

Malaviya National Institute of Technology Jaipur
Department of Physics

Advertisement for post of 'Project Assistant' in a SERB funded research project

Applications are invited from Indian Nationals for a purely contractual position of "Project Assistant" as per the details given below:

- 1. Title of the Project:** Development of carbon based materials for applications in high energy density Metal-air battery cathode.
- 2. Principle Investigator (PI):** Dr. Rajnish Dhiman, Department of Physics, Malaviya National Institute of Technology Jaipur
- 3. Funding agency:** Science and Engineering Research Board (SERB), New Delhi
- 4. Project position(s) and number:** Project Assistant (one only)
- 5. Educational Qualifications:** M. Sc. in Physics or in relevant disciplines with minimum 60% marks or CGPA 6.5 (on 10-point scale)
Desirable: Candidates having experience in the field of materials science, synthesis of nano-materials and electrochemical techniques will be given preference.
- 6. Emoluments:** Rs. 20,000/- per month (Consolidated)
- 7. Duration:** One year (likely to be extended as per the project tenure, subject to annual performance review)
- 8. Job description:** Experimental research work & analysis, candidates have to report to PI for consultation and discussions related to the project work.

9. Project description:

Metal-air batteries (MAB) such as Zn-air, Li-air, Mg-air etc. have the potential to provide high energy density which could be as high as 2-5 times than Li-ion batteries and are thus speculated to be a future perspective to drive the electrical vehicles. In MABs, a metal acts as the anode; while the cathode is made of a porous carbon based material, generally called as air-breathing cathode as it requires oxygen for the completion of electrochemical reaction. Depending upon the non-aqueous or aqueous type of MABs, metal ions or hydroxyl ions act as the charge carriers inside the electrolyte. The reaction of oxygen with ions and electron at the cathode surface is kinetically a very sluggish reaction that often requires a catalyst. In this project, our aim is to develop novel electrode materials and catalysts to enhance the kinetics of the forward and reverse electrochemical reactions at the cathode surface.

The interested candidates may apply for the above-mentioned post by sending the filled application (Format of application is given below) by email and hard copy of the application along with photocopies of certificates by post/courier to the undersigned **by 8th July, 2020**.

Candidates may also note the following:

- a) MNIT Jaipur reserves the right to fix suitable criteria for short-listing of eligible candidates satisfying advertised qualification and requirements of the project post.

- b) The committee also reserves right for not selecting any candidate/offering lower post in case candidates are not found suitable for the applied post.
- c) Only shortlisted candidates will be informed for the interview by e-mail and no separate interview letter will be issued for the same.
- d) Candidates should appear for the interview at their own cost along with their original certificates. No TA/DA is admissible for attending the interview.
- e) The selected candidates can opt for PhD program announced by MNIT (Twice a year) in case they are interested in pursuing PhD at MNIT as per provision in the above work area.

For any further information, the applicants may contact PI by email.

Dr. Rajnish Dhiman

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