National Institute of Technology Tiruchirappalli

The National Institute of Technology (formerly known as Regional Engineering College) Tiruchirappalli (NITT) was started as a joint and co-operative venture of the Government of India and the Government of Tamil Nadu in 1964 with a view to catering the needs of manpower in technology for the country. NITT is one of the 31 National Institutes of Technology established by the Government of India and ranks First among all the NITs in NIRF during three consecutive years. The institution offers Undergraduate Courses in ten branches and Post Graduate Courses in twenty-one disciplines of Science, Engineering & Technology besides M.S. (by Research) and Ph.D. in all the departments.

Website: <u>https://www.nitt.edu</u>

About VRITIKA

VRITIKA is the call for initiation and practice in science through research internships. The main objective of VRITIKA is to groom students (primarily from Universities, Colleges, Private Academic Institutions, and newly established Institutes) in their scientific career pursuits by developing dedicated research skills in selected areas/discipline/fields of Science and Engineering through Training and Skill Internship. This program would facilitate the young talent to choose a career path in Science and Technology, at a later stage. VRITIKA aims to provide opportunities to promising PG students from universities and colleges to get exposure and hands-on research experience. The scheme is meant to support regular PG level students who are having a strong orientation and potential towards scientific and engineering research and pursuing their degree from University/ Institution within India, but do not have requisite infrastructure or expertise in their institutions, to be able to get first such exposure and motivation. This internship program is aimed at the Post Graduate Students of Science / Engineering/ Technology who have research aptitude and enthusiasm to learn the Solar photovoltaic systems and their characterization. The program offers participants an internship rich in experimental learning and professional development opportunities, as well as a chance to be a part of our research group. Internship program also offers the Postgraduate students a chance to interact with Professors of NITT for their future research endeavors.

About the Department

The Department of Electrical and Electronics Engineering offers an undergraduate program, postgraduate programmes (Power Systems & Power Electronics) and research degrees (M.S. & Ph.D.) in various fields of Electrical and Electronics Engineering. The Department is recognized for excellence in teaching, research and service to the profession.

Event Organizer Dr. G. Saravana Ilango Associate Professor, Department of Electrical and Electronics Engineering, National Institute of Technology, Tiruchirappalli, Tamil Nadu - 620 015. gsi.stcnitt@gmail.com



Research Internship (VRITIKA)

[Supported by SERB, Accelerate Vigyan scheme 2020] on Solar Photovoltaic Fundamentals and

Power Converters for Photovoltaic Systems

> June 2021 to July 2021 (6 weeks)

> > Organized by



Department of Electrical and Electronics Engineering National Institute of Technology, Tiruchirappalli, Tamil Nadu - 620 015.

Scope of the Internship

With the growing importance for reducing the dependence on the non-renewable sources of energy, photovoltaic energy conversion has gained much popularity as a viable and green alternative. Although PV modules are getting cheaper, there is a desperate need to maximize the extracted energy to gain reasonable returns on the huge investment on setting up PV. One of the main factors detrimental to the PV energy yield is the partial shading. To minimize the mismatch losses among the modules, it is desired to reconnect the conventional series- parallel array to distribute the shading effect over the entire array without altering the electrical connections of the modules. Whatever be the physical configuration of the array, the output power-voltage characteristics are nonlinear, with the PV power dependent on the voltage at which it is extracted. Thus, there is a need for Maximum Power Point Tracking technique, which requires power electronic interfaces such as DC/DC or DC/AC converters.

This research internship programme is designed to introduce the fundamentals of solar photovoltaics, effect of temperature, irradiation and the impact of partial shading conditions on the extracted power and methods of extracting maximum available power under any environmental conditions. The research internship methodology includes online lectures and case study simulations on solar photovoltaic systems and power converters.



Eligibility

Post Graduate students studying in Electrical and Electronics Engineering / Power systems / Power electronics / Power system engineering / Power Electronics and Drive

Duration

6 weeks (June 2021 – July 2021)

No. of Internships: 10

Mode: Online

For Registration

https://forms.gle/oSwnqStod7DMRm1g9

The selected students will be intimated by 27th May 2021 by e-mail.

Term and conditions

- The period of the Training and Skill Internship shall be at least 6 weeks but not exceeding 2 months.
- The supervisor to whom the interns are attached would be assigning them tasks/assignments, on which, the intern should work and prepare a report to be submitted.
- A certificate regarding successful completion of internship shall be issued to the intern by the supervisor and head of the department on satisfactory completion of the internship and on submission of the assignment report.
- Interns not completing the requisite period will not be issued any certificate.
- ✤ The participant will not be paid any stipend.

Research Internship Program (VRITIKA)

on

Solar Photovoltaic Fundamentals and Power Converters for Photovoltaic Systems

June 2021 – July 2021

Who can apply? M.Tech / M.S. Students

Important Dates

Last date for registration	25/05/2021
Initiation of Selected students	27/05/2021

Organized by

Department of

Electrical and Electronics Engineering National Institute of Technology, Tiruchirappalli.