Neuchatel, August 5, 2017

Post-doc position in MEMS Thermal Gas Sensor

The EnviroMEMS group within the Microsystems for Space Technologies Laboratory at the EPFL (Swiss Federal Institute of Technology) has an opening for a Post-doc position in the design and simulation of silicon microfabricated thermal gas sensors. This position is in the frame work of a CTI industrial funding in collaboration with the company Bright Sensors. The main goal of the project is to optimize the design of a novel sensor that measures the dynamic viscosity of gases.

Objectives
Bright Sensors is commercialising a new type of sensor to determine the quality of natural gas. This will allow the combustion in natural gas appliances and motors to be safer and cleaner, while increasing efficiency and lowering maintenance costs. Ultimately, the goal of Bright Sensors is to make the majority of natural gas burners and vehicles adaptable to a wide range of natural gas qualities.

The EnviroMEMS group at EPFL, with a strong track record in microfabricated gas sensors, is proposing a Post-Doc position on the design and optimisation of a novel thermal gas viscometer. As part of project you will take on the responsibility of designing and evaluating the sensor using numerical simulation techniques. You will model the gas sensor operation and response and make design recommendations ensuring high sensitivity and minimum power consumption. Attention will also be paid to the accurate modelling of the complete sensor taking into account the thermo-fluidic properties of a wide variety of sample gases. To support you in your work, you will have access to expertise of EnviroMEMS group for the design of the sensing device. Modelling and simulation of the sensor will be performed using software and computation facilities available at EPFL. Models will be validated and proposed design changes will be implemented in collaboration with Bright Sensors taking advantage of their know-how and facilities.

Requirements
- Ph.D. in Physics, Computer Science, Mechanical Engineering or related field, with experience on heat transfer and fluid mechanics, and/or thermal gas sensors modelling.
- Highly developed programming skills with FEM experience, notably on COMSOL
- Strong interest in bringing R&D development to a manufactured product
- Ability to collaborate closely with colleagues and project’s partners in a multicultural setting.
- Fluent in English. French is a plus.

Context
The position is funded by Swiss CTI – Commission for Technology and innovation in partnership with the company Bright Sensors located in Neuchâtel. More information on the industry can be found at http://www.bright-sensors.com/.

This research activity will be performed at EPFL-LMTS EnviroMEMS (under the supervision of Dr. Danick Briand) which is internationally recognized for its expertise in microfabricated gas sensors.
The laboratory is located in the Neuchatel campus (Microcity) of the EPFL with access to state of the art facilities for the design, fabrication and characterization of MEMS devices.

The candidate must have strong programming skills linked to modelling and simulation of physical systems and enjoy working in a multidisciplinary team. The candidate must be highly motivated, independent, yet able to work closely and harmoniously with colleagues in the lab and partners.

**Contract details**
- Up to 1 year depending on starting date (possibility of extension depending on funding available)
- Start date: As soon as possible, latest this Fall
- Excellent facilities (state of the art software and computation facilities)
- Competitive salary
- Work location is Neuchâtel, Switzerland.
- The main language used for technical discussions in the lab is English.

To apply for the position, please email a CV, cover letter, and list of three references to danick.briand@epfl.ch

Further information about our lab and the group can be found at [http://lmts.epfl.ch/EnviroMEMS](http://lmts.epfl.ch/EnviroMEMS).