

PDM position in LAS

PDM positions are available in the group of Prof. Kumar Varoon Agrawal in the Institute of Chemical Sciences & Engineering (ISIC) at École Polytechnique Fédérale de Lausanne (EPFL). The details of the group are at <https://www.epfl.ch/labs/las/>

Background:

The laboratory of advanced separations at EPFL, Switzerland is developing material chemistry and engineering routes to fabricate high-performance membranes for carbon capture. The laboratory is highly multidisciplinary with focus on fundamental science on material synthesis and characterization but also on engineering aspects on scale-up. We also see PDM as a good opportunity to identify students for doctoral study in our group.

We have several PDM position available. Below is a brief description of these projects. Students are encouraged to contact Prof. Agrawal to learn more details of the project:

- 1) Synthesis of two-dimensional (2D) films of metal-organic frameworks (MOFs). This will involve study of crystallization of 2D MOF films by several in-house characterization technique. Development of 2D MOF membranes and molecular transport study.
- 2) Synthesis of 2D covalent-organic frameworks (COFs) films by scale-up friendly techniques. Probing crystallinity and porosity of COF films. Evaluating the suitability of COF films as membrane and membrane support.
- 3) Development of porous graphene membrane for carbon capture. Depending on the applicant inclination, we can offer both engineering aspect of this project (graphene membrane fabrication and testing), or fundamental material chemistry aspects (synthesis and characterization of zero-dimensional pores in graphene).

Application procedure:

Send an email to kumar.agrawal@epfl.ch with a CV which should include a detailed educational background. The subject of the email should be PDM@LAS.