The University of Luxembourg (UL) and Luxembourg Institute of Socio-Economic Research (LISER) invite applications for **a DRIVEN PhD Fellow (Doctoral Candidate) position (m/f)** as part of the DRIVEN Doctoral Training Unit (https://driven.uni.lu), consisting of 19 doctoral candidates. DRIVEN is funded by the FNR PRIDE funding instrument https://www.fnr.lu/funding-instruments/pride/.

**PRIDE PhD Fellow** Ref: DRIVEN.

- 48 month PhD research project.
- Employee and student status.
- Enrollment in the DRIVEN Doctoral Training School.

## Framework:

You will be working as part of DRIVEN Doctoral Training Unit (DTU) funded by the FNR PRIDE scheme. The Computational and Data DRIVEN Science DTU will train a cohort of 19 Doctoral Candidates who will develop data-driven modelling approaches common to a number of applications strategic to the Luxembourgish Research Area and Luxembourg's Smart Specialisation Strategies. DRIVEN will build a bridge between state-of-the-art data driven modelling approaches and particular application domains, including Computational Physics and Engineering Sciences, Computational Biology and Life Sciences, and Computational Behavioural and Social Sciences.

## Research Direction:

Additive manufacturing e.g. selective laser melting (SLM), also known as 3D printing, has only recently emerged as one of the most promising technology for manufacturing structures of virtually any shape. After preparation of the powder bed a laser melts the powder, that solidifies to build the final part. In order to gain a deeper insight into these processes and underlying physics, versatile simulation technologies such as XDEM (www.xdem.de), CFD, phasefield and Monte-Carlo methods are applied to understand the influence of many governing parameters e.g. temperature or printing velocity on the final quality of the final part.

## Supervision:

Your lead supervisor will be Prof Bernhard Peters. Further supervision will be provided by Prof. Andreas Zilian.

## Your profile:

- Master's degree in Engineering, Physics, Mathematics or equivalent required to pursue a PhD-study
- Basic knowledge of discrete element method and willingness to familiarise with XDEM (www.xdem.de)
- Good knowledge of FEM and programming
- Basic knowledge in machine learning e.g. TensorFlow
- Familiar with Ubuntu and programming in C++
- Good English language skills.
- Willingness to familiarise with XDEM (www.xdem.de) and to work in an inter-cultural and international environment.
- Ability to work independently and as part of a team.

- Curiosity and self-motivation.

## We offer:

- A dynamic and well-equipped research environment within <*PIs department*>.
- Intensive training in scientific and transferable skills, participation in schools. conferences and workshops.
- Fixed term employee contracts totalling 48 months, subject to review, at UL or LISER.
- Enrollment as a PhD student in the DRIVEN Training Unit, within an appropriate the UL doctoral school, e.g. Doctoral School of Science and Engineering.
- Personal work space at UL or LISER.

## Job description:

Your primary tasks as a DRIVEN fellow are to:

- Manage and drive forward your research project.
- Attend doctoral school courses, trainings and social events.
- Write scientific articles and your PhD thesis.
- Disseminate your research at conferences and seminars.

## Gender policy:

UL strives to increase the proportion of female PhD students in its faculties. Therefore, we explicitly encourage women to apply.

## Application submission:

Before proceeding with the submission of your application, please prepare the following documents.

- Curriculum vitae (maximum two pages).
- Motivation letter (maximum two pages) detailing how you meet the selection criteria for the given research direction.
- Publication list (if any) and PDFs of those publications.
- Master's thesis (final or draft, if draft, then state the expected submission date).
- Full contact details of two persons willing to act as referees.
- Copies of diplomas, transcripts with grades, with English, French or German translation.

All documents should be uploaded in PDF format via the online submission system (no applications via email, please). Please note that incomplete applications will not be considered.

## Selection process:

Candidates will be short-listed based on the criteria detailed above. Short-listed candidates will be invited for an interview and/or interviewed by phone.