

CHHOTUBHAI GOPALBHAI PATEL INSTITUTE OF TECHNOLOGY

Department of Automobile Engineering, Electrical Engineering and Mechanical Engineering

A REPORT

ON

Short Term Training Programme based on

“Futuristic Innovation in Renewable Energy Systems”

Title of the STTP	Futuristic Innovation in Renewable Energy Systems
Organizing Department	Department of Automobile Engineering, Electrical Engineering and Mechanical Engineering
Chief Patron	Dr. D. R. Shah, Provost, UTU.
Patron	Dr. N. C. Shah, Director, CGPIT.
Convener	Dr. Chinmay K. Desai, HOD of Mech./Auto. Dept.
Organizing Secretary	Prof. Rakesh S. Gajre (H.O.D. of EC/ELE Dept) Prof. Ankur Rana Prof. Harshit Desai Prof. Darshan R. Vora Prof. Gaurav Gadhesaria
Organising Committee	Prof. Chinmay Naik Prof. Karmani Rajput Prof. Jay Patel Prof. Nidhi Shah Prof. Ashish Chaudhari Prof. Hiren Shah Prof. Seema Lad Prof. Krunal Gaywala Prof. Darshan Kapadia Prof. Keyur Patel
Target Audience	Faculty members , Research Scholars & students, Industry delegates.
Total Number of Participants	103
Date of Programme	18 th –22 nd January, 2016
Invited Speakers	Dr. Channiwala Salim Abbasbhai, Professor, Mech. Dept, SVNIT, Surat Dr. Surendra Singh Kachhwaha, Professor, Mech. Dept., PDPU, Gandhinagar Dr. A. K. Panchal, Associate Professor, ELE Dept., SVNIT, Surat Dr. R. Chudamani, Associate Professor, ELE Dept., SVNIT, Surat Mr. Chetan Shah, Director, Goldi Green DR. R. N. Patel, Professor & Head Mech. Dept., Nirma

University

Schedule of STTP

Monday (18/01/2016)	Tuesday (19/01/2016)	Wednesday (20/01/2016)	Thursday (21/01/2016)	Friday (22/01/2016)
Registration & High Tea (9.00 AM – 10.00 AM)	High Tea (9.30 AM – 10.00 AM)			
Inauguration (10.00 AM – 10.45 AM)	Biodiesel Technology (Dr. S. S. Kachhawaha Head, Mech.Dept, PDPU, Gandhinagar) (10.00 AM – 12.00 PM)	PV Interfaces with Grid (Dr. R. Chudamani, ELE, Dept.,SVNIT, Surat) (10.00 AM – 12.00 AM)	Industrial Visit (Navitas Solar)	Energy Extraction from Biomass (DR. R. N. Patel, Prof. & Head Mech. Dept, Nirma University) (10.00 AM – 12.00 AM)
Overview on Current Renewable Scenario (Dr. S. A. Channiwala, Head, Mech. Dept., SVNIT, Surat) (10.45 AM – 12.30 P.M.)				
Lunch break (12.30 P.M.-1.30 P.M.)	Lunch break (12.00 PM -1.00 PM)			
Solar Energy Technology (Dr. A. K. Panchaal, ELE. Dept.,SVNIT, Surat) (1.30 P.M. - 3.30 P.M.)	Wind Energy Technology (Dr. S. S. Kachhawaha Head, Mech. Dept, PDPU, Gandhinagar) (1.00 AM – 3.00 PM)	Renewable Energy System from Industrial prospectives (Mr.Chetan Shah, Director, Goldi Green) (1.00 AM – 3.00 PM)	Industrial Visit (Navitas Solar)	Valedictory and Certificates Distribution (1.00 PM – 1.30 PM)
Tea break (3.30PM – 3.45PM)	Tea break (3.00 PM – 3.15 PM)			
Practical Session (3.45 PM – 5.00 PM)	Practical Session (3.15 PM – 5.00 PM)	Practical Session (3.15 PM – 5.00 PM)	Industrial Visit (Navitas Solar)	

Details of the STTP:

Preamble:

Department of Automobile Engineering, Electrical Engineering and Mechanical Engineering, CGPIT has organized five days STTP on “Futuristic Innovations in renewable energy Sources” sponsored by Uka Tarsadia University. Total 103 participants participated in this STTP which includes faculties, Industry delegates, research scholars and students from different colleges of Gujarat.

The inauguration ceremony of STTP was started by UTU song followed by lamp lighting and prayer to seek the blessings of almighty. As per tradition of CGPIT, all the dignitaries were given a warm welcome and were felicitated to express respect and gratitude towards them for devoting their valuable time and gracing the STTP. The dignitaries that graced the inauguration ceremony of STTP were Dr. N. C. Shah (Director, CGPIT), Dr. R. Krishnamurthy (Director, CGBIBT), Dr. S. A. Channiwala (Professor, SVNIT, Surat) and head of all the departments of CGPIT. Along with the dignitaries, our experts were also felicitated by the coordinators of the STTP.

Ms. Dhara Marwadi gave a brief introduction about the STTP on which the STTP was focused. She introduced the experts and expressed her views about the importance of STTP.

The Honourable Director of CGPIT, Dr. N.C. Shah gave the welcome speech. He motivated the students and faculties for participating in technical events like short term training program, workshop, expert talk, etc. He also congratulated the Auto/Mech department & Electrical department for organizing such STTP. He also appreciated the efforts made by Auto/Mech. department & ELE. department with the great coordination. Dr. Chinmay K. Desai, HOD of Mech./Auto. Department, gave brief introduction about the STTP. He has also explained that why the topic selected for the STTP is the most relevant topic by giving an example of flood took place in Chennai. Dr. Channiwala sir has shared his knowledge about the need of renewable energy. He has discussed the problem that the world is going to face. He has discussed that the New York will be flooded in next 60 years and Surat will also be flooded in upcoming 250 years if we fail to find any alternative of conventional sources. He appreciated all the committee members of STTP for their efforts and also appreciated the participants for their presence. Mr. Ankur Rana gave the vote of thanks.

Session Detail:

All the sessions were very interactive and laid a very good impact on the audience.

Session-1: Overview of Alternative Energy Technologies

Session-2: Solar photovoltaic Technology and Renewable Energy

Session-3: Recent Development in Biodiesel Production Technology

Session-4: Wind Energy Technologies

Session-5: Grid Connected Photovoltaic System

Session-6: Renewable Energy System from Industrial prospective

Session-7: Industrial Visit at Navitas Solar and 100 MLD TTP sewage treatment plant

Session-8: Energy Extraction from Biomass

- **Overview of Alternative Energy Technologies**

In this session, Dr. S. A. Channiwala discussed about the need of renewable energy. He also covered difference between conventional and renewable energy. He mainly concentrated on Solar Energy and Wind Energy, production and limitations of the same. He also gave briefs on Wave Energy, Ocean Energy, Geothermal Energy, Hydro Power and Biomass Energy. During highlighting the applications he emphasized on Fuel Cells and Electric/Hybrid Vehicles.

- **Solar photovoltaic Technology and Renewable Energy**

In this session Dr. A. K. Panchaal discussed some of the very important topics in a very convincing way such as: Need of renewable energy sources, Solar cell structure, I-V curve, Efficiency of cell, solar PV module, MPPT for solar photovoltaic, MPPT algorithm, and Type of PV system.

- **Recent Development in Biodiesel Production Technology**

In this session Dr. S. S. Kachhawaha discussed recently developed methods of Biodiesel Production Technology such as: Ultrasonic, Microwave, Hydrodynamic cavitation and supercritical. He also explained Microwave technique using a very interesting case study.

- **Wind Energy Technologies**

In this session Dr. S. S. Kachhawaha mainly concentrated on wind energy as a renewable energy source. He discussed effective methods of energy production using wind. He enriched our knowledge by stating different case studies for the same. He also touched upon some sensitive issues such as: the reduction in conventional Energy sources, Global Warming, Green House effect, and increase in carbon emissions.

- **Grid Connected Photovoltaic System**

In this session Dr. R. Chudamani started with the very basic idea of solar cells and thoroughly discussed PV cells as well as module, and connection of the same with the grid. She also discussed about Multifunctional Grid Interactive PV system.

- **Renewable Energy System from Industrial prospective**

In this session Mr.Chetan Shah discussed about the industrial scenario and requirement about solar energy system and also motivated students to work in the area related to solar and try to bridge the gap between industry and academics.

- **Industrial Visit at Navitas Solar and 100 MLD TTP Sewage Plant**

Navitas is a renewable energy company active in designing and manufacturing of alternative energy solutions. With expertise in both grid-connect and off-grid power. Navitas Solar have one of the most technologically advanced solar PV module manufacturing facilities in India. Navitas plans to offer PV modules ranging from 3 watt to 375 watt per panel, mono and multi crystalline modules. The industrial person over there has explained whole process of making the solar panels in detail. All the equipments like anti reflector, EVA layer, cell string and solar cell tester etc. used in the construction of solar panel and whole process have been seen thoroughly.

The experts have explained the all process in detail. Tertiary Treatment Sewage Plant uses 100 Million Litres water per Day and it generate 0.6 MW energy form the same.

Energy Extraction from Biomass

In this session Dr. R N Patel discussed in detail about biomass production using organic matter, by virtue of photosynthesis. He discussed about conversion techniques in details, and also discussed about the phases of combustion.

Prof. Harshit Desai thanked all participants and speakers of STTP on behalf of organising committee at the end of the session.

Glimpse of the STTP:



The Venue



Registration Desk



High Tea



Dignitaries on the dais



Inauguration Ceremony



Welcoming Dignitaries



Speech by Dignitaries



Vote of thanks



Present a memento to Chief Guest



Technical Sessions



Organizing Committee



Industrial visit at Navitas solar

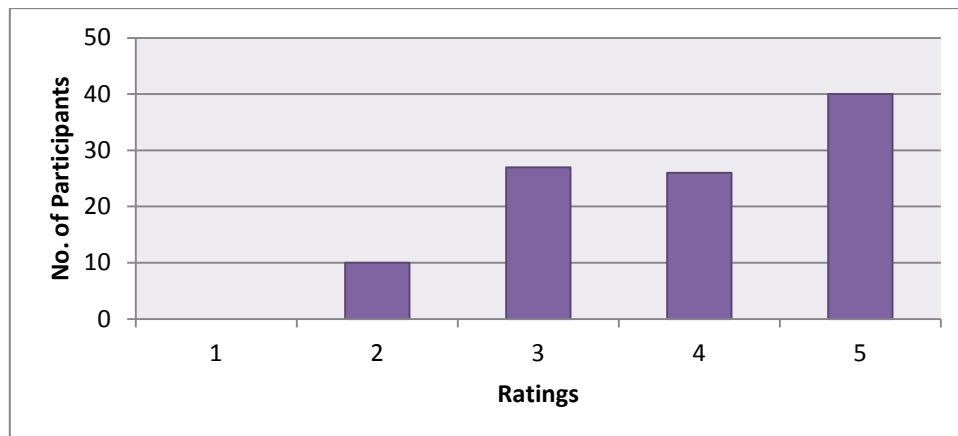
Committee members of the STTP:

Sr. no	Committee	Mentor	Memebers	Tasks to be performed
1	Publicity and Campaigning	Prof. Jay A. Patel, EED Prof. Hiren Shah, MED	Prof. Umang Wani, EED Prof. Krunal Patel, MED	Campaigning (indoor and outdoor), Posting the brochure, Mailing the brochure.
2	Registration, Kit Certificate and Banner	Prof. Chinmay Naik, EED Prof. Drashan Kapadia, MED	Prof. Pranav Contractor, EED Prof. Priyanka Patel, EED Prof. Sandip Patel, MED Prof. Dharti Parmar, MED	Handling participation entries, Collection of registration fees, Handling cancellation of any participation, Preparation of registration kit, Mailing the schedule, Printing (Brochure, Banner, Certificate, Memento) Certificate Writing
3	Report Writing and Press Note	Prof. Nidhi shah, EED Prof. Keyur Patel, MED	Prof. Unnati Mali, EED Prof. Pratik Patel, MED	Summarizing each session, Completing report writing with photos and feedback, Press note making (Pre and Post event)
4	Class and Lab Arrangement, Food and Accommodation	Prof. Krunal Gaywala, MED Prof. Ashish Chaudhary, EED	Prof. Nilay Desai, EED Prof. Brijesh Naik, MED Prof. Pallavi Gamit, EED Prof. Ankit Desai, MED	Arranging the venue as per schedule, Software installation, Infrastructure arrangement (mike, speaker, white board, marker, water, chair, etc.), Arrangement for food including breakfast, lunch and high-tea.
5	Photography	Prof. Hardik Vashi, MED Prof. Kapil Gohil, MED	-----	Clicking photographs, Sorting the good photographs for report making.
6	Feedback & Distribute the final material	Prof. Karmani Rajput, EED Prof. Seema Lad, MED	Prof. Jignesha Ahir, EED Prof. Sweta Jha, MED	Take feedback, Analyse the feedback, Generate graph. Send the final ppt or any material
7	Hosting and Stage Decoration		Prof. Hinal Surti, EED Prof. Komla Gamit, EED Prof. Palak Desai, MED Prof. Marry Florence Alamothu, MED	Rangoli Making, Stage Decoration, UTU song, Deep Pragatiya Innaugral and Validictory Speech, Managing chairs and water bottles.

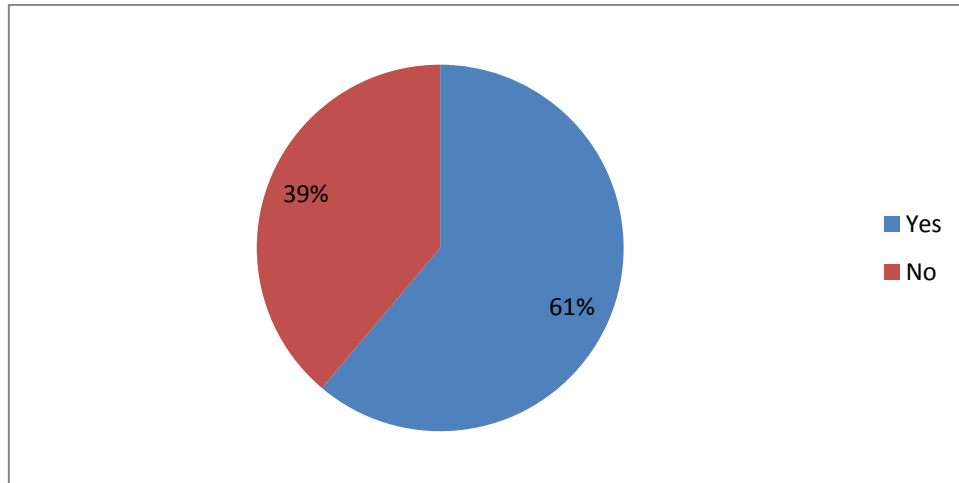
Feedback Analysis:

Online feedback was collected from the participants in last session of the STTP. The overall feedback of the STTP was very positive. Here are some of the feedbacks, which were given by participants.

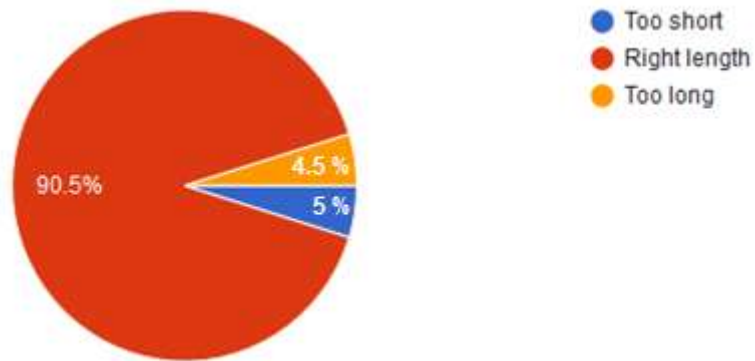
1) How was the venue arrangement and amenities?



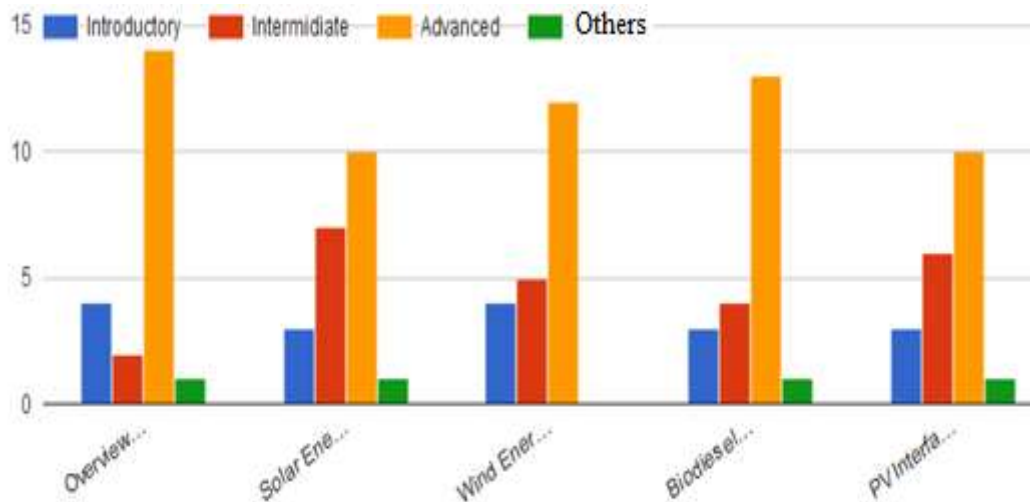
2) Would you like to attend such STTP in future?



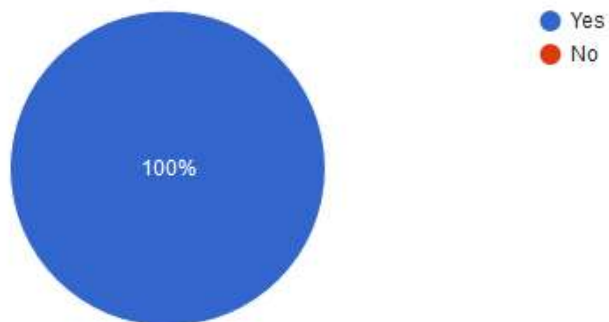
3) Was the duration appropriate for the STTP?



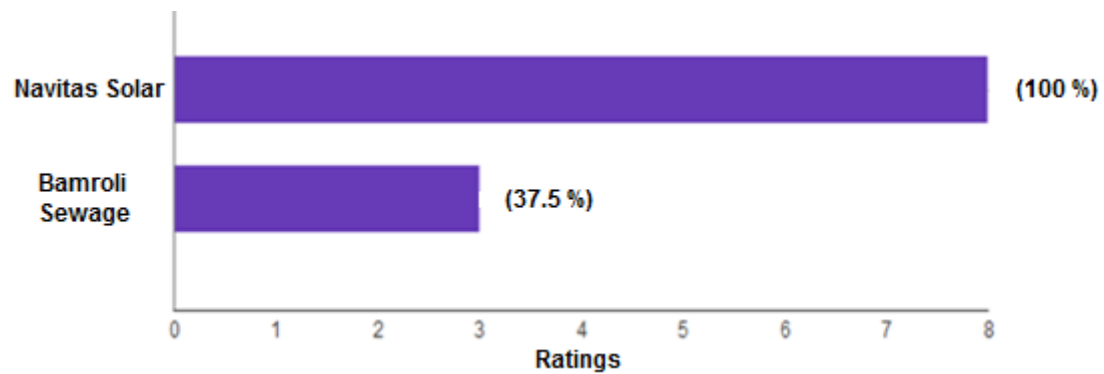
4) What was the depth of topic covered during STTP?



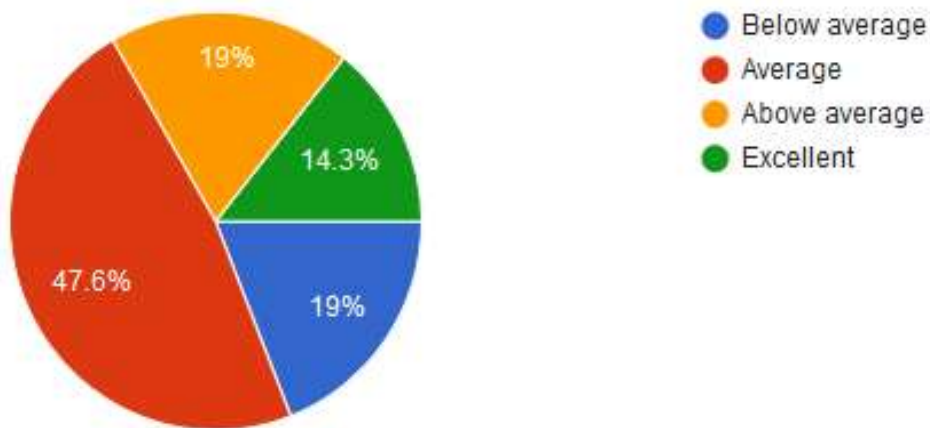
5) Is industrial visit a good approach during STTP?



6) Which industrial visit was the more informative for your future work?



7) How was the quality of food?



8) Suggestion regarding STTP

- The time of STTP should be thought of such that maximum faculties can attend it.
- STTP like FIRES is very necessary for growth and development of academic and technical career to remain updated for recent trends in engineering. It must be organised twice or thrice in a year.
- Better if you organise such session for UG student or first year M.Tech. Students who can use these session ideas into their projects instead of final year student.