Recrutement prévu dans le cadre du contrat recherche H2020 Virtual FCS

Job title	Modelling and Analysis of the dynamic performance, reliability and durability of a Fuel Cell-based hybrid system.
Ref	2021.15_postdoc_H2020 VIRTUAL FCS
Job type (PhD, Post-doc, Engineer)	Post-doc
Contract duration (months)	12 / 24
Salary	Monthly gross salary [2400€, 2600€] according to experience
Qualifications (Master degree, PhD…)	PhD
Job hours (full time/ part time)	Full time
Employer	UBFC – Université Bourgogne Franche-Comté
Host Laboratory	FEMTO-ST
URL Host Laboratory	www.femto-st.fr/ www.fclab.fr
Address Host Laboratory	FEMTO-ST, UMR CNRS 6174, Belfort (France) in relation with USR FCLAB, Belfort (France) 13 Rue Thierry Mieg, 90010 Belfort France
Job description	**Context** The Université Bourgogne Franche-Comté (UBFC) is a French Higher Education and Research organization, created in 2015, federating three public universities (uB, UFC, UTBM), three public engineer schools (ENSMM, AgroSup, ENSAM) and one private business school (BSB) in the Bourgogne Franche-Comté (BFC) Region according to the collegiate university model (COMUE: Communauté d'Universités et Etablissements). Altogether, UBFC gathers about 60,000 students across 13 sites and 54 research laboratories of which FEMTO-ST, a French leading lab in hydrogen-energy research. SHARPAC team within FEMTO-ST, partner of FCLAB and member of the French national research network on hydrogen (FRH2 CNRS), is a French leading team in modelling, optimization, reliability and durability of fuel cell systems, experimenting, for about 20 years, different approaches to increase their reliability (diagnostic) and improve their durability (prognostic). UBFC is currently looking for a **The postdoctoral fellow** In order to develop models of a Fuel Cell-based hybrid system. Dynamic performance, reliability and durability are of interest. The postdoctoral position is funded by the VIRTUAL FCS project (H2020 – FCH JU2 program funding). This is a three-year project starting from January 2020 on.

	The VIRTUAL FCS project brings together academic, industry and end-users from Norway, Denmark, Poland, France and UK, with the aim to develop an open source platform for fuel cell hybrid system designing and optimization. **The assigned tasks include:** The postdoctoral fellow is expected to carry out the following tasks: • Design performance, diagnostics and prognostics algorithms for fuel cells stacks, batteries and the BoP components of a hybrid fuel cell system, different experimental data will be used to tune and optimize the validity of the algorithms. • Testing and validation of the algorithms in simulations: • Interfacing of the algorithms, in partnership with the project partners, with the control system. • Prepare the testing campaigns (assessing the needs, ordering needed material, build-up of the test bench, setting up testing protocols with partners, running, follow-up of the testing campaigns) • Validation in Simulation and under real operation • Reporting the results and ongoing research activities in written (deliverables, clear notices of the developed code, regular web tutorial about the code use) or during in project meetings (face to face, conference calls, webex, …) • Participating in dissemination activities (scientific publications in selected journals and participations in workshops and conferences, web tutorials).
Supervisor(s)	Assoc. Prof. Nadia YOUSFI STEINER +33 (0)3 84 58 36 67 nadia.steiner@ubfc.fr Prof. Daniel HISSEL +33 (0)3 84 58 36 21 daniel.hissel@ubfc.fr
Candidate profile	**Required qualifications include:** • Holding a PhD degree • Having competencies in one or several of the following topics: electrical engineering, electrochemistry, automatic control, computer science, applied mathematics, data mining, artificial intelligence • Having a solid background in modelling and scientific computing • Having a good written and oral communication skills in English • International applications strongly encouraged • Experience with fuel cells systems, batteries or other electrochemical devices would be appreciated. • Experience with diagnostics and prognostics techniques would be highly appreciated.
Keywords	Fuel Cell System, Battery, Modeling & Simulation, degradation, diagnostics, prognostics, durability, hybrid systems, maritime application, heavy-duty transport.
Application deadline	

Starting Job	As soon as possible
Application *Depending on the type of position*	**Application instructions** Applicants are requested to send the following documents to the following email addresses: nadia.steiner@ubfc.fr and daniel.hissel@ubfc.fr • A detailed academic Curriculum Vitae, including topics of research and exhaustive list of publications. • Copy of the PhD degree. • 2 related publications in full text. • A cover letter. • 2 Referees / Reference names + phone number + email. A single pdf file should be submitted, including all the above-mentioned documents. **Related information** The VIRTUAL-FCS Project www.virtual-fcs.com The USR FCLAB: www.fclab.fr UBFC: www.ubfc.fr The SHARPAC Team: www.femto-st.fr