Master Thesis

Materials Science & Technology

"Materials science and technology are our passion. With our cutting-edge research, Empa's around 1,100 employees make essential contributions to the well-being of society for a future worth living. Empa is a research institution of the ETH Domain"

Job description - Solid supported synthesis of flame-retardant recyclable polymer-based materials

In this Master Thesis, you will work on the development of novel recyclable flame-retardant polymer-based materials. The development of novel plastics especially from bio-based monomers is increasingly important for society. Also, most plastics (e.g., polyesters) are not only easy flammable but also sensitive to humidity and heat, and their processing is thus challenging. Through innovative methods, we will prepare suitable heterogeneous catalytic systems and use them for the manufacturing of composites showing improved performances in terms of recyclability, flame retardancy, thermal behavior and mechanical properties. For this purpose, you will work with other team members to discover synthetic ways to obtain novel thermoset and later on study the fire safe and recycling properties. You will learn to organize and plan your work, coordinate with the team, characterize the thermoset material and report the result.
The members of chemistry additives in Advanced Fiber Lab *(https://www.empa.ch/web/s402)* will supervise the master student.

Your profile

You are the right person for this position if you are enthusiastic about plastic recycling and sustainability and want to spend some months working in an international research environment at Empa, St. Gallen, Switzerland. Preferably, you:

- are currently a Master Student with a specialization in Organic / Polymer Chemistry / Material Sciences / Composite material / Chemical Engineering or in a related field;
- are willing to learn new chemistry/material science lab skills in an interdisciplinary field
- have good organizational, prioritization, and communication skills and are able to work effectively and independently within a collaborative environment.

- *Full accommodation and a monthly scholarship will be provided to the selected candidate.*

+41 58 765 7611
sabyasachi.gaan@empa.ch
+39 081 76 82 556
anaronne@unina.it

wenyu.wu@empa.ch
aurelio.bifulco@unina.it
claudio.imparato@unina.it
***For any question:** caro.polisi@gmail.com*
valeria.palumbo026@gmail.com