PhD offer

SAVE project – "SepAration and Valorization of materials from printed on paper Electronic devices end-of-life"

Description

SAVE project objective is to study the end-of-life of electronic devices printed on cellulose based substrate. Within the project the functionalized inks will be separated from cellulose fibers and all recovered fractions will be valorized. The fibers will be processed to produce recycled paper and functionalized materials (metallic nanoparticles, nano-sized semi-conductors …) will be transformed into new materials in a closed-loop recycling manner.

The Ph.D. thesis will be divided into 4 Work Packages. The Ph.D. student will be in charge of:

1) **Selection of the raw materials** (functionalized inks and paper grades to be printed) and production of model printed functionalized devices (WP1),
2) **Separation of inks from cellulosic fibers** following the traditional paper recycling unit operations (WP2),
3) **Analyses of all produced liquid and solid fractions** in order to establish a complete mass balance of the separation process (WP3),
4) **Separation, recovery and valorization of all materials** (WP4).

All along his/her thesis the applicant should perform regular state-of-the-art survey related to the thesis topic. Indeed, this scientific and technological watch is of primary importance within this rapidly developing field where available data are scarce.

Localization and practical details

During the thesis the Ph.D student will work under the supervision of Nadège REVERDY-BRUAS and Lenka SVECOVA and will be helped by a multi-disciplinary team involved in this project. His/her working time will be shared between two laboratories located on Grenoble university campus, Laboratory of Pulp and Paper Science and Graphic Arts (LGP2, http://pagora.grenoble-inp.fr/fr/recherche) and Electrochemistry and Physico-chemistry of Materials and Interfaces Laboratory (LEPMI, http://lepmi.grenoble-inp.fr/). The candidate will also have access to all equipment situated in the two laboratories and to diverse existing platforms located in Grenoble in order to succeed his/her thesis.

Applicant qualifications

The applicant should have a master degree (or equivalent) and a solid knowledge of solution chemistry, analytical chemistry and unit operations. The knowledge of paper and the related unit operations together with printing technologies will be appreciated. The candidate should have a strong aptitude for experimental work and be able to work independently. Writing skills will also be required. An excellent level of English is mandatory. The candidate may not be French-speaking. He/she will be enrolled in the I-MEP2 doctoral school.

Salary

The project is financed by Grenoble INP, the net salary will be approximately 1400 €/month.
Giving lecture will be possible with the permission of the supervisors.

How to apply?

Send your CV and motivation letter to Nadège REVERDY-BRUAS and Lenka SVECOVA: nadege.reverdy@pagora.grenoble-inp.fr, lenka.svecova@lepmi.grenoble-inp.fr – Dead line to apply: **08/06/2020**