



Advertisement for the Post of one JRF/SRF/RA (any one)

Date: 25th December, 2016

Applications are invited for **one JRF/SRF/RA** for the CSIR funded research scheme (sanction no. 03(1325)/14/EMR-II). The details are as follows:

Title of the research scheme: *Carrier Multiplication in Electronically Coupled Semiconductor Nanocrystals and Harvesting*

Short description of the research scheme: Carrier multiplication (CM) is a process, where the several electron - hole (e-h) pairs are generated as a result of the absorption of a single photon. This phenomenon could be useful to enhance the efficiency of solar photovoltaics (PV). In this project, the study of CM in lead chalcogenide QDs electronically coupled to ZnO nanoparticles and the harvesting of charges by ZnO will be undertaken using optical techniques, especially transient absorption (TA) spectroscopy. Moreover, the effect of the size and shape of the QDs and ZnO nanoparticles (NPs) on carrier relaxation processes and hence CM efficiency and carrier harvesting will be investigated.

Principle Investigator (PI) : Dr. Suman Kalyan Pal

Associate Professor, School of Basic Sciences

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Funding Agency : Council of Scientific & Industrial Research (CSIR), Govt. of India.

Duration : about 12 Months

Fellowship : JRF @ Rs. 12,000/- p.m. plus HRA/MA (expected to be enhanced)
SRF @ Rs. 14,000/- p.m. plus HRA/MA (expected to be enhanced)
RA @ Rs. 36,000/- p.m. plus HRA/MA

Minimum Qualification: JRF- Possesing M. Sc. or equivalent degree with 55% marks in Physics or Chemistry (Specialization Physical Chemistry) or relevant subjects and passing of NET(JRF/LS)/GATE test.

SRF- Possesing (i) M. Sc. or equivalent degree in Physics or Chemistry (Specialization Physical Chemistry) or relevant subjects and at least 2 years of post M. Sc. research/teaching experience as evidenced from published papers in standard refereed journals, (ii) M. Tech or equivalent degree in Material or NanoSciences or Laser or relevant subjects.

RA-Possesing doctorate (PhD) or equivalent in Physics or Chemistry (Specialization Physical Chemistry) or relevant subjects Or having three years of research, teaching and design and development experience after M. Tech or equivalent degree in Material or NanoSciences or Laser or relevant subjects.

Age Limit: The upper age limit for JRF, SRF and RA shall be 28, 32 and 35 years, respectively

Age relaxation: upper age limit is relaxable upto 5 years for SC/ST/OBC/Women and Physically handicapped candidates

Desirable: Knowledge of (chemical) synthesis, characterization and optical property measurements for nanomaterials and QDs.

JRF/SRF may get PhD admission in fulfilling admission criteria of IIT Mandi.

How to apply:Interested and eligible candidates may apply with an updated bio-data in the given format (in [DOC](#) or [PDF](#)) with the file name “CSIR_first name_last name” and email to the PI.

The candidate should clearly mention details about NET/GATE qualification (Year, JRF/LS, rank etc.), if have, in the bio-data.

For further information, contact to PI: suman@iitmandi.ac.in, 09459528125

Deadline for Application: 08-01-2017.