



**PMMNMTT
Scheme**



**MHRD
Govt. of India**

सत्यमेव जयते

A One-Week Workshop On

Teaching and Learning of Fabrication of Thin films & Optoelectronic Devices through Hands-on Experience

3rd - 8th July, 2018

Call for Registration and Participation

Coordinators:

Dr. K. Thangaraju

Dr. D. Paul Joseph

Dr. V. Jayalakshmi

Prof. A. Ramachandraiah (TLC)

Organized by

**Department of Physics
in association with
Teaching-Learning Centre
National Institute of Technology
Warangal – 506 004, India.**



Overview of the Workshop:

In the context of advancements made in technology related to thin films, display, lighting and solar energy devices, newer topics are being introduced into the curriculum in both technical and science education. However, there is an inherent lag in teaching and learning of these concepts due to lack of exposure and opportunity to learn by hands-on experience. The teaching and learning methodologies are still being evolved in these topics. Hence, it is important for teachers of higher education and research scholars aspiring to be in teaching profession to be abreast of emerging trends in the curriculum so as to understand and teach these topics. Faculty need to update and reorient themselves to meet the rapidly changing professional and scientific needs of the stakeholders. This workshop will enable the participants to learn the basic concepts involved in these advanced topics in a scaled down approach. Lectures and hands-on sessions by eminent experts from reputed institutes will provide a stimulating and enriching experience to the participants so as to excel in understanding of these topics.

Objectives of the Workshop:

- To impart effective teaching/learning methodologies of thin films and device fabrication through hands-on experience.
- To educate the participants on the experimental skills and fabrication of simple and cost effective methodology of thin films & optoelectronic devices.
- To motivate young minds and to build confidence in them to take up technical teaching as a profession.

Topics in the Workshop:

- Aspects of technical teaching and learning
- Basics and Hands-on training of
 - Thin film deposition (**Thermal evaporation and Spin coating methods**) and characterization (**UV/Vis - DRS, Resistivity by Four probe method, etc.**).
 - Device fabrication of **DSSC, OLED and LCD** and characterization (I-V, Electroluminescence studies for DSSC and OLED; brightness, voltage and frequency response for LCDs).

Note: Experiments related to the above topics will be demonstrated and the participants will be given opportunity to perform experiments and fabrication in a team.

Resource persons:

Faculty members from IITs, Centrally funded Institutes/ Universities, NITs and Scientists from ARCI will deliver lectures and demonstrate the experiments and assist in device fabrication.

Registration is open to:

- Faculty members of higher education Institution in both Science and Engineering institutions who work and teach in the related areas of thin films and optoelectronic devices.
- Research Scholars aspiring for technical teaching and to continue research in the areas of thin films, surface coatings, optoelectronic devices, Dye-Sensitized solar cells and related interdisciplinary areas.

How to Apply:

Eligible candidates may apply by submitting the scanned copy of the filled-in registration form (attached with this E-mail/brochure) **by E-mail to: thinfilm2018@gmail.com on or before 31-05-2018.**

Selection and Confirmation of Participation:

Upon receipt of the registration form, the applicants will be selected based on their teaching aspirations and research interest relevant to the workshop. Selected applicants will be intimated through E-mail. Then only, the applicants will send the prescribed registration fees within two days after receipt of the intimation of selection. Only after receiving the proof of payment of registration fee, participants will be sent confirmation of their participation through E-mail by **07-06-2018**. As the programme is conducted in a workshop mode with hands-on sessions, the number of **participants** in the workshop is **limited to 30**. *Candidates are advised to apply and register early to avoid disappointment.*

Registration Fee:

Category	Local participants (With working lunch)	Residential participants (accommodation, breakfast, lunch, dinner included)
Faculty	Rs. 750/-	Rs. 1,500/-
Research Scholars	Rs. 400/-	Rs. 800/-

Note:

1. Registration fee for Faculty and Students of SC/ST category is half of the amount mentioned above as applicable.
2. No travel assistance will be provided.

Registration fee may be sent in the form of a DD or remitted through On-line / NEFT to the Bank Account given below. Local participants may also pay the registration fee in cash to the Coordinators in the Department of Physics.

Account Name	DIRECTOR, RESEARCH ACCOUNT
Account Number	62266262236
Bank	STATE BANK OF INDIA
Branch	SBI, NITW CAMPUS
Branch Code	20149
IFSC code	SBIN0020149

Brief profile of the Department of Physics:

The Department of Physics is involved in teaching UG and PG students of Engineering and Science Programs. The department has highly qualified, motivated and experienced faculty, who guide Ph.D scholars and execute research projects. The department offers a three year M.Sc. (Tech.) Engineering Physics program with specializations in Photonics, Electronics and Instrumentation. The department is actively engaged in research and has a number of sponsored R & D projects on hand. The areas of research include Nanomaterials, Glasses and Biomaterials, Magnetic materials, Bio-Polymers, Photonics, Electronics, Biomedical instrumentation, transparent conducting oxides, liquid crystal displays, organic LED's and solar cells. The department has liaison with reputed industries and R&D organizations like BEL, CSIO, ELOIRA, etc.

About NIT Warangal:

National Institute of Technology Warangal, formerly known as Regional Engineering College was established in 1959. Over the years it has developed into a premier institute of higher learning and is ranked among the top technical education institutions in India. There are 14 Departments offering eight undergraduate and 31 post-graduate programmes besides doctoral programmes. About 5000 students across the country and about 500 international students study on the campus. It is a fully residential campus sprawling over 250 acres with excellent infrastructure in the form of state of the art library, seminar halls, guest houses and research laboratories.

Teaching-Learning Centre of NIT Warangal:

The Teaching-Learning Centre (TLC) is established at NIT Warangal with grants from the MHRD, GOI under the scheme, 'Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching' (PMMMNMTT). Many senior and young faculty members across various departments of the Institute are associated with this center as members of the Core-Team.

One of the important objectives of the center is to conduct training programs for Aspiring, Newly Inducted and In-Service faculty in Science and Engineering disciplines. Other activities of the TLC include preparation of e-learning materials, offering courses on-line, curriculum development, carrying out research in pedagogy and integrating ICT into teaching-learning process.

Accommodation:

Accommodation for outstation participants will be provided upon request at the Institute hostels/guest house.

For any queries, contact any of the following.

Dr. D. Paul Joseph, Assistant Professor in Physics

Dr. V. Jayalakshmi, Assistant Professor in Physics

Prof. A. Ramachandraiah, TLC Coordinator

(mtlc.nitw@gmail.com)

Ph.: 8332969475, 8332969477

E-mail: thinfilm2018@gmail.com

About Warangal:

Warangal is the second largest city of the new state of Telangana. It is situated at a distance of 140 km from the state capital Hyderabad (Nearest Airport). It is well connected by Rail (Kazipet Junction is two km away and Warangal Station is 12 km away) and by Road (NH 202). Warangal is renowned for its rich historical and cultural heritage. It was the seat of erstwhile Kakatiya dynasty. It is a seat of tourist attractions with a number of historical monuments like Thousand Pillars Temple, Warangal Fort, Bhadrakali Temple, Ramappa Temple and Lakanavaram Lake located in a radius of 30 kms.



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REGISTRATION FORM

Name : _____

Date of Birth : _____

Place of Birth: Village/Town/City: _____ Tick as applicable (Rural/Urban)

District _____ State: _____

Gender (Put a \checkmark Mark) : Male Female

Category (Tick as applicable) : **Open / OBC / SC / ST / PWD**

Qualification : _____

Designation : _____

Organization/Institution : _____

No. of Years of Teaching/Research Experience: _____

Area of research : _____

Pl. write how this workshop is beneficial to you: _____

Address for Correspondence: _____

Mobile(s) No.: _____

E-mail(s) ID: _____

Accommodation (Put a \checkmark Mark): Required Not Required

Declaration by the Applicant

If selected, I agree to abide by the rules and regulations of the workshop/training programme and shall attend all the sessions.

Date: _____ Signature of the Applicant

Recommended and Forwarded

Office Seal

Signature of the Head of the Department/ Institution