
RESEARCH ENGINEER POSITION

In the framework of the International Research Centre “Innovative Transportation and Production Systems” of the I-SITE CAP 20-25 project and the LabEx IMobS³, a one-year Research Engineer position is proposed for highly motivated candidates interested in integration of robotic system for innovative manufacturing processes. The candidate will be joining the *Institut Pascal* within the MRSI Theme of the M3G research Axis.

SUBJECT

Study and implementation of a multi-material – multi-process robotic cell

SCIENTIFIC PROJECT AND OBJECTIVES

The installation of a multi-material – multi-process manufacturing cell on the Technology Platform of the INP (SIGMA-Clermont) is under study. The equipment envisioned is financed within the framework of the TIRREX project in which the *Institut Pascal* (IP) is a partner, in particular in the Design and Prototyping Axis. This equipment will consist of several arms, carrier robots, equipped with different manufacturing devices (machining, depositing (FDM), draping, ...), as well as a multi-axis positioning systems. The piloting of the robots, the planning and trajectory generation are based on the integration of hardware and software solutions (CAM, control) to be defined in an appropriate way.

Defining and implementing of this equipment requires a thorough engineering work as well as an efficient coordination between several internal and external stakeholders. Our objective is to install and deploy the equipment within a reasonable timeframe with optimal grasp of the technological solutions that will be used. It is therefore relevant to reinforce the IP's permanent staff team with a Research Engineer in this phase of the project. The candidate should have strong skills in industrial robotics and robot integration. He/she should also have a good knowledge of manufacturing processes, including machining and additive manufacturing. The candidate's project management, teamwork and communication skills will be key to the success of this work.

RELATED TASKS

The Head of the Technology Platform, Nicolas Blanchard, and the researcher team involved in the TIRREX project will supervise the person to be recruited. The following missions will be entrusted to him/her:

- Participate to the definition of the manufacturing cell by ensuring the link between the IP team and the suppliers. This includes the drafting of the specifications, the elaboration of calls for tenders and the generation of associated technical documentations.
- Ensure the technical follow-up, the reception and installation of the equipment. He/she will participate to the testing and the implementation of the equipment.
- Participate to the evaluation and choice of the software solutions and numerical integration environment: from CAM to robot trajectory.
- Design and develop the missing elements, which are not provided by the suppliers but necessary for the integration (parts and mechanical assemblies, interfaces, PLCs and sensors, complementary software bricks, etc.)

- Document all the operating procedures for the implementation of the equipment and the complete integrated cell as well as the tests conducted.
- Contribute to the visibility reinforcement of the research actions of the IP related to the PROMIX action and the TIRREX project through, for example, the participation in national networks of trades and research in the field of additive manufacturing.

RECRUITMENT

- Host laboratory: Institut Pascal (UMR 6602), University Clermont Auvergne, CNRS, Member of Clermont Auvergne INP
- Supervision of the work :
 - Nicolas Blanchard ; nicolas.blanchard@sigma-clermont.fr
 - Chedli Bouzgarrou ; chedli.bouzgarrou@sigma-clermont.fr
 - Hélène Chanal ; helene.chanal@sigma-clermont.fr
- Starting date: September / October 2022
- Salary: The net salary is approximatively 2100 euros. Funds from the CIR ITPS of the I-Site CAP 20-25 project
- Duration: 12 months
- Candidate: Applicants should have a PhD in industrial robotics (preferably) or should be an engineer with significant experience in robot integration and manufacturing processes.
- To apply :
 - Send CV and cover letter to: nicolas.blanchard@sigma-clermont.fr, chedli.bouzgarrou@sigma-clermont.fr and helene.chanal@sigma-clermont.fr
 - The position will remain open until filled