

No. IITM /EMD-USA/SKS 490

Date: 28/6/2024

**Advertisement No.: IITM/ EMD-USA/SKS 490/2024\_2**

Applications from Indian nationals are invited under the following project on temporary basis with consolidated salary. The renewal of services for a few months/a year or up to the duration of the project will be based on satisfactory performance. The initial appointment will be for 1 year, which may be sacked subject to satisfactory/unsatisfactory performance (if indispensable) or may be further extended for another year subject to the recommendation of the competent authority or the end of the project (whichever is earlier).

<b>Title of the Project</b>	<b>Design and Development of Hybrid Metal Complexes Based Resist for Next Generation EUV Technology</b>	
<b>Funding Agency</b>	<i>Merck Electronics (EMD), USA</i>	
Name(s) of the Project Investigator(s)	<i>Prof. Satinder Kumar Sharma, Dr. Abhimanew Dhir, Dr. Ranbir Singh, Dr. Bhaskar Mondal, Dr. Robin Khosla.</i>	
School/Center	<i>Center for Design &amp; Fabrication of Electronic Devices (C4DFED), Indian Institute of Technology (IIT)-Mandi, MANDI-175075 (Himachal Pradesh), India</i>	
Duration of the Project	In months: <b>24</b>	End date ( <b>01/07/2026</b> )
<b>Post (s)</b>	<b>Consolidated Pay-slab / Salary</b>	<b>Qualifications</b>
<b>Research Associate (RA) / Senior Project Scientist</b>	<b>Rs. 40,000-55,000/-</b> (Consolidated)/Applicable on experience, performance, etc.)	<p>a) PhD (awarded or thesis submitted) in relevant areas.</p> <p>i) Potential candidate (s) should have a Ph.D. in Organometallic chemistry and functionalization/ Polymer Synthesis/ Nanoparticles synthesis and functionalization/ Material Chemistry/ Physics / Electronics/Material Science/Microelectronics/VLSI/Instrumentation or a relevant field of science or engineering/technology</p> <p><b>Or</b></p> <p>Potential candidate (s) should have a Ph.D. in Computational Chemistry or relevant areas with sound knowledge and expertise in density functional theory (DFT) applications, understanding of electronic structure methods, chemical kinetics, and surface reactivity calculations, and familiarity with machine learning (ML) models and practices, particularly those related to chemical sciences applications.</p>

ii) Quality research in the field of DFT-based computational chemistry, chemical structure analysis, and electronic structure of metal-ligand complexes, proven with relevant peer-reviewed journal publications and a good academic record.

**b) Desirable Qualification:** 1-2 years of working experience in industry/laboratory is preferable.

(The position mentioned here requires the ability to work collaboratively in a dynamic group. A person with some industry experience in a relevant area may get preference).

**c) Exceptional Expertise:**

i) Applicant must have a sound knowledge of next-generation lithography particularly resists formulation, thin film formation, characterization through the surface analysis techniques (FESEM, TEM, FTIR, WAXS, etc.) and developing condition optimization, resist patterning using electron beam lithography (EBL), extreme ultraviolet (EUV) lithography, and pattern transfer using etching through wet and dry etching techniques.

ii) Applicant with expertise in machine learning models and their application in metal-ligand complexes will be a plus.

The appointment will be made initially for a period of six months, followed by another six-month extension based on satisfactory performance and further extension based on satisfactory performance up to the project duration or subject to the recommendation of competent authority.

**d) The interested candidates may have to arrange three letters of reference.**

Age Limit: The upper age limit is 50 years & may be relaxed for deserving applicants or as per institute or GoI norms, if applicable.

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 work experience, etc. as pdf attachment by e-mail at email id: [c4dfed@iitmandi.ac.in](mailto:c4dfed@iitmandi.ac.in) with advertisement No. on the subject line to the

**Co-ordinator,**

Center for Design and Fabrication of Electronics Devices (C4DFED)

A4 Building (IIT Mandi Kamand Campus)

School of Computing and Electrical Engineering (SCEE)

**Indian Institute of Technology, (IIT), MANDI,**

**Himachal Pradesh, 175075, India**

**E-mail: [c4dfed@iitmandi.ac.in](mailto:c4dfed@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 details**.
- ❖ The PI & Co-PI reserve the right to conduct or not conduct the interview for the post, in case the circumstances may constitute a Screening Committee to fix criteria after taking into account the qualification and experience of the applicants to shortlist candidates to be called for interview.
- ❖ PI & Co-PIs reserve the right to fill up the post, not to fill up the post or cancel the advertisement in whole or partly without assigning any reason. The PI & Co-PIs will also reserve the right to place a reasonable limit on the total number of candidates as per the requirement of the nature of the project job to be called for an interview without any further clarifications/justifications at any level. The decision of the project PIs in this regard will be final.
- ❖ Relaxation of marks may be granted to the SC/ST Candidates as per GoI norms. In case of selection of a retired/superannuated government employee, his/her salary will be fixed as per prevailing GoI rules/ norms. **The last date for submitting the completed applications by email is 15<sup>th</sup> July by 5.00 p.m.** In case any clarification is required on eligibility regarding the above post, the candidate may contact at email id: [c4dfed@iitmandi.ac.in](mailto:c4dfed@iitmandi.ac.in)