



Laboratoire CIMAP

Centre de recherche sur les Ions, les Matériaux et la Photonique

UMR 6252 – CEA – CNRS – ENSICAEN - UNICAEN

6 Boulevard Maréchal Juin

14050 Caen Cedex 4

✓ Proposition de sujet de stage M2

Titre : <i>Project SMILEI (Stored Molecular Ions in Linear Electrostatic Ion trap)</i>	
Contacts :	Patrick Rousseau – patrick.rousseau@unicaen.fr 02.31.45.48.06 Sylvain Maclot – sylvain.maclot@unicaen.fr 06.84.86.44.94
Lieu	Caen

Stage :

Manipulation of cold molecular ions open the possibility of spectroscopy of well prepared species with application foreseen in molecular physics and in nuclear physics. We propose to use a newly designed linear electrostatic ion beam trap to achieve such experiments. The “open” design of the trap allows for the implementation of laser beam and spectrometer in the field free region between the two ion mirrors.

The internship will focus on commissioning of the apparatus for ion trapping, installation of the laser system and first spectroscopic experiments. The device is located in ARIBE the low-energy ion beam facility of GANIL (Caen). During the internship, the participation to ion-collision beamtimes will be also possible allowing to get familiar with the research activities developed at CIMAP-GANIL.

This project (SMILEI) is part the CaeSAR (Caen Strategy for Advanced Research) program of UNICAEN, including a fully funded PhD fellowship starting in September 2026. The project is reinforced by a strong collaborative network (Bar-Ilan University, Israel - University Autonomous of Madrid, Spain) funded by the international laboratory partnership (UNICAEN).