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TCG CENTRES FOR RESEARCH AND EDUCATION IN SCIENCE AND TECHNOLOGY
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Advertisement for the position of Junior Research Fellow (JRF)

Applications are invited from eligible and motivated candidates for one (01) position of Junior Research Fellow (JRF) under an ANRF (Anusandhan National Research Foundation) Prime Minister Early Career Research Grant (PM-ECRG) funded research project, as detailed below.

Position	Junior Research Fellow (JRF) under ANRF Prime Minister Early Career Research Grant (PM-ECRG) Project
Number of Position(s)	**One (01)**
Title of the Project	Tensor-Network–Based Quantum Circuit Compression and Compilation (TN-QCC) for Scalable Quantum Simulation and Algorithms
Funding Agency	Anusandhan National Research Foundation (ANRF), Prime Minister Early Career Research Grant (PM-ECRG)
ANRF File No.	ANRF/ECRG/2025/003752/PMS
Principal Investigator	Dr. Siddhartha Patra, Assistant Professor, Centre for Quantum Engineering, Research and Education (CQuERE), TCG Centres for Research and Education in Science and Technology (TCG CREST) Email: **siddhartha.patra@tcgcrest.org**
Duration	Initially 1 year, extendable annually based on satisfactory performance up to 3 years, or till availability of project funds.
About the Project	The project aims to develop a tensor-network-based quantum circuit compression and compilation framework, enabling large-scale quantum dynamics simulation on both NISQ and fault-tolerant hardware, and to design hardware-aware circuits for quantum many-body and quantum chemistry applications. The work involves algorithm development, GPU-accelerated tensor-network implementations, and benchmarking on large-scale simulations as well as on real quantum hardware, in line with the goals of the National Quantum Mission.
Essential Qualification	- M.Sc. in Physics (or M.Tech in a closely related engineering/computational discipline), with a consistently good academic record (First Class or equivalent throughout). - Qualified CSIR-UGC NET-JRF, or valid GATE score (as per TCG CREST norms for JRF eligibility). - Demonstrated proficiency in scientific/numerical programming (Python).
Desirable Qualification / Experience	- Strong interest in algorithm and method development for quantum many-body physics and/or quantum computing. - Exposure to GPU-accelerated programming. - Experience using Qiskit. - Prior research project experience during Master's studies (project work, publications, or preprints).
Age and Relaxation	Up to 30 years as on the last date of application, with relaxation for reserved categories, women, and other eligible candidates as per Government of India / ANRF norms.
Fellowship (as per ANRF norms)	- ₹37,000 per month + HRA @ 30% (₹11,100/month), totaling ₹48,100 per month, for the 1st and 2nd year. - ₹42,000 per month + HRA @ 30% (₹12,600/month), totaling ₹54,600 per month, for the 3rd year, subject to satisfactory performance review (SRF upgrade). - Selected candidates will be encouraged and supported to register for a Ph.D. at TCG CREST, subject to meeting the institute's admission criteria.
How to Apply	(A) Interested candidates should send **a single PDF file** containing (1) *a detailed CV*, (2) *a brief statement of research interest (max. 1 page)*, (3) *copies of all mark sheets and certificates (10th onward),* and (4) *CSIR-UGC NET-JRF/GATE scorecard*, to **siddhartha.patra@tcgcrest.org** (cc: **poulomi.chakraborty@tcgcrest.org**), with the subject line *"Application for JRF – TN-QCC Project – <Candidate Name>"*. (B) Candidates must also arrange for 1-2 letters of recommendation to be sent directly by their referees to the above mentioned email addresses with the subject line *"Reco for JRF – TN-QCC – <Candidate Name>"*
Last Date & Time	**14 August 2026**, by 5:00 PM IST, or **till a suitable candidate is found** (reviewed weekly on Friday), whichever is earlier. Applications will be reviewed on a rolling basis, and the position may be closed before the last date if a suitable candidate is identified.
Contact For Further Details	Dr. Siddhartha Patra, CQuERE, TCG CREST | Email: **siddhartha.patra@tcgcrest.org**

Shortlisted candidates will be notified by email and called for an interview (online/in-person, as applicable). Mere fulfilment of minimum qualifications does not guarantee shortlisting for the interview. No TA/DA will be provided for attending the interview.

Bhanu Pratap Das

Date: 15 July 2026

(Signature of the Head of the ~~Institute~~/Centre)