

Evaluating Aluminium energy: performance and electron circularity in the Aluminium-air cell

Record number : OPR-1255

Overview

RESEARCH DIRECTION

Martin Désilets, Professeur - Department of Chemical and Biotechnological Engineering

INFORMATION

martin.desilets@usherbrooke.ca

RESEARCH CO-DIRECTION

Allison Wustrow, Professeure - Department of Chemistry

INFORMATION

allison.wustrow@usherbrooke.ca

ADMINISTRATIVE UNIT(S)

Faculté de génie
Département de génie chimique et de génie biotechnologique

LEVEL(S)

3e cycle

LOCATION(S)

Campus de Sherbrooke

Project Description

Project :

Our research group is seeking a PhD student for an exciting project on aluminum air batteries financed by CNRS and the Université de Sherbrooke. The project is titled 'Évaluer l'Aluminium énergie : performances et circularité des électrons à la pile Aluminium-air.' (EvAlNRJ) and will consist of two theses (co-supervision), one to be carried out in France with l'University of Grenoble-Alpes (UGA), the other in Canada at the Université de Sherbrooke (UdeS). The work will focus on testing commercially viable alloys of aluminum as potential anodes for aluminum-air batteries.

Project Objectives :

- Computational screening of potential anode materials to generate a list of target compositions
- Synthesis and structural characterisation of targeted alloys
- Electrochemical testing of newly formed alloys to investigate efficiency, lifetime, etc.
-

Desired Skills :

- Master's degree or equivalent in chemistry, materials science or another related subject
- Experience working with inorganic solids with experience in both structural and electrochemical characterisation
- Experience or a strong interest in computational studies of inorganic compounds using quantum chemistry methods

Supervision:

The project will be supervised between the research teams of Professors Allison Wustrow of the chemistry department and Martin Désilets of the chemical engineering department. While formally enrolled in the chemistry program, the successful candidate will be a part of two interdisciplinary research teams and have access to a full suite of equipment for characterisation. Student will interface with the other PhD student in EvAlNRJ working for Pr. Philippe Mandin at the Université de Bretagne Sud who will develop methodologies for testing aluminum air anodes.

Application: Please send a CV, cover letter and relevant transcripts to Allison.wustrow@usherbrooke.ca

Discipline(s) by sector

Sciences naturelles et génie

Génie chimique

Funding offered

To be discussed

Partner(s)

Centre national de la recherche scientifique (CRNS)

The last update was on 24 October 2025. The University reserves the right to modify its projects without notice.