

FORM FOR EMPLOYERS

INSTITUTION: Lodz University of Technology (TUL), Institute of Applied Computer Science

CITY: Lodz (Poland)

POSITION: Early-stage researcher

DISCIPLINE: electrical engineering, computer engineering, control engineering, process engineering

POSTED: 18.09.2017

EXPIRES: 25.10.2017

WEBSITE: www.tomocon.eu

KEY WORDS: process tomography, sensors and actuators, inline fluid separation, data processing and analysis.

DESCRIPTION (field, expectations, comments):

The European Marie-Sklodowska-Curie Innovative Training Network TOMOCON joins 12 international academic institutions and 15 industry partners. We work together in the emerging field of industrial process control using smart tomographic sensors. The network will lay the scientific and technological fundamentals of integrating imaging sensors into industrial processes and will demonstrate its functional feasibility on lab and pilot-scale applications. Our doctoral researchers will be trained and work in the fields of process tomography hardware, software and algorithms, control systems theory and design, industrial process design, multi-physics modelling and simulation, human-computer interaction, and massive parallel data processing. More information about the network and all open positions can be found on our web page www.tomocon.eu.

Within TOMOCON we seek excellent open-minded and team-spirited PhD candidates who will get unique international, interdisciplinary and inter-sectoral training in scientific and transferable skills by distinguished leaders from academia and industry. Within the TOMOCON network we offer the following PhD position at TUL:

QUALIFICATION OF ERT/ECT FOR REAL-TIME CONTROL OF INLINE FLUID SEPARATORS

Reference number: TOMOCON-ESR10

Inline fluid separation is an efficient way to split fluid mixtures via density-based centrifugal separation in a pipe. The PhD candidate shall develop an electrical tomography imaging sensor technology towards integration into control of inline fluid separation systems. This comprises configuration and development of robust sensor front-ends with 2D/3D electrode layouts as well as fast data processing software based on observe and react architecture to control flow behaviour. Special focus will be given to the accurate online calculation of phase fraction distribution and dispersion states for liquid/liquid and liquid/gas two-phase flow, as well as extraction of meaningful parameters for actuator control (e.g. hollow vortex position, shape and size). The work includes fundamental scientific analyses, engineering design and technical demonstration together with groups in Delft, Dresden and Toulouse and different industry partners. The PhD candidate will realise secondments of few months for technical and scientific training at Roscole Ltd (Finland), Teletronic (Germany), Federal University of Technology - Parana (Brazil) and Technical University of Delft (The Netherlands). The PhD degree will be awarded by the Lodz University of Technology in Poland.

Requirements

- Distinct university graduation in engineering or natural science, preferably in electrical or process engineering
- Programming skills: C/C++, Java, Python or Matlab
- Experience in flow measurement and sensor technology
- Strong interest in interdisciplinary scientific work
- Good proficiency in English language

Starting Date 1st March 2018

Contract Full-time contract for 36 months

Salary The Marie Skłodowska-Curie programme offers highly competitive and attractive salaries. Gross and net amounts are subject to country-specific deductions as well as individual factors and will be confirmed upon appointment.

Information Dr. habil. Laurent Babout - Primary Supervisor
Email: laurent.babout@p.lodz.pl

Application Please submit via email your application (cover letter, CV, certificates) to the Primary Supervisor with indication of the position reference number TOMOCON-ESR10

Eligibility: *The candidate recruited in the TOMOCON project must be Early-Stage Researcher (ESR) and undertake transnational mobility (secondments, trainings, conferences). The candidate must be in the first four years from the date when the researcher obtained the degree entitling him or her to embark on a doctorate (e.g. master degree). It will be counted backward from the date of recruitment (in this case 01.03.2018). No doctoral degree has been awarded during these four years. The candidate can be of any nationality. The candidate must not have resided or carried out her/his main activity (work, studies, etc.) in Poland for more than 12 months in the 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention¹ are not taken into account.*