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Applications are invited for the position of **Junior Research Fellow** on a research project sponsored by the Science and Engineering Research Board (SERB). The background and details of the project are given below:

General Background

Our research group works on the development and characterization of advanced energetic nanomaterials for next-generation propulsion and energy-conversion applications. We work on problems of practical importance, but the focus is placed on fundamental sciences. We do high-fidelity modelling and simulations that span a wide range of scales, from atomistic to meso- and macro scales. Almost all theoretical studies are done in companion with experimental studies or in the context of experimental data to ensure the validity of the developed model.

Brief Description of Project

Recently, we started working on a sponsored research project with the goal of developing an accurate heat transfer model for metal nanoparticles and develop a predictive model of oxidation of metal nanoparticles. The project will involve a combination of atomistic-scale simulations (such as density functional theory and molecular dynamics simulations) and macro-scale combustion model development. Results from atomistic-scale simulations will be used as inputs to meso/macro-scale models in an effort to develop predictive multi-scale models of oxidation of metal nanoparticles.

Who Should Apply?

We are looking for **sincere, self-motivated, intelligent, and hardworking** individuals to join our group. A B.E./B.Tech. degree (with NET/GATE score) or M.Tech degree in Mechanical Engineering or allied branches is required. A **strong interest in and understanding of fundamental sciences** is required. **Familiarity with computer programming, molecular dynamics and DFT simulations, and LAMMPS and Quantum ESPRESSO packages is highly preferred.** We are looking for a holistic application with strong fundamentals, good communication skills, and professional work ethics. Application must be submitted by **June 21, 2017**.

Details of position

Salary will be Rs. 25,000 per month. The appointment period is 1 year. Extension/renewal of the appointment is based on performance during the first year.

Where to apply?

You can apply by completing the form found in the following URL:

<https://goo.gl/forms/9Db3AYSheGVZ8WFy2>

Please make sure that you answer all the questions completely.