IoT and Smart Sensors Engineer

Description of the position

The Ecole Polytechnique, under the supervision of the Ministry of Armies, is a public institution with a scientific, cultural and professional position recognized as a pole of excellence in the global level. It accommodates 2400 students including 1900 students from Polytechnique, 600 doctoral candidates and 2000 teaching, research, technical and administrative staff.

The proposed vacancy will take place within the French Micad’O technological maturation Project coordinated by the Ecole Polytechnique and funded by the SATT Paris-Saclay. This project is open for 18 months period and is dedicated to the implementation and the development of a connected nanosensor based on carbon nanotube for water quality monitoring. It aims finally at creating a start-up. The applicant will have for main activities:

- Analyse customer’s needs;
- Conceive electronic specifications and product software on the basis of future customer’s;
- Conceive and realize the end-to-end system (from the matrix of nanosensors until the data exploitation in local and/or in the cloud);
- Implement algorithms of data exploitation;
- Validate with lab tests and then on-site the developed sensor;
- Form and lead a team that will get together technical and entrepreneurial skills necessary to the start-up foundation. For this purpose, he/she will have the opportunity to take part to the entrepreneurial training program of HEC Paris called “HEC Challenge+”.

The position is based on the Ecole Polytechnique within the Laboratoire de Physique des Interfaces et des Couches Minces (LPICM - https://portail.polytechnique.edu/lpicm/en).

Profile

The candidate will have strong skills in instrumentation (connected objects and digital technologies) as well as data treatment. With a higher education in these fields, you will have preferentially a first experience and/or you will realize a post-doc in industry. You will have
strong analysis capabilities and like to be on site. You are a strict person with good methodology qualities oriented towards results.

The candidate will have a particular motivation for the start-up foundation. Due to the multidisciplinary nature of the project and the aimed goals, the candidate will have leadership ability with an experience in R&D project management. Autonomy, versatility, dynamism and taste of adventure will allow you to find your place in our team.

**Context**

Within the Ecole Polytechnique, the Laboratoire de Physique des Interfaces et des Couches Minces (LPICM - [https://portail.polytechnique.edu/lpicm/en](https://portail.polytechnique.edu/lpicm/en)) develops a new generation of low cost sensors for the simultaneous analysis of chemical pollutants in water. This work is done within the research team between IFSTTAR, Ecole Polytechnique and CNRS and takes place in the framework of the research plateform PLATINE ([https://portail.polytechnique.edu/lms/fr/projet-platine](https://portail.polytechnique.edu/lms/fr/projet-platine)).

The technological maturation project is part of the continuity of the PROTEUS European project which not only made it possible to prove the concept of such sensors but also to conclude in the feasibility of their deployment in real drinking water networks. A more detailed description of the projects and the technology developed can be found at: [http://www.proteus-sensor.eu/?m=201812](http://www.proteus-sensor.eu/?m=201812).

**Application**

CV and motivation letter should be sent to: Gaël Zucchi (gael.zucchi@polytechnique.edu), Bérengère Lebental (berengere.lebental@ifsttar.fr) and Eva Grinenval (eva.grinenval@polytechnique.edu).