OFFICE OF INDUSTRIAL CONSULTANCY AND SPONSORED RESEARCH
INDIAN INSTITUTE OF TECHNOLOGY MADRAS CHENNAI – 600 036

Advertisement No.: ICSR/PR/Advt.226/2026 Dated: 02/11/2026

Applications are invited for the temporary post of **Project Engineer**, in the Department of **Engineering Design, IIT Madras.**

Co-ordinator: Prof. C. S. Shankar Ram, Department of Engineering Design, IIT Madras.

Primary Contact: Sundaresan S A, Professor of Practice, Department of Engineering Design, IIT Madras

Duration: Initially for one year, later extendable based on factors such as performance and project funding.

Number of Vacancies: 01

S. No	Post	Qualification and Experience	Pay
1	**Project Engineer**	• Bachelor's degree in electrical engineering, Power Electronics, Mechatronics, or a related field discipline with a Minimum of 75% marks or CGPA of 7.5 or equivalent Candidates with the following additional qualifications will be given preference: • Experience in Collegiate Engineering Design Competitions • Work experience in in high-voltage power electronics design (inverters, DC-DC converters, or OBCs), simulation, and hardware validation for automotive or heavy commercial vehicle platforms • Exposure to Software Tools – 1-D and 3-D simulation (e.g. PLECS, PSIM, LTSpice, MATLAB Simulink/SimScape, Siemens Simcenter, Ansys, Dymola)	**Consolidated Pay up to Rs 60,000/- to Rs 70,000/- Per month depending on experience**

Job Description: Project Engineer – High Voltage Power Conversion Systems (Mobility Applications)

Role Overview

We are seeking self-driven, hands-on, eager to learn and experiment engineers to join as Project Engineer – High Voltage Power Conversion Systems for advanced mobility applications (heavy-duty vehicles and o -highway equipment).

In this role, you will participate in the complete life cycle – starting from deriving detailed hardware and control specifications from vehicle-level requirements, through topology selection, magnetics design, circuit simulation, virtual thermal and EMC validation, prototype builds, bench testing, and final vehicle-level integration and commissioning. Your domain will encompass traction inverters (800V+ Wide Bandgap SiC/GaN), high-voltage DC-DC converters, and off-board chargers.

Key Functions

Application-Driven Specification Derivation & Sizing

- Translate vehicle and powertrain performance targets (peak/continuous power, charging profiles, auxiliary load demands, and drive cycles) into quantitative power conversion hardware and software specifications.
- Derive high-level converter specifications, including operating voltage windows (800V+), switching frequencies, phase current ratings, efficiency targets, thermal dissipation budgets, and ripple/EMI constraints.
- Perform trade-off studies evaluating circuit topologies (e.g., 2-level vs. 3-level Inverter topologies, resonant LLC vs. phase-shifted full-bridge for DC-DC, interleaved PFC for chargers) and semiconductor technologies (SiC MOSFETs, GaN, IGBTs) to optimize efficiency, size, and cost.

Design & Engineering (Power Hardware & Control)

- Schematic design, PCB layout, gate driver architecture, custom magnetics (inductors/transformers), and busbar design for high-voltage power converters.
- Specify DC-link capacitors, power modules, gate drivers, sensing/protection circuits (over-current, over-voltage, desaturation, thermal shutdown), and EMI filters.
- Design cooling architectures (direct liquid cooling, pin-fin cold plates, thermal interface materials) for high power density.
- Collaborate with control software teams to define digital control loops, space vector modulation (SVPWM), dead-time compensation, and communication interfaces (CAN-FD, Ethernet).

Virtual Validation & Circuit Simulation

- Conduct multi-physics virtual validation, including circuit-level switching simulations, loss distribution modeling, thermal CFD, and mechanical/vibration FEA.
- Perform 3D parasitic extraction (busbar/trace stray inductance) to minimize voltage overshoot during fast switching transients ($\mathrm{d}V/\mathrm{d}t$).
- Simulate worst-case operating scenarios, component stress analysis (derating), thermal cycling fatigue, and conductive/radiated EMI performance prior to tape out.

Prototyping & Manufacturing Coordination

- Coordinate early-stage prototype builds, working closely with PCB assemblers, magnetic component vendors, power module packaging suppliers, and mechanical enclosure fabricators.
- Apply DFM, DFA, and DFT (Design for Manufacturing / Assembly / Test) practices for automotive-grade power electronics manufacturing.
- Address assembly tolerances, creepage and clearance compliance, potting/encapsulation, and thermal interface application during prototype assembly.

Bench Testing & Experimental Validation

- Formulate test plans (DVPR) for power conversion units on high-power test benches using grid simulators, programmable DC sources, and dynos/load banks.
- Coordinate hands-on testing: double-pulse testing (DPT) for gate-drive optimization, loss/ efficiency mapping, thermal run-up under full load, short circuit response, and high-voltage safety checks (HIPOT, insulation resistance, partial discharge).
- Conduct pre-compliance EMC testing (conducted and radiated emissions/immunity) and refine virtual simulation models based on measured physical data.

Vehicle Integration & Testing

- Coordinate with Motor Engineering, Battery Management System (BMS), and Vehicle Control Unit (VCU) teams to optimize converter-system interaction (DC link stability, switching noise immunity, charging protocol compliance.
- Support vehicle-level calibration, thermal loop tuning, functional safety testing, and trouble-shooting on chassis dynos or proving grounds.
- Participate in functional safety hazards analysis (HARA) and define technical safety requirements (TSR) for power conversion units. Required Skills & Qualifications

Selection: Based on a written test (Quantitative, Analytical, Verbal, and Technical Skills) and Interview.

The last date for submission of online application is 21.11.2026.

Self-Declaration: Applicants must declare that all information and documents submitted in support of their application are true, accurate, and complete to the best of their knowledge. Any discrepancy, misrepresentation, or submission of false information, if identified, may result in disqualification of the applicant.

General Instructions to the candidates

1) All the positions are on purely contract basis.
2) The completion of the period of contract will not confer any right for further extension, regularization, permanency at the Institute.
3) Candidates should apply online only in the website https://icandsr.iitm.ac.in/careers/current_openings.php - (**Please check the advertisement number Advt.226/2026 displayed and submit the application for the relevant position**).
4) Separate application has to be filled for each post.
5) The system will accept single application only with the registered login ID (email) for an advertisement, hence the candidate is requested to select the multiple positions (In case, the candidate wishes to apply for more than one position) before the submission of application.
6) The application cannot be edited, reverted once it is submitted.
7) Candidates should not attempt to apply twice for the same post. If multiple applications are received from a candidate for the same post, the candidature will be liable to be rejected.
8) Candidates should follow the prescribed procedure for submission of online application.
9) Candidates are advised to fill their correct and active e-mail addresses in the online application as all correspondence will be made by the Institute through e-mail only.
10) The candidates applying for any post should ensure that they fulfil all the eligibility conditions for the post. Their admission to any stage of the selection process will be purely provisional subject to confirmation that they satisfy the prescribed eligibility conditions. Mere issue of registration certificate / call letter to the candidate will not imply that the candidature has been found eligible.
11) After successful online submission of application, a printout of the application form must be obtained and submitted when called for test. It will be required at the time of document verification/test/interview. Hard copy of the application is NOT to be sent to the Institute.
12) Candidates must be citizens of India. Persons who have migrated from Pakistan with the intention of permanently settling in India or subjects of Nepal are also eligible, but in their case a certificate of eligibility from the Government of India will be necessary for appointment. Such candidates should apply to the Government of India in the Ministry of Home Affairs for necessary certificate and furnish satisfactory proof of having so applied.
13) The prescribed qualifications are minimum and unless specified, they are required for consideration for the post, even if higher qualification has been acquired and the mere fact that a candidate possesses the same will not entitle them for being called for interview.
14) Relevant experience gained after the minimum qualifying degree will only be taken into consideration. Minimum requirements of qualifications and/or experience can be relaxed in respect of exceptionally outstanding candidates.

15) The experience required is relaxable at the discretion of the Institute in the case of candidates belonging to the Scheduled Caste / Scheduled Tribe, if at any stage of selection, the competent authority is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the vacancy reserved for them.
16) The Institute reserves the right to restrict the number of candidates for written / skill test / interview to a reasonable limit on the basis of qualifications, level and relevance of experience higher than the minimum prescribed in the advertisement and other academic achievements. The Institute also reserves the right of rejecting any or all the applications without assigning any reasons, therefore.
17) Calling a candidate for test/interview merely indicates that it is felt that the candidate with others may be suitable for the post and conveys no assurance whatsoever that they will be recommended or selected or their conditions specified in the application will be accepted.
18) Candidates will be short-listed for Test/Interview on the basis of the information provided by them in their online applications. They must ensure that such information is true. If at any subsequent stage or at the time of Test/Interview any information given by them or any claim made by them in their online applications is found to be false, their candidature will be liable to be rejected.
19) The Institute shall verify the antecedents or documents submitted by a candidate at any time at the time of appointment or during the tenure of the service. In case, it is detected that the documents submitted by the candidates are fake or the candidate has clandestine antecedents/background and has suppressed the said information, then their services shall be liable to be terminated.
20) In case of any inadvertent mistake in the process of selection which may be detected at any stage even after the issue of appointment letter, the Institute reserves the right to modify/ withdraw/ cancel any communication made to the candidates.
21) Applicants who are working in **any one of the Project at IIT Madras**, must apply through proper channel otherwise they will be required to produce No-Objection Certificate at the time of document verification/Test/Interview. Candidates without NOC will not be permitted to appear for Test/Interview.
22) Candidates may send testimonials from persons intimately acquainted with their work and character. If the applicant is in employment, the candidate should submit testimonials from the most recent employer or immediate superior as a referee.
23) The Institute has a right to decide the mode of screening and testing the applicant for short listing and selection.
24) The Institute solely reserves the right not to fill any advertised position without assigning any reason
25) Only shortlisted applicants will be contacted.
26) No correspondence whatsoever will be entertained from candidates regarding conduct and result of test/interview and reasons for not being called for interview. Canvassing in any form will be a disqualification.
27) The crucial date for determining the eligibility criteria for all candidates in every respect shall be the prescribed closing date for submission of online application.
28) The Institute strives to have a workforce which reflects gender balance and women candidates are encouraged to apply.
29) Any corrigendum/clarifications on this advertisement, if necessary, shall be uploaded on website and no separate communication will be sent for this purpose.

30) If there is any issue to submit the application, please send E-mail to : icsrrecruitment6@icsrpis.iitm.ac.in / icsrrecruitment@icsrpis.iitm.ac.in **Contact: 044- 2257 8843** on all working days from **9.00 AM to 05.30 PM (Monday to Friday – except National Holidays)**. (Please note, only technical issues will be accepted – No interim correspondence with reference to the selection process will be considered).

31) **Instructions to apply online:** Eligible applicants would require to register and apply online through https://icandsr.iitm.ac.in/careers/current_openings.php and submit the application.

Sd/-

CM –HR
Office of IC&SR
IIT Madras

Outlook

Re: Request to Advertise Three Project Engineer Positions

From Esther <lead.emobility@coezet.iitm.ac.in>
Date Mon 02-Nov-26 10:52 AM
To ICSR Consultant & Announcement <icsrrecruitment6@icsrpis.iitm.ac.in>
Cc Tamil Selvi U <mgr@coezet.iitm.ac.in>; shankarram <shankarram@iitm.ac.in>; sundaresan.sa <sundaresan.sa@iitm.ac.in>

3 attachments (404 KB)

Charger-Announcement for the post of Project Engineer_CoEZET_28Oct2026.docx; Drivertrain_ Announcement for the post of Project Engineer_CoEZET_28Oct2026.docx; IVG_Announcement for the post of Project Engineer_CoEZET_28Oct2026.docx;

Dear Ms. Nathiya,

Good morning.

A minor correction has been made to the drafts of all three advertisements. The word "trade-o" under the Key Functions section has been corrected to "trade-off", which has been highlighted for your reference.

Kindly incorporate this change and proceed with the next steps.

Best Regards,

Esther. Y

Lead - e-Mobility Laboratories

Ph: +91-9443820376

On Mon, Nov 2, 2026 at 9:57 AM ICSR Consultant & Announcement <icsrrecruitment6@icsrpis.iitm.ac.in> wrote:

> Dear Sir/Madam,
>
> Kindly review and approve the attached draft to enable us to proceed further.

Note: Only candidates who submit their applications through the official IC&SR portal will be considered for the selection process.

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Thanks & Regards,
Nathiya C
Project Recruitment
Office of IC&SR
IIT Madras
044-2257- 8843

From: ICSR Consultant & Announcement <icsrrecruitment6@icsrpis.iitm.ac.in>
Sent: Friday, October 30, 2026 5:12 PM
To: Tamil Selvi U <mgr@coezet.iitm.ac.in>
Cc: shankarram <shankarram@iitm.ac.in>; sundaresan.sa <sundaresan.sa@iitm.ac.in>; Esther Anand <lead.emobility@coezet.iitm.ac.in>
Subject: Re: Request to Advertise Three Project Engineer Positions

Dear Sir/Madam,

I would like to inform you that the IC&SR Careers Portal will be under maintenance today (30 October 2026).

We will be able to process this request only on Monday.

Thank you for your understanding.

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Thanks & Regards,
Nathiya C
Project Recruitment
Office of IC&SR
IIT Madras
044-2257- 8843

From: Tamil Selvi U <mgr@coezet.iitm.ac.in>
Sent: Friday, October 30, 2026 10:47 AM
To: ICSR Consultant & Announcement <icsrrecruitment6@icsrpis.iitm.ac.in>
Cc: shankarram <shankarram@iitm.ac.in>; sundaresan.sa <sundaresan.sa@iitm.ac.in>; Esther Anand <lead.emobility@coezet.iitm.ac.in>
Subject: Re: Request to Advertise Three Project Engineer Positions

Dear Madam,
Please find below the project No: SB25261555CPCILXAARHOC

with regards
U.Tamilselvi

On Fri, Oct 30, 2026 at 10:34 AM ICSR Consultant & Announcement <icsrrecruitment6@icsrpis.iitm.ac.in> wrote:

Dear Sir/Madam,

Greetings.

Kindly share the project number so that we can verify the manpower allocation in the project. Based on this, we will be able to proceed with posting the announcement.

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Thanks & Regards,
Nathiya C
Project Recruitment
Office of IC&SR
IIT Madras
044-2257- 8843

From: Tamil Selvi U <mgr@coezet.iitm.ac.in>
Sent: Thursday, October 29, 2026 4:18 PM
To: ICSR Consultant & Announcement <icsrrecruitment6@icsrpis.iitm.ac.in>
Cc: shankarram <shankarram@iitm.ac.in>; sundaresan.sa <sundaresan.sa@iitm.ac.in>; Esther Anand <lead.emobility@coezet.iitm.ac.in>
Subject: Request to Advertise Three Project Engineer Positions

Dear Madam,
Please find attached three different job profile documents for the recruitment of Project Engineers.Kindly arrange to advertise these positions on the ICSR Job Portal and Naukri at the earliest.
The last date for receipt of applications may be fixed as 21 days from the date of advertisement.

Please share the draft advertisement for our review and confirmation before publishing.
In case of any clarifications required, please let us know.

Looking forward to your support in this regard, as ever.

U.Tamilselvi
Manager
Centre of Excellence for Zero Emission Trucking
Department of Engineering Design, IIT Madras

L:044-2257-5620

