Grenoble INP - UGA is a renowned public institution of higher education and research, and a major player in the Grenoble ecosystem. It is the engineering and management institute of Grenoble Alpes University, and plays a leading role in the scientific and industrial community.

Researcher in electrocatalysis for SOFC

<table>
<thead>
<tr>
<th>Job reference number</th>
<th>2024-CHERCHELECTROCAT-LEPMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research field</td>
<td>Solid oxide fuel cells (SOFC) – solid state electrochemistry – Ceramic materials</td>
</tr>
<tr>
<td>Host laboratory</td>
<td>LEPMI (UMR 5279 Grenoble-INP, UGA et CNRS) <a href="https://lepmi.grenoble-inp.fr/">https://lepmi.grenoble-inp.fr/</a></td>
</tr>
<tr>
<td>Researcher profile</td>
<td>Recognized researcher (R2)</td>
</tr>
<tr>
<td>Location</td>
<td>Grenoble, France</td>
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<tr>
<td>Date of recruitment / contract term</td>
<td>01/09/2024 (12 months)</td>
</tr>
<tr>
<td>Contacts</td>
<td><a href="mailto:Cecile.Rossignol@grenoble-inp.fr">Cecile.Rossignol@grenoble-inp.fr</a></td>
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</tbody>
</table>

Grenoble INP - UGA is a leading public institution accredited with the French label “Initiative d'excellence”. It offers innovative engineering and management programs, with an increasing internationalization of its course offers. The courses are grounded in sound scientific knowledge and linked to digital, industrial, organizational, environmental and energy transitions. The Engineering and Management Institute of Grenoble Alpes brings together more than 1300 staff members (teacher-researchers, lecturers, administrative and technical staff) and 8300 students, located on 8 sites (Grenoble INP - Ense3, Grenoble INP - Ensimag, Grenoble INP - Esisar, Grenoble INP - Génie industriel GI, Grenoble INP - Pagora, Grenoble INP - Phelma, Polytech Grenoble, Grenoble IAE and the INP Prepa). Grenoble INP is also a highly-ranked institution of higher education and research, leading the way in the fields of engineering and management on an international scale. It is a member of a large number of international academic and research networks. It is part of the European University UNITE!.

As part of Grenoble Alpes University, Grenoble INP has associated guardianship of 39 national and international research laboratories and of technological platforms. The research conducted there benefits both its socio-economic partners and its students. Grenoble INP is at the heart of the following scientific fields: physics, energy, mechanics and materials; digital; micronanoelectronics, embedded systems; industry of the future, production systems, environment; management and business sciences.

Grenoble INP - UGA is an equal opportunity employer committed to sustainability. Grenoble INP-UGA celebrates diversity and equity and is committed to creating an inclusive environment for all employees. All qualified applications will be considered without discrimination of any kind.
The LEPMI (UMR 5279) is a joint research unit involving Grenoble-INP, Grenoble Alpes University, CNRS and Savoie Mont-Blanc University. The laboratory brings together expertise in most areas of electrochemistry, particularly in electrochemical energy production and storage and photovoltaics, by combining materials science and Team description MIEL (Material Interfaces Electrochemistry): Team leader Dr Cristina Iojoiu

Team is composed of 62 agents (18 researchers, 31 PhD students, 3 technical staff, and 10 collaborative researchers). The activities of the MIEL team combine electrochemistry and materials science and mainly focus on electrochemical energy conversion and storage in both low-temperature (battery, PEMFC) and high-temperature (SOFC, SOEC) systems. One of the team’s strength is to combine the design and development of functional materials, their physicochemical and electrochemical characterizations, and their integration into electrochemical devices. Activities are supported by the laboratory’s platforms, such as the Battery platform, the Raman platform and the M2E platform.

Job description:
Perovskite materials ABO3 are used in many applications as sensors, fuel electrodes or heterogeneous catalysts. The structure and physicochemical properties of perovskites can change depending on the type and proportion of their chemical constituents. Metal nanoparticles dispersed on perovskites enhance their catalytic properties and selectivity. The exsolution method consists of substituting active metal species in a perovskite oxide matrix, followed by the emergence of metal nanoparticles on the surface through chemical or electrochemical reduction. Compared with deposited or infiltrated nanoparticles, exsolved nanoparticles are better dispersed on the surface and better anchored in the host oxide, making them more active and more resistant to agglomeration. As electrodes in solid oxide fuel cells (SOFC) or in solid oxide electrolysis cells (SOEC), these materials are very promising, thanks to their tolerance to impurities and their electrocatalytic properties, enabling a wide range of fuel applications. The aim of this project is to study the exsolution of transition metals (Mn, Fe, Co, Ni and Cu) to improve the electrocatalytic properties of perovskites. The work will cover materials synthesis and physico-chemical (XRD, SEM, XPS, TEM), catalytic and electrochemical characterizations.

Specific requirements or conditions

Skills
Technical and scientific skills in materials science and characterization
Good academic knowledge of electrochemistry
Ability to work in English
Ability to write reports and publications in English
Ability to present results in a clear, pedagogical and audience-friendly way

Position assigned to a restricted area: YES
Device for the protection of the scientific and technical potential of the nation, conditioning the appointment of the researcher to the authorization of the Defense Security Officer.

How to apply
Applications must be sent to: Cecile.Rossignol@grenoble-inp.fr
Application deadline: 10/06/2024
All applications must include a cover letter and a resume