

## PhD offer - Development of coated metal bipolar plates for fuel cells

### Context and goal

In the framework of the joint project TiNTHyN involving universities and research centers in Wallonia, the University of Liège, the CRM Group and the University of Namur recruit a PhD candidate to develop new metallic materials for low temperature fuel cell applications. The research will deal with the development of coatings, using both dry and wet coating procedures, on aluminum plates, and the evaluation of the materials performance for low-temperature fuel cells. This research is part of a network of 12 PhD thesis on hydrogen technologies in collaboration between 4 universities and 3 research centers. The PhD student recruited will thus be involved in research and formation activities within a cohort of 12 fellow PhD students.

### Role of the PhD student

The main role of the hired researcher will be to manufacture and fully characterize coated aluminum plates in the context of their use as Proton Exchange Membrane fuel cell bipolar plates. Aluminum coating and coating characterization will be performed either by wet (slot-die) coating or by dry (plasma) technology at both CRM and UNamur. Electrochemical characterization, from resistance to corrosion to performance evaluation in fuel cell after plate forming will be done at ULiège. The hired researcher will participate to the research on coating procedures, will perform physico-chemical and electrochemical characterizations, will participate to the design of the bipolar plates for experiments in fuel cell and perform characterizations on fuel cell test bench. The student will be enrolled in the PhD doctoral school in Chemical Engineering of ULiège with the aim of completing a thesis within 4 years.

### Information

- *General:* The researcher will be hired by ULiège (Belgium). The work will mainly take place in Liège, both at the University (Department of Chemical Engineering – Nanomaterials, Catalysis, Electrochemistry laboratory) and at the CRM Group, with frequent visits to the LARN laboratory in UNamur
- *Profile:* Master in Sciences (Chemistry or physics) or Master in Engineering (preferably specialized in Chemistry and Materials Sciences).
- *Language:* a good level of English is requested
- *Duration:* 4 years
- *Start:* summer 2024
- ***Monthly salary:* ~4000 € (gross), i.e. ~2400 € (net)**
- *Application:* please send a detailed CV and a motivation letter highlighting your skills and interests related to this specific proposal to [Nathalie.Job@uliege.be](mailto:Nathalie.Job@uliege.be), [Adeline.LAFORT@crmgroup.be](mailto:Adeline.LAFORT@crmgroup.be) and [emile.haye@unamur.be](mailto:emile.haye@unamur.be)
- *Application deadline:* April 30<sup>th</sup> 2024
- *Supervisors:*
  - Prof. Nathalie Job – ULiège, Department of Chemical Engineering (NCE)
  - Dr Adeline Lafort – CRM Group
  - Dr Emile Haye – UNamur, LARN Laboratory