post-doctoral position

Title of the topic: Integration of K_2NiF_4- type compounds in SOFC

Scientific coordinator: Dr. Virgil Optasanu

Status / Salary index (Indice Majoré - IM) : post-doc (ingénieur de recherche) / 514

Period: 12 months

Estimated date of hiring: 1er octobre 2016

Host institution: Université de Bourgogne

Research unit: ICB UMR 6303 CNRS, PMDM department

Workplace: 9, Av. Alain Savary, 21078 Dijon Cedex

MISSIONS ASSIGNED TO THE AGENT:

To integrate new compounds of K_2NiF_4- type in SOFC as electrodes and/or electrolytes

DESCRIPTION OF THE ACTIVITIES:

The main tasks to complete are the following:

- Prepare several grades of these compounds by different methods
- Characterize their behaviour at 600°C: DC electronic conduction, ionic conduction (^{18}O doping and SIMS analysis);
- Evluate the stability under H_2 atmosphere by TGA;
- Integrate and test the compounds in a fuel cell;
- Conclude and show new directions on the utilisation of these compounds in SOFC;
- Write scientific articles and possibly patenting.

POSITION PROFILE:

- **Required Degree and Knowledge:** PhD in physics/chemistry, skills on ceramics elaboration;
- **Desired skills and personal experience:** skills on elaboration of ceramics by Pechini method, mechano-synthesis, dielectric characterization of materials, structural characterization of materials by XRD (phase, Rietveld), SEM, TEM, desired experience in fuel cells
- **Required personal skills:** autonomy, good organizing and writing skills.

MISCELLANEOUS:

Good knowledge of safety rules for work with powders.