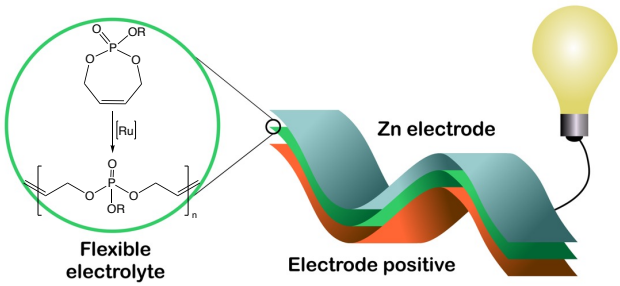
5–6 Month Master's Internship (2025)
with Potential Extension to PhD Starting in October 2025

ELABORATION OF POLYPHOSPHONATE AS SOLID POLYMER ELECTROLYTES FOR ZINC-ION BATTERIES

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:



Zinc-ion batteries have attracted a significant attention as competitive candidates for flexible devices owing to the high volumetric capacity of the zinc (Zn) metal and its facile fabrication process. In this context, the excellent thermal stability, fire resistance, and attractive mechanical properties of polyphosphonates, make them ideal candidates for their use as polymer electrolytes. However, their use in Zn batteries has been poorly explored. This master internship project, and in the longer term, that of the future thesis, aims to synthesize polyphosphonates by ring opening metathesis polymerization (ROMP) in high yield and controlled way, in order to develop flexible solid-state electrochemical cells with high ionic conductivity at ambient temperature, good mechanical properties and enhanced safety for Zn batteries.
This project will require the complementary expertise of two teams, one specializing in polymer synthesis and characterization (LCMT) and the other in the preparation and study of batteries (CRISMAT).

CANDIDATE PROFILE:

The candidate, specialized in organic chemistry, in 2nd year of Master's degree or in final year of engineering school is required. Knowledge or interest in polymer chemistry is welcome. The candidate has to be motivated by the challenge of the project.

HOW TO APPLY :

Prospective candidates should send their CV, the M1 transcript and a cover letter by email **before the** November 22, 2025 isabelle.dez@unicaen

Internship gratification: 1000 euros/month. The project could be pursued by a PhD funded for 3 years.
Location: *Laboratoire LCMT , UNICAEN/CNRS/ENSICAEN, Campus 2, 6 Bd Maréchal Juin, 14000 Caen, France*
Dates/duration: Starting in February-March 2025 (until July 2025)
Framework: Caesar Excellence project Supported by University of Caen Normandy (https://anr.fr/ProjetIA-23-EXES-0001)
Supervisors *:* Isabelle Dez (LCMT), Valérie Pralong (CRISMAT) and Vadim Kovrugin (CRISMAT)