

## ni-msme - the premier Institute

**ni-msme**, the pioneer institute in the field of MSME is playing a major role in providing pro-business environment to foster the progress of MSME towards success and prosperity. The raison detre of this Institute is to assist the Government in formulating policies for micro, small and medium enterprises and to help the practicing and potential entrepreneurs through a host of services like training, research, consultancy, information, education and extension.

Set up in 1962, **ni-msme** has made valuable contributions by creating an impressive record of achievements beyond the Indian shores, enabling other developing countries to get the benefit of the Institute's facilities and expertise.

Located in a sprawling and enthralling campus amidst a rich natural setting, **ni-msme** is well equipped with both physical and academic infrastructure. In keeping with the changing times and technological changes, the Institute has updated its style of functioning by focusing on the use of IT in every aspect of its activities, but at the same time retaining the wisdom and advantages of deeply ingrained traditional practices.

The core activities are being implemented through Centres like Centre for Industrial Planning and Development (C-IPD), Centre for Policy Research (C-PR), National Resource Centre for Cluster Development (NRCD), Centre for Promotion of Advanced Management Practices (C-PAMP), Centre for Industrial Credit and Financial Services (C-ICFS), Centre for Logistics and Integrated Materials Systems (C-LAIMS), Centre for Environment Concerns (C-ECO), Intellectual Property Facilitation Centre for MSMEs (IPFC), Centre for Entrepreneurship and Industrial Extension (C-EIE), Centre for Consultancy and Counselling (C-CC), Centre for Communication and Information Technology (C-CIT), Small Enterprises National Documentation Centre (SENDOC) as well as cells like Economic Investigation and Statistical Cell (EISC), **ni-msme** NGO Network (N-Cube), Women Studies Cell (WSC), Employee Assistance Cell (EAC), Live Projects Cell (LPC), Resource Centre for Traditional Paintings (RCTP), Goods & Services Tax (GST) Cell and Livelihood Business Incubator (LBI)

The Institute stores and supplies information that helps make a successful entrepreneur who is well versed in the intricacies of business and can participate in business activities intelligently and diligently through its Small Enterprises National Documentation Centre (SENDOC) and knowledge portal [www.msmeinfo.in](http://www.msmeinfo.in). Livelihood Business Incubator (LBI) established in 2016 under the Scheme of ASPIRE of Ministry of MSME, Govt for creating a favorable ecosystem for entrepreneurial development in the country.

The Institute has trained more than 5,32,000 participants by organising around 15,800 programmes which includes prospective/existing entrepreneurs and officials from various Ministries of Govt. of India and State Governments till March 2019. The Institute is implementing ITEC Scheme of Ministry of External Affairs, Govt. of India since 1967 and trained more than 10,000 International Executives from 142 developing countries till March 2019. The Institute has also undertaken more than 940 research and consultancy projects.

The management of the Institute rests with the Governing Council appointed by the Government of India. The governing body acts through the resident Director. The present Director General is **Mr. D. Chandra Sekhar**

*For further details, please contact*



**The Registrar**

**National Institute for Micro, Small and Medium Enterprises**

(An Organisation of the Ministry of MSME, Govt. of India and ISO 9001-2015 Certified)

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Training Programme

On

## Solar Energy - Solar Photovoltaics for Field Engineers

04 - 06 May 2020



**Programme Director**

**Mr. J. KOTESWARA RAO**

Associate Faculty Member (S.E.D)



**National Institute for Micro, Small and Medium Enterprises**

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## INTRODUCTION

Solar Energy is a readily available source of energy. It is also the most important of the non-conventional source of energy as it is Non-polluting and therefore helps in reduction of Green House Gases.

Photovoltaic is the application of solar cells for energy by converting solar energy directly into electricity. The increasing demand for clean sources of energy has led to a dramatic increase in photovoltaic systems. Photovoltaic production has doubled on average every two years. An average 48 percent growth has been seen each year since 2002. This makes photovoltaics the world's fastest growing energy technology. Another feature that has made this technology popular is Net metering which is a financial incentive to having solar electric energy.

The National Solar Mission aims at 20,000MW solar energy by 2020. This would mean installation of new solar energy capacity of 2000MW per year. The Ministry of New and Renewable Energy (MNRE) New Delhi, India has formulated a programme to have Solar Energy in more than a million households in next few years. This has created a huge demand for technical manpower in solar energy field.

**ni-msme** a premier institution planning to conduct a three day Training programme on "Solar Energy- Solar Photovoltaic's for Field Engineers" on 04-06 May 2020

## OBJECTIVE

Implementation of National Solar Mission will need massive trained human resource in areas of manufacturing, installation, commissioning and maintenance of this solar installation.

The training programme on "Solar Energy-Solar Photovoltaic's for Field Engineers" aims at training the technical personnel in installation, commissioning and maintenance of the solar equipment in the field. The 3 days training programme is designed to educate and build the solar field engineers who would meet the exponential demand of solar energy industry.

## COURSE COVERAGE

Basics of Solar Energy, Solar radiation

- I-V Curve, Temperature Effects
- Role of Charge Controllers
- Short Film on Solar Energy utilization
- Battery technology and its Role in PV system
- Diodes & Inverter in PV system
- Angle of Tilt & Spacing Factor Maximum Power Point Tracker
- System Designing of Load
- System Designing of Battery & Modules
- Wiring Sizing
- Economic Analysis
- Market Overview & Off – Grid Systems
- Trouble Shooting & MNRE Programmes under National Solar Mission
- Case Study Presentation
- Field Visits & Measurements

## METHODOLOGY

Methodology includes class room lectures with audio visuals, interactive sessions through group discussions, case studies etc. Emphasis would be laid on sharing of experiences of participants. Active participation is solicited from participants.

## WHO SHOULD PARTICIPATE

- Educational requirement for attending this training programme is Diploma in Mechanical / Electrical/ Electronics/ B.Sc. (Physics) / ITI. + 2 yrs of experience. Technical employees in Solar Energy Industry can also attend.

- Installers, Specifiers and those who need or want to have a good understanding of Solar Photovoltaic installation and maintenance.
- Companies that need trained manpower for business expansion in Solar Photovoltaic domain.
- Organizations/ entrepreneurs engaged in implementation of Solar Photovoltaic Plants.

## BENEFITS TO THE PARTICIPANTS

As solar energy takes off as a viable and affordable renewable energy resource, green jobs are sprouting up for solar installers. This training will provide complete awareness and technical knowledge on module designing and economics, installation / commissioning and maintenance of Solar PV plants.

**Programme Venue :** ni-msme campus, Yousufguda , Hyderabad.

**Dates :** 04-06 May 2020

**Timings :** On the first day, Registration will commence at 09.00 hrs. On all other days, the programme timings will be from 09.30 – 17.15 hrs with breaks in between for tea and lunch.

## COURSE FEE

**Rs. 7,500/- (Seven Thousand and Five hundred Rupees only) Residential Fee** per participant. **Rs. 6,000/- (Six Thousand Rupees only) Non-Residential Fee** per participant. **(In addition 18% GST is applicable)**

Fee includes course material, course kit, twin-sharing accommodation as per availability, breakfast, lunch, dinner, tea / coffee and snacks during the actual days of training programme.

To register manually, please send your nominations giving details of name, designation, contact address, e-mail address, Mobile Nos, Telephone and Fax number of the participant along with the details of payment of fee, in favour of "**Director (Administration & Logistics)**" ni-msme payable at **Hyderabad**.

## CERTIFICATE

A certificate of participation will be awarded to each participant on conclusion of the programme.

### Programme Director

Mr.J.Koteswara Rao. M.Tech.,  
Associate Faculty Member (S.E.D)

## GENERAL INFORMATION

**ni-msme** encourages participants to present case studies from their respective organizations.

**ni-msme** provides complimentary accommodation only to participants a day prior to the commencement and after the conclusion of the programme.

- Well developed Information Centre and internet facilities are available to the participants Free of cost.

Enquiries and nominations may be addressed to:

**The Registrar,**

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