Post-doctoral position (12 months)

Exact heading of the position: Piezoelectric Nanowires towards Composite Fibers

Duration of contract/starting: 12 months / Expected April first, but depending on the official agreement by the French authorities for access of the candidate to the restricted zone of the laboratory. Receipt of this authorization can take up to 60 days.

Field of research: Hybrid materials

Program: Funded by ANR POETICS

Duration for publication: 15th February 2018

To apply (Contact person): Contact Dr. Delville MH: marie-helene.delville@icmcb.cnrs.fr

Detailed job profile

Post-doctoral position at ICMCB “Piezoelectric Composite Fibers”

Administrative Location:
Institut de Chimie de la Matière Condensée de Bordeaux, CNRS
87 Avenue du Dr Schweitzer
F-33608 Pessac Cedex, FRANCE

Project supervisors: Drs. Delville MH, Elissalde Cathy, Mornet Stéphane

Project
The key objective of the POETICS project is to develop new piezoelectric (PZ) fibers that are efficient and actually implementable in energy harvesting structures. These new fibers will exhibit an intrinsic composite structure with efficient inorganic PZ nanorods embedded in organic polymer fibers. Two types of polymers will be considered: 1/ Polyvinyl alcohol (PVA) which is not an electroactive polymer but which is strong, and already used as fibers in a number of demanding commercial applications 2/ PVDF and derivatives which are not as strong as PVA, but which exhibit intrinsic PZ properties...

Program
The recruited post-doctoral fellow will be in charge of the design, synthesis and characterization of high aspect ratio of piezo nanowires based on lead-free metal oxides (ZnO and doped ZnO, barium titanate (BT) and its derivatives). He/she will also have to focus on the colloidal stability of the suspensions of these BT particles which can be optimized through relevant surface modifications. He/she may also be involved in the preparation of the composite polymer fibers and their characterizations

Profile & contact:
Due to the nature of the project, the post-doctoral fellow should have a strong background in sol-gel, hydrothermal and solvothermal chemistry and experience in the field of piezoelectricity of nanomaterials. In addition, she/he should have skills in characterization techniques such as XRD, TEM SEM, her/his PhD in the field inorganic nanoparticles synthesis morphology control and electrical propoerties. An excellent level of English is mandatory. French language knowledge is a plus but not mandatory.

Applicants should contact Dr. MH DELVILLE via email (marie-helene.delville@icmcb.cnrs.fr) and provide detailed CV, a motivation letter, as well as the contact details of at least two referees.