5–6 Month Master's Internship (2025) with Potential Extension to PhD Starting in October 2025

Development of new grafting agents based on diacids for the functionalization of zirconia surfaces with polymers

CONTEXT:
In the frame of the CaeSAR project coordinated by the University of Caen Normandy (France), we plan to hire several PhD students in various areas of materials science. Prior to starting this PhD program, we are seeking highly motivated students to undertake a 5 or 6 months internship as part of their master's studies.

SCIENTIFIC PROJECT: Antibacterial coatings are becoming increasingly attractive for application in the field of biomaterials. In this framework, we developed polymer coating zirconia with antibacterial activity using the "grafting from" polymerization methodology. Styrenic monomers with (zwitter)ionic groups were chosen. In this project, new grafting agents based on diacids will be developed followed by their use as radical initiator polymerizations (ATRP or RAFT). The surface modification of zirconia surfaces (pellets or nanoparticles) will be evaluated by different techniques including IR, RMN, microscopies, ellipsometry and SIMS.

For recent publications in our group, see: doi.org/10.1016/j.porgcoat.2022.107202 doi.org/10.1016/j.eurpolymj.2023.112207 and doi.org/10.3390/ma17081775

CANDIDATE PROFILE: Candidates in Master 2 (or last year engineering school) in chemistry are eligible. Skills and interests in **organic chemistry**, **polymers** and **material characterizations** are demanded. Dynamism, scientific rigor, independence and good communicating skills are required.

HOW TO APPLY:
Prospective candidates should send their CV, a cover letter and Master 1 marks by email **before the** December 15, 2024 to **benedicte.lepoittevin@ensicaen.fr**

Internship gratification: 1000 euros/month. The project could be pursued by a PhD funded for 3 years.

Location: Laboratoire Chimie Moléculaire et Thio-organique (LCMT), UNICAEN/CNRS/ENSICAEN, Campus 2, 6 Bd Maréchal Juin, 14000 Caen, France. This project will be developed in collaboration with CRISMAT and CIMAP laboratories located in Caen (Campus 2).

Dates/duration: Starting in January-February-March 2025, 5 to 6 months

Framework: Caesar Excellence project Supported by University of Caen Normandy (https://anr.fr/ProjetIA-23-EXES-0001)

Supervisors: Dr. Bénédicte Lepoittevin and Dr. Jérôme Baudoux