Employment:

Place of work: Faculty of Mechanical Engineering, Silesian University of Technology, Gliwice, Poland.

Announcement of competition results: 16.09.2022

Number of position(s): 1

Duration of scholarship: 24 months

Working hours: Full time (40 h/week).

Date of commencement of employment: As soon as possible.

Amount of Scholarship: PLN 5000 / month . We kindly request the applicant to read the NCN's announcement on exemption from income tax from the NCN research scholarship: <https://www.ncn.gov.pl/en/aktualnosci/2021-12-30-stypendia-ncn-podatki>

Additional Information:

Application procedure:

The application should contain the following documents/information:

1. CV including the following information (list of scientific achievements, a list of publications, conference presentations, awards and distinctions for scientific activity , software and data processing skills) ;
2. Copy of the Msc/BSc diploma or equivalent document or a document confirming the last year of master's studies;
3. Copy of the Msc/ BSc thesis abstract;
4. Application letter or letter of motivation (maximum 1 page);
5. Acronym for reference of this position (Reference: D-PS-2022-2).

In addition to the above documents, please prepare a document consisting of the following statement: "I consent to the processing of my personal data for the purpose of recruitment in accordance with Art. 6 sec. 1 letter a of the Regulation of the European Parliament and of the Council (EU) 2016/679 of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46 /EC (general regulation on data protection). "

Application document (all of the documents combined together in a single pdf file) in English should be sent electronically to the principle investigator of the project Dr. Anil Kunwar (e-mail address: anil.kunwar@polsl.pl). It is recommended to include the job reference (Reference: D-PS-2022-2) in the subject of the email message.