



# INNOVATIVE TECHNOLOGIES FOR RURAL DEVELOPMENT AND THEIR COMMERCIALISATION



A MULTI-MEGA EVENT (ITRDC-2017)

(With emphasis on Renewable Energy and DAE Technologies)

18<sup>th</sup> to 21<sup>st</sup> February 2017



Organized by

**CENTRE FOR RESEARCH & TECHNOLOGY  
DEVELOPMENTS**

SINHGAD INSTITUTES, SOLAPUR – 413 255

In collaboration with

**MEDIA RELATIONS AND  
PUBLIC AWARENESS SECTION,  
Bhabha Atomic Research Centre,  
Mumbai - 400 085**

Venue :

**N B NAVALE SINHGAD  
COLLEGE OF ENGINEERING,  
Kegaon, Solapur - 413 255  
(INDIA)**



## Preamble

Rural development is the process of improving the quality of life and economic well being of people living relatively isolated and sparsely populated areas. The need for rural communities to approach development from a wider perspective has created more focus on a broad range of development goals rather than merely creating incentive for agriculture or resources based businesses. Education, entrepreneurship, physical infrastructure and social infrastructure all play an important role in developing rural regions.

With a vision of “Development of human being through research” the Savitribai Phule Shikshan Prasarak Mandal, Kamlapur has established the “Centre for Research & Technology Developments”, Sinhgad Institute, Solapur (India) in N.B.Navale Sinhgad college of Engineering Solapur. This centre mainly focuses on top ten problems of next fifty years .To begin with Energy, Environment and Health Science are attempted.

The centre has ventured in a big way to undertake rural development program with innovative technologies. It consists of mainly four events as follows :

## A Multi-Mega Event

### ITRDC 2017

National Conference on “Engineering the Materials for Technology Applications” (with special reference to renewable and nuclear energy)	Exhibition & Trade Show of renewable and nuclear energy technologies (Display, demonstrate & sale) by Scientist, Industries Technocrats, Students	Skill Development Programs for DAE Technologies for: 1.Farmers 2.Institutional Industrialist Interaction 3.Talent Search (Quiz Competition) 4.Incubation Centre 5.Medical Practitioners 6.Robotics Workshop      7. DISTA	Launching of national project on “First Cloud Physics Experiment” in collaboration with IITM Pune sanctioned by DST Delhi.
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Sr. No	Events	Dates			
		Saturday 18 <sup>th</sup> Feb	Sunday 19 <sup>th</sup> Feb	Monday 20 <sup>th</sup> Feb	Tuesday 21 <sup>st</sup> Feb
1	National Conference on Engineering the materials for technology application with special reference to renewable and nuclear energy				
2	Exhibition & Trade Show of renewable and nuclear energy technologies				
3	Skill Development Programs for DAE technologies				
4	Launching of national project on “First Cloud Physics Experiment” in collaboration with IITM Pune sanctioned by DST Delhi.				
5	Science Exhibition for Students				
6	Talent Search (Quiz Competition)				
7	“DISTA” National Level Tech Festival for Engineering Students				
8	Robotics Workshop				

## Focus of Conference

18<sup>th</sup> to 20<sup>th</sup> Feb, 2017

- Renewable Energy, Solar Thermal, Solar Photovoltaic, Bio-gas, wind, Tidal, Thin Film Solar Cells, Nonmaterial's, Energy Storage Devices, Biomass Energy Conversion, Biomass Gasifies, Energy Conversion, Heating & Cooling of Building, Bio and Hospital Waste Management, Rural Appropriate Technology, Power Co-generation, Energy Audit
- DAE Technologies
- Cloud Physics
- Mathematical Modeling and Computations
- Manufacturing, Design, Automobiles, Thermal Engineering, Fluid Mechanics, Composite Materials
- ICT, Cloud Computing, Big Data, Data Mining, Image Processing, Artificial Intelligence, Cyber Security
- Advanced Trends in Telecommunication and Advanced Electronics Design Technology, Wireless and Sensor Networks
- Transportation Engineering, Structure, Bridge and Tunnel Eco-building, Rain Water Harvesting and Management
- Nano-bio Materials, Nano Medicine, Biotechnology, Health Science and Technology
- Flexible AC Transmission System (FACTS), Harmonics, Power Quality, Electrical Machines and Drives.

## Call for abstract

A copy of the Abstract of the paper may be submitted /emailed ([itrdc2017@gmail.com](mailto:itrdc2017@gmail.com)) to the "Convener ITRDC-2017" on or before 16<sup>th</sup> January 2017. Abstracts may confined to A4 Size paper having a maximum of 300 words. The abstract should include full titled typed in capital letter & center. The authors names & affiliations may follow the title .The name of authors presenting the paper should be underlined. The email- address of corresponding author, as well as affiliation of all author & their complete address should be given. The text, in single spacing may start after a gap of one line letter size should be 12 in Times New Roman fonts. Authors should submit the PDF files of their abstracts via email. All the abstracts accepted for presentation ITRDC-2017 will be printed in an Abstract Book or copied in CD.

## Exhibition (Business Opportunities at ITRDC)

18<sup>th</sup> to 21<sup>th</sup> Feb, 2017

Build meaningful relationship, showcase products & technology solutions, service as well as directly interact with people who make the strategic decision. ITRDC- 2017 will provide you with an ideal opportunity to meet the people, who really matter to you and yours business. As an exhibitor, this event offers a host of business opportunities. The important feature of exhibition is display, demonstrate and sale.

## Skill Development Programs for DAE technologies

19<sup>th</sup> to 20<sup>th</sup> Feb, 2017

Skill Development” on 19th and 20th Feb, 2017. The primary objective of the workshop was to develop an action plan for skill development initiatives. Agriculture is one such important sector under the peaceful uses of atomic energy having major societal impact. Nuclear Agriculture and Biotechnology Division (NABTD), a constituent Division in the Bio-Medical Group of Bhabha Atomic Research Centre, is involved in a broad based research programme for developing high yielding, early maturing crop varieties with resistance to biotic, abiotic stresses, better nutritional quality and wider ecological adaptability using mutation and recombination breeding and their deployment for societal benefits so skill development program for farmers. The industrial and societal applications of Isotopes and Radiation Technology include water resources development, management and environmental control; development of new technologies using sealed sources and radiotracers for NDT, process optimization and troubleshooting of industrial systems; Hot Cell operations for fabricating kilocurie level Co-60 sources for use in various types of irradiators, hospitals and other applications; and use of gamma and electron beam radiations for developing new products with improved/specific properties so second session for Industrialist.

1) Farmers    2) Industrialist    3) Students    4) Incubation Centre    5) Medical Practitioners

## ROBOTICS WORKSHOP

19<sup>th</sup> Feb, 2017

A robot is an electro-mechanical device that can cause a change in the environment it operates by its actions. These actions may be controlled by a human operator or may be autonomous. The purpose of this workshop to get the prerequisite knowledge of Robotics and get the benefit to their project work. Robotics is inherently interdisciplinary in nature and is a confluence of techniques and technologies originating from the disciplines of Mechanical, Electrical, E & TC and Computer Engineering. The Robotics workshop is going to be conducted by eminent scientist of the Bhabha Atomic Research Centre (BARC).

## NUCLEAR ENERGY AND HEALTH CARE (NEHCA-2017)

19<sup>th</sup> Feb, 2017

AS per the say, “YATRA SHKATI TATRA JEEVANAM”, the energy, is needed for the existence of life. Nuclear Energy is one of the best choices from the alternatives. In order to explore this, the CRTD has organized a workshop on “NUCLEAR ENERGY AND HEALTH CARE (NEHCA-2017)”, in collaboration with INDIAN MEDICAL ASSOCIATION, Solapur and BHABHA ATOMIC RESEARCH CENTER, Mumbai. This workshop is an opportunity for the Medical practitioners and students to understand the Medical Radiation Exposure and Radiation Oncology Perspective.

## Talent Search (Quiz Competition)

20<sup>th</sup> Feb, 2017

The faith of the commercialization of renewable and nuclear energies technologies is very much dependant on the interest of the youth of the nation. The young engineers can play a key role in this direction. With this motive in mind, it is planned to organize the renewable and nuclear energies technologies for intercollegiate competition in ITRDC- 2017. It consists of mainly a competition on theme of conference and exhibits. The more detail available on website.

## DISTA - 2k17

21<sup>th</sup> Feb, 2017

DISTA - 2k17 is congregation of students with diverse talent in technical arena. It has been a mega event since last seven years which includes paper presentation poster presentation, Lathe War, CAD War, Robo Race, Technical Quiz, Circuit Building, Circuit Debugging and so forth. A platform is provided to engineering students so showcase their talent.

## Participants

Anybody interested in renewable and nuclear energies technologies from any field is invited to participate in the multi mega event. College students are especially invited to take part in the inter collegiate quiz and exhibition computation organized on the topics of DAE technologies. Manufactures are invited to avail this opportunity to exhibit their product to the pool of targeted users. Farmers, Industrialist, Professors and students are invited to take part in the special workshop on DAE technologies. Researchers are invited to make the presentation in the form of poster/oral.

## Registration Information

	Upto 2 <sup>nd</sup> Feb 2017	After 2 <sup>nd</sup> Feb 2017
National Conference: A) Students B) Delegates	Rs. 1500 Rs. 2000	Rs. 2000 Rs. 2500
Workshop/ skill Development	Rs. 500	Rs. 750
Exhibitors	Rs. 7000 to Rs. 10000 (As per space & position)	Rs. 8000 to Rs. 12000 (As per space & Position)
Inter Collegiate Quiz Competition (Team Entry)	Rs. 2000 (Per team of 4 students) Entry fee + Registration of National Conference	Rs.2500 (Per team of 4 students) Entry fee + Registration of National Conference

## Payment Details

All Payment should be made payable at NBNSCOE Innovative Technologies for Rural Development and their Commercialization (ITRDC-2017) A/c. No. 587001210000024 Solapur Janata Sahakari Bank Ltd., Navi Peth, Solapur. IFSC Code : SJSB0000099

## Accommodation

On campus accommodation may be provided on request at nominal charges on first come first serve.

## Deliverable from the Event

- Transformation of existing energy utilization pattern of conventional to renewable energy resources.
- Making available DAE technologies for rural development.
- Gain the latest information about state of the art renewable and nuclear technologies.
- Learn Social & economical aspects of renewable and nuclear energies implementation.
- Review the recent policy developments impacting the Indian renewable energy sector.
- Gain understanding of government policies and priorities.
- Achieve strategic and operational excellence to address the goal of advancing renewable energy.
- Participate in interactive panel discussion tackling some of the most pressing issue, facing the industry.
- Experience sharing through presentation and case studies.
- Interact and network with the stakeholders & policy makers.
- Opportunity to Display, Demonstrate and sale product by industries.

### ITRDC-2017

18 <sup>th</sup> February 2017		19 <sup>th</sup> February 2017		20 <sup>th</sup> February 2017	
09.00 am to 10.00 am	Registration	09.00 am to 11.00 am	Oral Presentation	09.00 am to 10.30 am	Poster Presentation
10.00 am to 11.00 am	Inauguration	11.00 am to 11.15 am	TEA	10.30 am to 10.45 am	TEA
11.00 am to 12.00 noon	Keynote Address	11.15 am to 12.00 noon	It6 (DAE Technology)	10.45 am to 11.30 am	IT12 (Cloud Physics)
12.00 noon to 12.45 pm	IT1 (DAE Technology)	12.00 noon to 12.45 pm	It7 (DAE Technology)	11.30 am to 12.15 pm	IT13 (Cloud Physics)
12.45 pm to 01.30 pm	IT2 (DAE Technology)	12.45 pm to 01.30 pm	It8 (DAE Technology)	12.15 pm to 01.00 pm	IT14 (Cloud Physics)
01.30 pm to 02.30 pm	LUNCH	01.30 pm to 02.30 pm	LUNCH	01.00 pm to 02.00 pm	LUNCH
2.30 pm to 03.15 pm	It3 (Renewable Energy)	2.30 pm to 03.15 pm	IT9 (Renewable Energy)	02.00 pm to 02.45 pm	IT15 (Material Science)
03.15 pm to 04.00 pm	It4 (Renewable Energy)	03.15 pm to 04.00 pm	IT10 (Renewable Energy)	02.45 pm to 03.00 pm	IT16 (Nano Science)
04.00 pm to 04.45 pm	It5 (Renewable Energy)	04.00 pm to 04.45 pm	IT11 (Renewable Energy)	03.00 pm to 03.45 pm	IT17 (Health Science)
04.45 pm to 05.00 pm	TEA	04.45 pm to 05.00 pm	TEA	03.45 pm to 04.30 pm	IT18 (Health Science)
05.00 pm to 06.30 pm	Oral Presentation	05.00 pm to 06.30 pm	Oral Presentation	04.30 pm to 04.45 pm	TEA
				04.45pm to 05.00 pm	IT 19 (DAE Technology)
				05.00 pm to 06.00 pm	It20 (DAE Technology)
				06.00 pm to 06.30 pm	Valedictory Function

## Background of Organization

### A) Sinhgad Institutes:

Sinhgad Institute is one of the largest providers of quality education in India. Prof. M .N. Navale Founder President of Sinhgad Institute established these centers of excellence with the vision of bringing technical education to the masses. Today, Sinhgad Institute provides education from KG to PG and also runs doctoral programs. Starting with Sou. Venutai Chavan Polytechnic in 1993, today we have nearly 85 education institutes located at 12 campuses nurturing the dreams of over 86,000 students in various disciplines every year. The location of these campuses is in pollution-free, lush green and picturesque environment conducive to learning.

We always endeavor to meet the growing needs of higher technical and management education by adopting new technologies, methodologies, disciplines, resources and even attitudes. We always welcome and quickly respond to new suggestion and innovative ideas to upgrade the quality of education at Sinhgad Institutes. Considering the need of nation, the Sinhgad Institute Solapur has established recently “Centre for Research and Technology Developments Sinhgad Institutes, Solapur that meets to global needs. The centre has planned the Multi Mega Event on “Innovative Technologies for Rural Development & Their Commercialization ( ITRDC-2017)”, in collaboration with BARC, Mumbai, to showcase the significance and promote the usage of innovative technologies for rural development that dreams come true of **Mahatma Gandhi**.

## B) BARC , Mumbai :

The Bhabha Atomic Research Centre is the premier multidisciplinary and interdisciplinary nuclear research centre of India with excellent infrastructure for advanced research & development and expertise covering the entire spectrum of nuclear science and engineering and related areas. Apart from its headquarters at Trombay spread over 3000 acres, various programmes and facilities of BARC are in operation at Tarapur, Mysore, Kalpakkam, Gauribidanur, Vadodara, New Delhi, Mount Abu, Gulmarg and Hyderabad. Several Environmental Survey Laboratories and Units are also in operation in different parts of the country. A whole new campus is being developed at Vishakhapatnam. In order to facilitate the R&D workflow, 20 major Groups have been set up at BARC.

Beginning with the design of Research Reactors at Trombay, BARC has attained maturity in all technologies related to Pressurized Heavy Water Reactors. BARC is actively engaged in R&D in Basic Sciences as well as Engineering. Apart from this, BARC has made substantial progress in all related core areas such as Electronics, Control and Instrumentation for High End Computing, Design and fabrication of a variety of nuclear structural materials and fuels. BARC has developed technology & best practices for reprocessing of spent fuel, safe management of nuclear wastes for all the back-end operations of the closed fuel cycle for the Pressurized Heavy Water Reactors.

Non-power application of Nuclear energy such as Radioisotopes, Food & Agriculture for improving crop productivity and to reduce post harvest losses, Medicine, drinking water, Industry, hydrology, human resource development and R&D spinoffs is another area of interest at BARC and we have developed, deployed and transferred several technologies. 42 new crop varieties in oil seeds and pulses using radiation induced mutagenesis and hybridization have been developed, released and Gazette-notified for commercial cultivation. We at BARC are involved in design and innovation to meet the country's growing energy demands. Nisargruna biogas technology of BARC has been used for treatment of domestic and industrial organic waste. Technology for treatment of municipal sewage sludge has been developed and deployed. BARC is also participating in other national missions of Department of space, defense, S&T and others.

Over the years BARC has been recognized as one of the leading institutes in the area of nuclear science and technology and has several international collaborations with USA, UK, France, Norway and Germany. BARC has specific collaboration on fuel and material testing with Jules Horowitz (JHR) in France and Halden Reactor Project in Norway. BARC along with other Indian laboratories is collaborating in the area of high energy physics and technology involving the Large Hadron Collider (LHC) at European Organisation for Nuclear Research (CERN), French accelerator GANIL, Fermi Lab and Jefferson Lab (USA). BARC has been in the forefront of international collaborations covering the entire gamut of peaceful applications of nuclear science and technology. The longest collaboration is the IAEA-coordinated Regional Cooperation Agreement (RCA) where BARC participates in a number of projects by providing facilities, expertise and training in the application of nuclear technologies to Asia Pacific countries, in the areas of health care, agriculture, industry, hydrology and other related topics. BARC participates in a large number of Co-ordinated Research Projects (CRPs) of the IAEA. Under the IAEA's Programme of Action for Cancer Therapy (PACT), "Bhabhatron", the teletherapy machine made by BARC, has been accepted as an appropriate cancer treatment technology for developing countries in Asia and Africa. Bhabhatron Machines have been supplied to Vietnam, Nigeria, Zambia, Magnolia and Tanzania.

## Chief Patron

### Prof. M. N. Navale

Founder President, STES, Pune  
& Chairman SPSPM, Kamalapur

### Mr. Rohit M. Navale

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Campus Director, Sinhgad Institutes,  
Solapur

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**Dr. K. N. Ganeshan** UGC-DAE Research Centre, Indore

**Prof. Dr. P. P. Patil** Vice-Chancellor, NMU, Jalgoan.

**Prof. Dr. S. H. Pawar** Research Director, Sinhgad Institute, Solapur

## Local Organizing Committee

### Organizing Chair

#### Prof. Dr. S. H. Pawar

Convener ITRDC-2017 , Director, CRTD Sinhgad Institutes, Solapur

#### Dr. S. D. Nawale

Principal, NBNSCOE, Secretary ITRDC2017

#### Prof. B. G. Holey

Principal, SPS, Solapur

#### Dr. Usha Dhapola

Principal, SPS, Korti, Pandharpur

#### Dr. R. K. Singh

Co-Convenor ITRDC-2017 , BARC, Mumbai

#### Dr. S. K. Patil

Principal, SKNSCOE, Kamalapur

#### Mr. N. D. Adlinge

Principal, Anand Vidyalay, Kamalapur

#### Mrs. Suzanne Thomas

Principal, SPS, Kamalapur

### Chief Co-ordinator

### Event Co-convener

#### Prof. S. T. Jagtap

ITRDC-2017

**Dr. I. M. Chandarki** (9890847247)

**Prof. S. V. Tare** (9975924942)

**Prof. R. R. Honkalas** (9633605172)

**Dr. Y. G. Datar** (9881068842)

**Prof. A. K. Shaikh** (8888499450)

**Dr. K. C. Mujawar** (7588371786)

**Prof. V. S. Biradar** (9422941800)

**Prof. A. M. Kalaje**

**Prof. J. G. Kulkarni**

**Prof. P. P. Tapkire**

**Prof. A. A. Phatak**

**Prof. S. S. Shirgian**

National Conference

Trade Fair

DISTA 2k17

(Medical Practitioners Workshop)

(Industry Interaction)

Public Awareness

Student Rally

Dean, Academic

Dean, Administration

HOD, Civil Engineering

HOD, Computer Science & Engg

HOD, Electronics and Telecom. Engg

**Mr. B. G. Holey** (8380025623)

(Science Exhibition)

**Dr. S. H. Kshirsagar** (9552529262)

(Quiz Competition)

**Dr. V. V. Kharat** (9552529260)

(Interaction with Scientist)

**Prof. V. R. Marathe** (9423386919)

(Robotics Workshop)

**Prof. P. B. Navale** (8380025647)

(Farmers Workshop)

**Prof. I. I. Kazi**

Member, ITRDC2017

**Prof. S. T. Waware**

Member, ITRDC2017

**Prof. S. S. Ghatage**

Member, ITRDC2017

**Dr. S. S. Kulkarni**

Member, ITRDC2017

**Mr. S. V. Joshi**

Member, ITRDC2017

**Mrs. J. V. Madane-Patil**

Treasurer, ITRDC2017

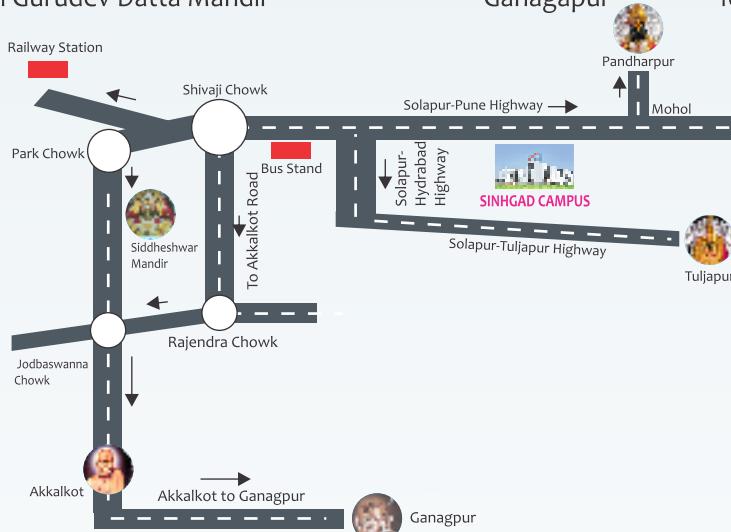
## About SOLAPUR

It is located in south-eastern Maharashtra & easily accessible via air, road & is an important railway junction on the North South train line. It is an ancient historical and religious place with Shri Shivyogi Siddhrameshwari, also famous for Lord Vitthal is at Pandharpur in this District. Swami Samarth of Akkalkot has followers from all walks of life. The well-known temple, Tulja Bhavani Temple, is dedicated to the Hindu goddess Bhavani at Tuljapur near to Solapur. In month of February it enjoys moderate climate.

## Places to visit

### Distance from SINHGAD CAMPUS, Solapur

1) Shri Shivyogi Siddhrameshwari Mandir	Solapur City	10 km
2) Shri Tuljabhawani Mandir	Tuljapur	54 km
3) Shri Vitthal Rukmini Mandir	Pandharpur	70 km
4) Shri Swami Samarth Mandir	Akkalkot	48 km
5) Shri Gurudev Datta Mandir	Ganagapur	100 km



## Important Deadlines

Abstract Submission	: 16 <sup>th</sup> January 2017
Intimation of Acceptance	: 23 <sup>rd</sup> January 2017
Last date for the receipt of accepted papers	: 16 <sup>th</sup> February 2017
Booking of stall for Exhibitors	: 2 <sup>nd</sup> February 2017
Participate Registration	: 2 <sup>nd</sup> February 2017

## Address for Correspondence

**Dr. R. K. Singh**  
Co-Convenor, ITRDC-2017 &  
Head, Media Relations and  
Public Awareness Section  
**Bhabha Atomic Research Centre,**  
Mumbai-400085  
Website: [www.barc.gov.in](http://www.barc.gov.in)

**Prof. (Dr). S. H. Pawar** (Emeritus Scientist)  
M.Sc. Ph.D., F.I.C.C., F.M.A.Sc.  
Convener, ITRDC-2017 & Director, Centre for Research &  
Technology Developments, Sinhgad Institutes,  
Kegoan, Solapur-413255 (M.S.) India  
Ph. No. 0217-2500610 Mob. 8380025689  
Email:- [researchtechnology2016@gmail.com](mailto:researchtechnology2016@gmail.com)  
Website: [www.spspm.org](http://www.spspm.org)

[www.spspm.org/NBNSolapur\\_2015/Home.html](http://www.spspm.org/NBNSolapur_2015/Home.html)  
<https://sites.google.com/view/sinhgadirdc>