

## RESEARCHER

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Université de technologie de Compiègne is seeking to fill a postdoctoral research position

### Place of work

Compiègne

### Type of contract and anticipated starting date

Fixed term of 12 month contract

### Experience

This position would represent an initial professional experience for someone who has recently obtained their PhD

### Gross monthly salary

€ 2 544

### Workload

1 607 hours per annum

### Project title

Silk based Nanocomposites SERS Sensors for Detection of Organic Pollutants: SiNapSES

### Mission

This project aims at developing scaffolds made of silk proteins to detect pollutants in water or air. Various systems (hydrogels, foams or electrospun filters) made from silk fibroin will be prepared incorporating metallic nanoparticles. These composites will allow to strongly concentrate organic pollutants and thanks to the presence of plasmonic nanoparticles will be used to detect them in situ by Surface Exalted Raman Spectroscopy (SERS) techniques.

### Principal activities

The realization of the project involves 1) the elaboration of nanoparticles, 2) the extraction of silk fibroin and its shaping of scaffolds incorporating the nanoparticles 3) the evaluation of the detection capacities by SERS on pollutant models.

### Skills

The successful candidate will have proven skills in materials chemistry and physical chemistry. Knowledge of synthesis and functionalization of nanomaterials and of vibrational spectroscopy techniques (Infrared and Raman) would be welcome. A capacity for synthesis and project management will be necessary as well as a willingness to work in a team in a multidisciplinary environment.

### Qualification

PhD in chemistry, material chemistry, physical chemistry or close fields

### Work environment and context

The candidate will join the TIMR laboratory (UTC-ESCOM) where he will carry out the preparation of silk scaffolds incorporating nanoparticles, while working in close collaboration with the MONARIS laboratory (Sorbonne University) where he will carry out the evaluation of the systems by vibrational spectroscopy (Infrared and Raman) and the LRS laboratory (Sorbonne University) for the characterization of scaffolds.

The candidate will thus benefit from an environment rich in scientific skills and a wide range of equipment allowing the realization of his project.

### Academic contacts

Pr. E. Guénin

[erwann.guenin@utc.fr](mailto:erwann.guenin@utc.fr)

+33 (0) 344 234 584

Dr. A. Percot

[aline.percot@sorbonne-universite.fr](mailto:aline.percot@sorbonne-universite.fr)

+33 (0)1 44 27 36 20

### Application

CV and covering letter to be uploaded to:

<https://candidature.utc.fr/chercheur>

For any additional information please contact:

Lydie Rodriguez: Tel. +33 (0)3 44 23 52 81 – Margot Pernet: Tel. +33 (0)3 44 23 79 69

UTC - Human Resources Division - Recruitment Office - UTC/DRH/PR/2021

<https://www.utc.fr> – under the heading *recrutement*