

No. IITM /SRIC/Project No. IITM/SERB/SKP/404/2023

Date: 26.02.2024

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Applications from Indian nationals are invited under the following project on temporary basis with consolidated salary. The renewal of services for few months/a year or up to the duration of the project will be based on satisfactory performance. The initial appointment will be for a period of one and half year(s) or the end of the project (whichever is earlier).

Title of the Project	Investigation of ultrafast carrier dynamics, transport and resistive switching behavior of two dimensional perovskites	
Funding Agency	SERB	
Name(s) of the Project Investigator(s)	Prof. Suman Kalyan Pal (http://faculty.iitmandi.ac.in/~suman/USOLab/)	
School/Center	School of Physical Sciences (SPS)	
Duration of the Project	In months: 36	End date (dd/mm/yyyy): 02/02/2026
Post (s)	Consolidated Pay-slab / Salary	Qualifications
Project Associate-I (JRF)	Rs. 37,000 p.m. plus HRA as applicable	M.Sc. (Physics) with 55% marks or equivalent CGPA and NET/GATE qualification.

The candidates who are interested to apply for the above post should send the complete CV (having personal details, academic qualifications, research experience, publications, name, affiliation and mobile number, email address of two referees, information regarding educational qualifications indicating percentage of marks/division, details of NET/GATE qualification, details of work experience, motivation for research etc. as pdf attachment by e-mail with advertisement No. on the subject line to the PI Prof. Suman Kalyan Pal at email id: suman@iitmandi.ac.in.

IIT Mandi reserves the right to fix higher criteria for shortlisting of eligible candidates from those satisfying advertised qualifications and requirement of the project post. The name of the shortlisted candidates will be either displayed on website or communicated individually along with the offline/online interview (tentative date: 5th April 2024) details.

Relaxation of marks may be granted to the SC/ST Candidates as per GoI norms. **The last date for submitting the completed applications by email is 30th March 2024 by 5.00 p.m.** In case any clarification is required on eligibility regarding the above post, the candidate **may contact at email id:** suman@iitmandi.ac.in.

Short description of the research project: Perovskite solar cell research has reached in the stage of industry-scale production. However, the major hindrance for the commercialization of perovskite devices is poor long-term stability. The stability issue can be addressed by using two-dimensional (2D) structures. 2D perovskites can provide both structural diversity and operational stability to halide perovskite devices. But, the performance of 2D halide perovskites based optoelectronic devices is not impressive. The understanding of dynamics and transport properties of charge carriers is necessary for improving the performance of 2D perovskite-based devices. In this project, dynamics of excited carriers in 2D halide perovskites will be thoroughly investigated by exploiting ultrafast time-resolved terahertz and transient absorption spectroscopy. *Moreover, efforts will be made to develop 2D materials based single or entangled photon sources for quantum technological applications.*