



Birla Institute of Technology & Science, Pilani

Pilani Campus

Dr. Anshuman Dalvi, Ph.D., Associate Professor, Department of Physics
Associate Dean, Faculty Affairs

12th August, 2016

Application invited for JRF Position (DST-SERB Project EMR/2015/000275)

Applications are invited for one position of JRF (leading to PhD from BITS Pilani) in a DST-SERB, Govt. of India funded research project on condensed matter experimental physics entitled, “*Investigations on Li⁺ ion conducting glass-ceramics containing NASICON structured nano crystallites*” at Department of Physics, Birla Institute of Technology and Science, Pilani.

Nature of the work:

Several interesting superionic/fast ionic solids have been developed, but grain boundary impedance (GBI) limits their applications to solid ionic devices. Project aims at development of novel NASICON based glass-ceramics for electrolytic applications in Li⁺ ion batteries. These glass-ceramics with high ionic conductivity will be prepared by a novel glass-filler approach. Structure will be characterized by using FE-SEM, XRD, EXAFS and Raman spectroscopy. Further, electrical properties will be studied using impedance spectroscopy at low and high temperatures. Tailoring grain boundary impedance and exploring parameters that influence GBI will be explored. Thermal stability investigations will be performed using DSC, conductivity-temperature cycles. Finally, fabrication and characterizations of an all-solid-state battery/button cells using compositions developed in the laboratory.

Duration of the Project: 3 Years

Eligibility Criteria: M. Sc. in Physics/ME Materials Science/MTech Materials Science with at least 60% marks. CSIR-NET/JEST qualification and experience in relevant area will be preferred. **Fellowship:** As per DST norms

How to apply: Interested candidates may send application and detailed CV to undersigned on or before **11th September, 2016**

Anshuman Dalvi

(Principal Investigator)



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