

## TARGET AUDIENCE

The workshop is open for faculty/students of engineering colleges, practicing engineers and policy maker from utility, industry and other organizations.

## FACULTY

The faculty for the workshop will be drawn from various schools of IIT Mandi and other IITs and organizations. Some of the distinguished invited speakers are:

- Prof. S. N. Singh, IIT Kanpur
- Prof. F.G. Longatt, Loughborough University UK
- Prof. S. C. Srivastava, IIT Kanpur
- Prof. P. R Bijwe, IIT Delhi
- Prof. D. Thukaram, IISc Bangalore
- Prof. Avinash Kumar Sinha, IIT Kharagpur
- Prof. S. A. Khaparde, IIT Bombay
- Prof. Ramesh Oruganti, IIT Mandi
- Prof. Naran M. Pindoriya, IIT Gandhinagar

## REGISTRATION FEE

The registration fee is Rs. 2000/- for academic participants and Rs. 5000/- for participants from utilities, industries and other organizations. Registration fees will cover workshop fee, workshop material, working lunches, and refreshments during the workshop period only. Accommodation (shared basis at hostels) may be provided on request. Registration fee does not include the travel expenses of the participants.

All payments should be through DD drawn in favor of “*The Registrar, IIT Mandi*” payable at Mandi, HP, India.

## IMPORTANT DATES

|                                    |               |
|------------------------------------|---------------|
| Last date of receiving application | June 30, 2016 |
| Notification and selection         | July 01, 2016 |

Note: Selected candidates will be informed by fax / email, if provided.

## MANDI AND ITS CLIMATE

Mandi is a small scenic beautiful town at the center of Himachal Pradesh. A few hours before the Himalayan resorts Kullu and Manali in Himachal Pradesh, once considered "the end of the habitable world". The town has both mythological and historical significance and boasts of unique temple architecture. It is also referred to as Chhota Kashi as there are many ancient temples in the city and on the banks of river Beas. The river Beas flows through the town and hills, which makes this town more scenic.

**Weather at Mandi:** The weather at Mandi in August is expected to be pleasant with occasional rains.

### How to reach:

**Road:** Mandi is well connected by road to other places. From Chandigarh (200 km) one can travel by road to Mandi via Bilaspur. This would take about 5-6 hours. Shimla, Pathankot, Delhi, Dharamsala and Manali are all connected to Mandi by road. Mandi is actually the heart of Himachal since all buses passing from north to south and from east to west of the state touch Mandi, making reaching Mandi a not so challenging option.

**Train:** The nearest railway stations are Joginder Nagar and Shimla by narrow gauge train, Chandigarh and Kalka by broad gauge train which are connected by regular bus services. From Pathankot the narrow gauge railway connects Joginder Nagar, which is 55-km from Mandi.

Information about the Institute as well as general information is available at institute website: <http://www.iitmandi.ac.in>

## HOW TO APPLY

The duly filled registration form along with the registration fee should be sent to:

**Dr. Bharat Singh Rajpurohit**  
Indian Institute of Technology Mandi  
Mandi-175001, HP, INDIA  
Phone: 01905-267067 (O)/ 8894580096(M)  
Fax: 01905-300009  
Email: [bsr@iitmandi.ac.in](mailto:bsr@iitmandi.ac.in)

An

**International Workshop**

On

**Next Generation Active Distribution  
Networks to Empower Future Low-  
Carbon Indian Society**

**August 12-14, 2016**

at

*Indian Institute of Technology Mandi*



**Workshop Coordinators**

**Dr. Bharat Singh Rajpurohit, IIT Mandi**

**&**

**Prof. S. N. Singh, IIT Kanpur**

## INTRODUCTION

Looking beyond 2030, the challenges of efficient distribution and management for electricity networks are likely to get tougher. There exists a general consensus that the challenges of climate change, system security, and a need to accommodate significant volumes of decentralized and renewable generation, require the network infrastructure to enable smarter grid operation. The major changes to the way we supply energy and monitor its consumption by building a smarter grid lie at the heart of these changes. Governments around the world are propitiating serious efforts towards becoming decarbonized economies as a part of a National climate change mitigation strategy. The transition to a decarbonized economy involves three main aspects: (i) developing energy efficiency, (ii) developing renewable energy capabilities and (iii) dealing with adaptation needs arising due to climate change.

The large increases in electricity generation from intermittent/highly variable renewable resource, the increase of stressing/narrowly conditions on transmission system, a massive decoupling between generation/load and several other features expected into the future electricity networks will negatively affect the system security. To overcome these issues and the renewable sources into the distribution network, making it an active distribution network, the concept of microgrid presents itself to be a viable solution. It can have several other advantages which include reduction in transmission losses, improvement in power quality & reliability, reduction in emissions and even provide provisions for heterogeneous power quality. Even though the concept seems promising, much of research is needed to bring about its actual implementation. The reliable and sophisticated solutions to the foreseen issues of the future networks are creating dynamically-intelligent application/solutions to be deployed during the incremental process of building the smarter micro-grids. The future electricity networks and its

potential issues require looking beyond the existing research frontiers irrespective of the disciplinary boundaries. For this reason, the discussion of the future development on smarter architecture and its intelligent applications/solutions is the key research point to provide the critical importance to economic and social welfare into future smarter micro grids networks. The solutions using the advanced technologies/methodologies will be discussed. Several technical studies based on the recent research work will also be presented by Indian and UK researchers.

## SCOPE OF THE WORKSHOP

The workshop's objective is to enhance the knowledge of the participants in the area of the "Next Generation Active Distribution Networks to Empower Future Low-Carbon Indian Society". A unique, national level opportunity which delves into the high-level, strategic issues relating to the integration of renewable energy and examines practical strategies that energy generators, project developers, and grid operators can implement to overcome obstacles posed by local planning schemes and regulations and, importantly, do it in an intelligent, cost-efficient and timely way. The workshop will provide a platform to an in-depth discussion on the various challenges and their possible remedies which will benefit participants from academic and R&D institutions, engineers of utilities and policy makers. Successful implementation of active distribution networks or microgrids, calls for diversified technologies and expertise from various disciplines. A workshop with focus on researches such as the one proposed will enrich the technological repertoire of the research community in the country. As the leading researchers from the country are being invited, the workshop is expected to result in a well-defined road-map for the development and deployment of microgrids in India.

## REGISTRATION FORM

International Workshop On

### Next Generation Active Distribution Networks to Empower Future Low-Carbon Indian Society

Aug. 12-14, 2016

Name \_\_\_\_\_

Date of birth \_\_\_\_\_ Designation \_\_\_\_\_

Organization \_\_\_\_\_

Address for correspondence \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

Accommodation Required: Yes/NO (Tick one)

#### Payment details:

Draft No. \_\_\_\_\_ Issuing bank \_\_\_\_\_

Amount \_\_\_\_\_ Drawn on \_\_\_\_\_

Date \_\_\_\_\_

Signature of applicant

*Forwarded by head of Institutions*

\* Make photocopies of registration form if required