

No: Advt/ IITT/CSRC/2223/10

Date:26-09-2022.

Applications are invited from eligible Indian nationals for the Junior Research Fellow (JRF) post in a time-bound sponsored project undertaken in the Department of Electrical Engineering.

<b>Temporary Position</b>	<b>Junior Research Fellow – 1</b>
<b>Essential Qualification</b>	First Class or equivalent in Undergraduate in Electrical and Electronics Engg. and valid GATE score/Masters in Power Engineering will be a plus
<b>Project Title</b>	Cyber Physical Modelling and Detection of Cyber Attacks in a WADC in Smart Grids.
<b>Sponsoring Agency</b>	Central Power Research Institute, Bangalore
<b>Consolidated monthly Salary</b>	Rs. 31,000 per month + HRA
<b>Principal Investigator</b>	Dr. Vignesh V
<b>Department/Centre</b>	Electrical Engineering
<b>Tenure of Assignment</b>	6 Months
<b>Desired Experience</b>	<ul style="list-style-type: none"><li>● Must have exposure to theoretical &amp; computational research on power systems and smart grid</li><li>● Must have background on mathematical aspects of modelling and control in smart grids.</li><li>● Must be willing to work with real time simulator for power systems.</li><li>● Must be willing to work efficiently in a team environment, self-motivated, and work under a variety of challenging research conditions</li><li>● Must have good oral and written communication skills</li><li>● Must demonstrate the highest work ethics.</li></ul>
<b>Nature of the Work</b>	Controlling poorly damped inter area modes is a significant problem in Indian Grid. WADC, a recent addition to smart grid controls, has been successfully implemented in several parts of the world to damp out inter area modes. Performance of the WADC depends on both cyber systems and physical systems, hence this proposal intends model both cyber and physical parts of the WADC and their interdependencies. WADC uses highly sampled remote signals communicated via synchrophasor network that doesn't go through the traditional bad data detection algorithms. Therefore, it is highly susceptible to cyber-attacks. This project intends to carry out research to detect cyber-attacks in WADC, validate the solution in Hardware in Loop environment and demonstrate in iPDC software.
<b>Age Limit</b>	Age limit- Not more than 30 years. (Relaxed for exceptional candidates)
<b>Last date application</b>	10 <sup>th</sup> October 2022.

Eligible candidates must send a **detailed CV (maximum 2 pages)** specifying their qualifications and experience **and a brief statement of purpose** on or before **10<sup>th</sup> October 2022** to Dr. Vignesh V, Assistant Professor, Department of Electrical Engineering, IIT Tirupati [vigneshv@iittp.ac.in](mailto:vigneshv@iittp.ac.in)

The statement of purpose must include responses to the following questions:

1. What motivates you towards pursuing the JRF position? (max. 200 words)
2. Describe your research interests in the advertised area. (max. 300 words)
3. Explain the tentative research plan briefly by using schematics, figures, flowcharts, and relevant references. (max. 500 words).

The shortlisted candidates will be informed by **Email only**. Selection will be based on the qualification, experience, and interview. **The interview and other logistics will be conducted via online only**. The interview date will be notified to the shortlisted candidates by Email. The candidate may appear in the interview through video conferencing. IIT Tirupati reserves the right to reject any or all the applications without assigning any reason thereof.