



No. SDD-58/2/2023-LAB/304

Date: 07.01.2025

Subject: Advertisement for the position of Research Associate-I (RA-I), purely on short term contract basis at National Institute of Solar Energy (NISE), Gwalpahari, Gurugram.

National Institute of Solar Energy (NISE) is an Autonomous Institute of Ministry of New and Renewable Energy, Government of India to function as an Apex National Centre for research and technology development and related activities in the areas of Solar Energy Technologies in the Country. NISE is located on a 200-acre campus at the Gurugram-Faridabad Road, Gwalpahari, Gurugram, Haryana.

2. NISE invites application from outstanding and enthusiastic researchers from Indian citizen for RA position under different domain. Candidate should be passionate about working on cutting edge research leading to high impact publications and product development in the field of solar energy. The details of the qualification, experience, eligibility criteria, job requirement & remuneration etc. are given below:

| Sl. No. | Post Name and Upper Age Limit | Essential qualifications and Experience | Period of Engagement | Job requirement | Consolidated remuneration (Rs. per month) |
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| (1) | (2) | (3) | (4) | (5) | (6) |
| 1. | Research Associate (I): Solar Resource Assessment & Forecasting *No. of Post: 02 (Two) * (The upper age limit would be 35 years on the last date of receipt of Application) | Essential Qualification <ul style="list-style-type: none">• Ph.D. in Renewable Energy, Solar Energy, Energy Environmental Science, Data science, computer science or other related fields. Or 3 years of experience after M. Tech/ME in the relevant field.• At least one research paper in Science Citation Indexed (SCI) journal. Desirable Skills <ul style="list-style-type: none">• Proficiency in data analysis tools and GIS software.• Experience with solar potential modelling and resource mapping. | Engagement shall be initially for a period of three years and extendable up to a maximum of seven years on year-to-year basis depending upon the performance and functional requirement of the institute. | <ul style="list-style-type: none">• Conduct advanced research to assess and map solar energy resources across different regions in India.• Develop and refine methodologies for comprehensive solar resource assessment.• Develop machine learning models for short and medium-term solar energy forecasting.• Perform quality assessments on solar data to ensure the accuracy and reliability of the datasets.• Create predictive analytics tools to assess the impact of | Rs. 58,000/- +HRA |

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| | | <ul style="list-style-type: none"> • Experience with Probability Density Function (PDF) analysis and statistical modelling. • Experience with machine learning frameworks (e.g., Tensor Flow, PyTorch) and programming languages (Python, R). • Strong analytical skills and experience in integrating diverse datasets. | | <ul style="list-style-type: none"> • climate change and other external factors on solar energy resources. • Conduct data pre-processing, feature engineering, and model validation to ensure accuracy and reliability. • Document research findings and contribute to publications and conferences | |
| 2. | <p>Research Associate (I): Distributed & Localized grid (Mini/Micro-Grid)</p> <p>No. of Post: 02 (Two)</p> <p>* (The upper age limit would be 35 years on the last date of receipt of Application)</p> | <p><u>Essential Qualification</u></p> <ul style="list-style-type: none"> • Ph.D. in Electrical Engineering, Electronics Engineering, Power Electronics, Power System, Instrumentation and Control, Renewable Energy, Solar Energy, Energy or other related fields. Or 3 years of experience after M. Tech/ME in the relevant field. • At least one research paper in Science Citation Indexed (SCI) journal <p><u>Desirable Skills</u></p> <ul style="list-style-type: none"> • Proficiency in simulation and analysis tools (e.g., HOMER, SAM, PVSyst, C/C++, Python, and MATLAB). • Research and design & development experience with generation and distribution (Mini/Micro grid) | Engagement shall be initially for a period of three years and extendable up to a maximum of seven years on year-to-year basis depending upon the performance and functional requirement of the institute. | <ul style="list-style-type: none"> • Conduct feasibility studies and technical assessments for distributed generation projects. • Develop and optimize control strategies for microgrids, including integration with renewable energy sources. • Perform system testing, validation, and troubleshooting to ensure reliable operation. • Develop and implement cybersecurity measures to protect microgrid control systems. • Document research findings and contribute to publications and conferences. | Rs. 58,000/- +HRA |
| 3. | <p>Research Associate (I): Battery Energy Storage</p> <p>No. of Post: 02 (Two)</p> | <p><u>Essential Qualification</u></p> <ul style="list-style-type: none"> • Ph.D. in Electrical Engineering, Renewable Energy, Energy Systems, Material Science, or other related fields or 3 years of experience after M. Tech/ME in the relevant field | Engagement shall be initially for a period of three years and extendable up to a maximum of seven years on year-to-year basis depending upon the | <ul style="list-style-type: none"> • Optimize the design and operation of energy storage systems, identifying factors that affect the reliability and durability of battery systems. • R&D on Next generation battery chemistries such as Sodium-ion, Redox | Rs. 58,000/- +HRA |

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| | <p>* (The upper age limit would be 35 years on the last date of receipt of Application)</p> | <ul style="list-style-type: none"> At least one research paper in Science Citation Indexed (SCI) journal <p style="text-align: center;"><u>Desirable Skills</u></p> <ul style="list-style-type: none"> Proficiency in battery modeling and simulation tools (e.g., MATLAB/Simulink, PSCAD). Experience with battery management systems (BMS) and energy management strategies. Knowledge of electrochemical storage technologies and battery degradation mechanisms. Experience with power electronics, energy conversion, and grid integration of battery storage system | <p>performance and functional requirement of the institute.</p> | <p>Flow, and Solid-State Batteries with the focus on improving cycle life, and addressing the safety concerns and scalability issues across value chain.</p> <ul style="list-style-type: none"> Development efficient and environmentally sustainable methods for recovering valuable materials from used batteries. Develop models and simulations for optimizing battery performance in various renewable energy applications. Analyze data related to battery storage and contribute to the development of strategies for grid integration. Document research findings and contribute to publications and conferences. | |
| 4. | <p>Research Associate (I): (Circular Economy & Sustainability (PV Recycling)</p> <p>No. of Post: 02 (Two)</p> <p>* (The upper age limit would be 35 years on the last date of receipt of Application)</p> | <p><u>Essential Qualification</u></p> <ul style="list-style-type: none"> Ph.D. in Renewable Energy, Solar Energy, Energy Environmental Science, Electrical Engineering, Mechanical Engineering, Chemical Engineering, Material Science or other related fields. Or 3 years of experience after M. Tech/ME in the relevant field At least one research paper in Science Citation Indexed (SCI) journal <p style="text-align: center;"><u>Desirable Skills</u></p> <ul style="list-style-type: none"> Proficiency in life cycle assessment (LCA) and environmental impact analysis. Experience with recycling processes for photovoltaic (PV) | <p>Engagement shall be initially for a period of three years and extendable up to a maximum of seven years on year-to-year basis depending upon the performance and functional requirement of the institute.</p> | <ul style="list-style-type: none"> Conduct research on recycling and sustainable disposal of photovoltaic (PV) modules and materials. Develop and optimize processes for recovering valuable materials from end-of-life PV modules. Perform life cycle assessments to evaluate the environmental impacts of different recycling strategies. Assess grid-scale PV plants for the availability of secondary life modules and end-of-life modules suitable for recycling. Estimate the current and future PV recycling potential in India, identifying key areas for intervention and development. | <p>Rs. 58,000/- +HRA</p> |

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| | | <p>modules and materials recovery.</p> <ul style="list-style-type: none"> • Knowledge of circular economy principles and sustainability practices in the renewable energy sector. • Experience with chemical and mechanical processes used in PV recycling. • Strong analytical skills and experience in evaluating the environmental and economic impacts of recycling processes. | | <ul style="list-style-type: none"> • Design and development of PV module recycling solutions focusing on efficiency and sustainability. • Document research findings and contribute to publications and conferences. | |
| 5. | <p>Research Associate (I): PV modules and system</p> <p>No. of Post: 01 (One)</p> <p>* (The upper age limit would be 35 years on the last date of receipt of Application)</p> | <p><u>Essential Qualification</u></p> <ul style="list-style-type: none"> • Ph.D. in Renewable Energy, Solar Energy, Energy, Electrical Engineering, Electrical and Electronics Engineering other related fields. Or 3 years of experience after M. Tech/ME in the relevant field • At least one research paper in Science Citation Indexed (SCI) journal <p><u>Desirable Skills</u></p> <ul style="list-style-type: none"> • Experience in asset management of PV systems, including monitoring, maintenance, and performance optimization. • PV module measurement and characterization • Proficiency in simulation tools for PV system performance and reliability assessment. • Experience with data analysis for predictive maintenance and fault detection in PV systems. • Strong analytical skills and experience in optimizing the performance and lifecycle of PV modules and systems. | <p>Engagement shall be initially for a period of three years and extendable up to a maximum of seven years on year-to-year basis depending upon the performance and functional requirement of the institute.</p> | <ul style="list-style-type: none"> • Conduct research on asset management and performance optimization of PV modules and systems. • I-V translation procedure development for bifacial module, Development of procedure for Energy rating of bifacial module, • Forecasting of degradation rate of PV modules • Development of procedure and methodology for PV plant performance & ratings. • Data analysis related to the performance, reliability, and lifecycle of PV systems. • Develop strategies for integrating PV systems into agricultural applications (Agri-PV). • Document research findings and contribute to publications and conferences. | <p>Rs. 58,000/- +HRA</p> |

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| 6. | <p>Research Associate (I): New Solar Cell Technologies (Perovskite/Si Tandem, etc.)</p> <p>No. of Post: 01 (One)</p> <p>* (The upper age limit would be 35 years on the last date of receipt of Application)</p> | <p><u>Essential Qualification</u></p> <ul style="list-style-type: none"> • Ph.D. in Materials Science, Physics, Chemistry, Electrical, Electronics, Renewable Energy, Energy Science or a related discipline. • Master's degree in Physics, Material science, Chemistry, Electrical & computer engineering, Electronics, Renewable Energy, Energy Science, Energy or a related field with at least 3 years of research / industry experience in the area of solar cells, materials, or related field. • At least one paper in SCI journal as first author. <p><u>Desirable Skills</u></p> <ul style="list-style-type: none"> • Specialization in solar cell technology, photovoltaics, perovskite solar cells, or semiconductor materials. • Strong understanding as well as hands-on experience on solar cell fabrication processes, light trapping schemes, cell / material characterization techniques • Proven track record of publications in high quality journals | <p>Engagement shall be initially for a period of one years only</p> | <ul style="list-style-type: none"> • Management of clean room facilities and sophisticated fabrication and characterization equipment • Coordination and support in upgradation of R & D facilities at NISE • Design, fabricate, and characterize advanced solar cell devices (e.g., silicon, perovskite, tandem structures) • Synthesize and analyse novel photovoltaic materials for enhanced efficiency and stability. • Analyse experimental data, interpret results, and propose improvements to experimental designs | <p>Rs. 58,000/- +HRA</p> |
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***Age and experience as on the last date of the submission of application.**

3. Terms & Conditions:

- i. **Period of Engagement:** Period of engagement is as stated in column (4) of the eligibility criteria against this post. The position is purely on temporary basis. There will not be any claim from the candidate for seeking permanent position in the institute.
- ii. **Selection Procedure:** The engagement will be purely on short term contract basis. Selections will be based on interview in response to this advertisement, on the basis of relevant research work experience and qualification of applicants.
- iii. **Remuneration: Governed** as per DST notifications vide its No. DST/PCPM/Z-06/2022 dated 26.06.2023.
- iv. **RA-I** will be considered for upgradation to RA-II (Rs. 61,000/-) and to RA-III (Rs. 67,000/-) after completion of One year as RA-I & RA-II respectively. Further RA-II will be considered upgradation to RA-III after completion of one year.
- v. **HRA-** All research may be provided hostel/guest house accommodation if available. RAs residing in the hostel/ guest house accommodation shall not be entitled to HRA. When provision of hostel/guest house accommodation is not possible, HRA will be paid as per central govt. norms applicable in NISE for the city/location where RA is working. The percentage required for calculating HRA will be based on the fellowship amount.
- vi. **Scope of Duties:** During the period of such engagement, the candidates would be required to perform any work as specified in the above table along with any other duties assigned to them by the Heads of the divisions/laboratories of NISE.
- vii. **Leave:** (a) Leave not exceeding 30 days for each completed year for any un completed year, leave may be granted on pro-rata basis. (b) The Associate should not be allowed to proceed on leave to visit abroad for attending conferences/seminars etc. without prior approval of the NISE well in advance. The entire duration of such foreign visits if funded by any national/international agency, whether partially or fully, would be treated as leave without stipend. (c) Women Research Associate with less than two surviving children are entitled to full stipend plus HRA, during the period of absence upto 180 days on grounds of maternity. The Associateship amount for leave period will be paid after the fellow resumes duty and submits a medical certificate in support of actual confinement. It is expected that the Associate will make up for the research work during the remaining tenure. (d) Male Research Associate of NISE with less than two surviving children are entitled for 15 days' paternity leave during confinement of his wife on submission of relevant documentary proof.
- viii. **TA/DA:** No TA/DA is admissible, as per rules of the institute.
- ix. **Office time and working hours:** Engagement would be on full time basis. Working hours shall be from 9.00 AM to 5.30 PM during working days including half an hour lunch break in between. They will not be allowed to take any other assignment during the period of contractual engagement. The candidates may be called on Saturday/ Sunday/ other Gazetted holidays, if required.
- x. **Confidentiality of data and documents:** The Intellectual Property Rights (IPR) of the data collected as well as the deliverables produced for the institute shall remain with this institute. No one shall utilize or publish or disclose or part with, to a third party, any part of the data or statistics or proceedings or information collected for the purposed of this assignment or during the course of the assignment for the institute, without the express written consent of the institute. The candidate shall be bound to hand over the entire set of records of assignment to the institute before the expiry of the contract, and before the final payment is released by the institute.
- xi. **Conflict of interest:** The candidate engaged by this institute, shall in no case represent or give opinion or advice to others in any matter which is adverse to the interest of this institute.

- xii. **Termination of service:** The engagement may be terminated at any time by the institute without assigning any reasons by giving a notice of 15 days. In case, the candidate desires to leave the assignment, he/she is to give 15 days' notice which can be curtailed /extended depending upon the workload.
- xiii. **Number of Positions:** The number of positions have been indicated above in the Table at Column (1).
- xiv. **Medical Facilities:** As per institute norms.
- xv. **Decision:** The decision of the Director General, NISE, Gwal Pahari, Gurugram, Haryana in all matters relating to eligibility, acceptance or rejection of applications, mode of selection, and conduct of examination/interview will be final and binding on candidate.
- xvi. **Relaxation:** The upper age limit is relaxable up to 5 years in the case of applicants belonging to SC/ST, physically handicapped and women applicants whereas 3 years in case of OBC (Non-Creamy Layer Candidates) or as per extant rules of MHRD/Govt. of India amended time to time. Further, Age is relaxable with the approval of Competent Authority of NISE upto Five (05) years for experience/outstanding candidates having experience in relevant subject area.

4. How to apply:

- **Submission of Application:** Interested candidates may send their duly filled application form in the prescribed format as per Annexure I & II with attested photocopies of documents in support of educational qualifications, age and experience. The application form should be submitted via email in a single PDF latest by 21 days from the date of publication the advertisement in Employment Newspaper/Rozgar Samachar/ writing the subject as “Application for “Name of the position” along with relevant field to work with in NISE to the following email ID: recruitment.nise@nise.res.in
- **Application fees:** No fees are required to be paid by the applicant.
- **Announcements:** All further announcements / details pertaining to this process will only be published /provided on NISE websites www.nise.res.in from time to time. Candidates are advised to regularly keep in touch with the authorized NISE website www.nise.res.in for details and updates. In case of any queries please write to recruitment.nise@nise.res.in.

5. Please carry all the original testimonials and **one set of self-attested photocopy** at the time of interview along with the filled application form.

Sd/-
Administrative Officer
National Institute of Solar Energy
Gwal Pahari, Gurugram-Faridabad Road,
Gurugram-122003, Haryana