



## ***Postdoctoral Positions at the University of Calgary***

In 2016, the University of Calgary was awarded \$75 million over seven years from the [Canada First Research Excellence Fund](#) (CFREF) for its initiative entitled: “***Global Research Initiative in Sustainable Low Carbon Unconventional Resources***”. The goal of this research is to dramatically reduce the impact of energy extraction and energy use on the environment.

As part of the implementation of its CFREF scientific strategy and to address the Grand Challenge aiming to develop next generation of CO<sub>2</sub> conversion catalysis, a project in the production climate neutral synthetic fuels through electrocatalytic carbon dioxide reduction is seeking team members at the Postdoctoral level.

Successful candidates will work within a multidisciplinary team of synthetic chemists, electrochemists, surface scientists and engineers consisting of 5-7 PI's, 5 PDFs and a similar number of graduate students. The primary aim will be to develop new, selective CO<sub>2</sub> conversion catalysts supported on novel conducting materials. While initially CO will be targeted as a product, other potential fuels will also be within scope.

Accordingly, we seek applications from qualified candidates within 2-4 years of their Ph. D. degree to fill up to 5 Postdoctoral Fellow positions with the following specific qualifications:

**1. Synthetic inorganic chemistry (2):** Ph. D. in inorganic chemistry with an emphasis on the synthesis and characterization of organometallic and coordination compounds, particularly of the first row transition series. The ability to prepare and manipulate air and moisture sensitive compounds, and characterize them using a suite of modern spectroscopic and analytical techniques. Working knowledge of electrochemistry and/or X-ray crystallography is also strongly desired.

**2. Electrochemistry and catalysis:** Ph. D. in electrochemistry with an emphasis on electrocatalysis, including homogeneous and surface electrochemistry as well as novel electrode materials. Experience in the evaluation and benchmarking of new CO<sub>2</sub> reduction catalysts, liquid/gas phase product analysis, surface and materials characterization, and mechanistic analysis, would be an asset.

**3. Electrochemical performance evaluation in a small-scale device:** Ph.D. in chemical engineering with doctoral/post-doctoral experience in synthesis and

characterization of electro-catalysts by physico-chemical methods and electrochemical techniques including impedance spectroscopy. The position will entail fabrication and testing of electrode assemblies in a small-scale device. Familiarity with techniques to probe and quantify both the electrochemical kinetics and the mass transport contributions in porous electrodes will be an asset.

**4. Modeling/screening (electro-)catalysts:** PhD in physical chemistry, chemical engineering or materials science with experience in application of Density Functional Theory (DFT) methods to model homo- or heterogeneous catalytic process and/or adsorption. Experience in electrocatalytic experiments and electrochemical characterization methods would be an asset.

Appointments will be for 2 years with a 55K/year salary (CND dollars); the positions also come with sufficient research support to be managed by the candidates in consultation with the PI members of the team. In addition, each candidate will be required to work within a team environment and so excellent communication skills and the ability to work effectively with a diverse group of interdisciplinary researchers is a must.

In assembling the CFREF research teams, aggressive diversity and equity targets are in place and so applications from under represented groups are especially encouraged.<sup>1</sup>

Applications should consist of a current CV, a list of 2-3 referees with contact information and a cover letter indicating you are applying for a position with the **Synthetic Fuels** team and which of the four areas listed above you are interested in. Please also indicate your availability; the search will continue until the team is assembled. Send applications to Natalia Babanova ([nbabanov@ucalgary.ca](mailto:nbabanov@ucalgary.ca)) at your earliest convenience.

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<sup>1</sup> *The University of Calgary recognizes that a diverse staff/faculty benefits and enriches the work, learning and research experiences of the entire campus and greater community. We are committed to removing barriers that have been historically encountered by some people in our society. We strive to recruit individuals who will further enhance our diversity and will support their professional success while they are here. We encourage all qualified applicants to apply.*