One Week

Short Term Training Program on "Energy Conversion Systems: Fundamentals and Applications"

Energy Centre, MANIT Bhopal, May 26-30th, 2014

Ist Day (26-05-2014)

Inauguration of STTP on "Energy Conversion Systems: Fundamental and Applications" was held at 10:00 AM, Energy Centre, MANIT, Bhopal. Director Dr. Appu Kuttan K.K. Chief Guest of the function , H.O.D. of Chemical Department Dr. J. L. Bhagoria Guest of Honour, Dean S.W Dr. R. M. Sarviya Special Guest were present in the function. The STTP was inaugurated by Director who also congratulated and motivated the coordinators, faculty members for conducting this STTP on the very relevant topic.





Inauguration of STTP on 26.05.2014

The inaugural session of the seminar started with the welcome address by Dr. K. Sudhakar, Dr. Prashant Baredar, Coordinator of the STTP highlighted the details of STTP on "Energy Conversion Systems Fundamental and Application". It is a good platform to know energy conversion, to share policy initiatives and trends to accelerate development of collaborative R&D and technology transfers to India in the field of renewable.

A text book on "Advanced Internal Combustion Engines" authored by Dr. K. Sudhakar & Dr. Anil Kumar has been released by the Director in the presence of all delegates. This book covers the syllabus of all Indian Universities offering Internal Combustion Engines course in their UG/PG curriculum of Mechanical Engineering.



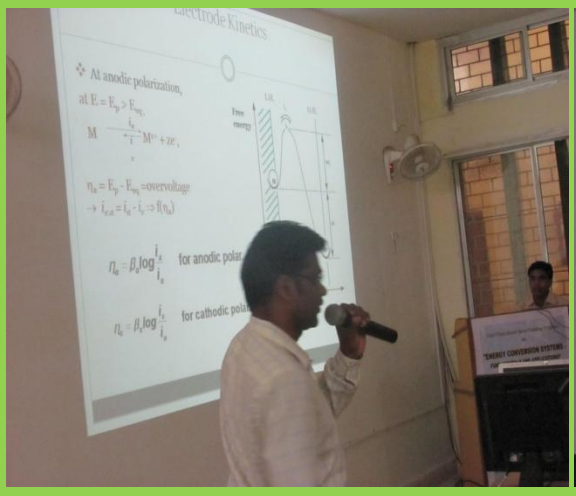


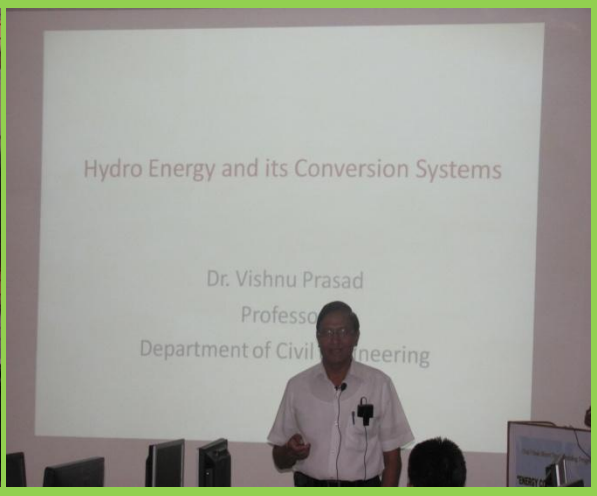
Releasing of Book titled "Advanced Internal Combustion Engine" on 26.05.2014

The inaugural function concluded by the vote of thanks by Dr. Anil Kumar, Coordinator of this STTP and expressed his indebtedness to Director for their encouragement and other guests for their gracious presence.

- **Dr. C. Sasikumar**, Assistant Professor, MSME, MANIT, Bhopal on the topic "Thin Film Technology for Solar Cell Development".

- **Dr. Vishnu Prasad,** Professor, Civil Engg, MANIT, Bhopal on the topic "Small Hydro Development".





Expert Lecture delivered by Dr. Sasi Kumar **Expert Lecture delivered by Dr. Vishnu Prasad**

Lab Session:

Dr. Anil Kumar, Asst. Professor, Energy Centre, MANIT, Bhopal guided the participants during the lab session. Here the participants were involved in demonstration of Solar air heater, Solar dryer, Solar stills and a 5 KW solar PV plant installed at the Energy Centre, MANIT, Bhopal.



Lab session conducted by Dr. Anil Kumar

IInd Day (27-05-2014)

Second day of this five day STTP also consisted of various lectures on the very relevant subjects and lab sessions.

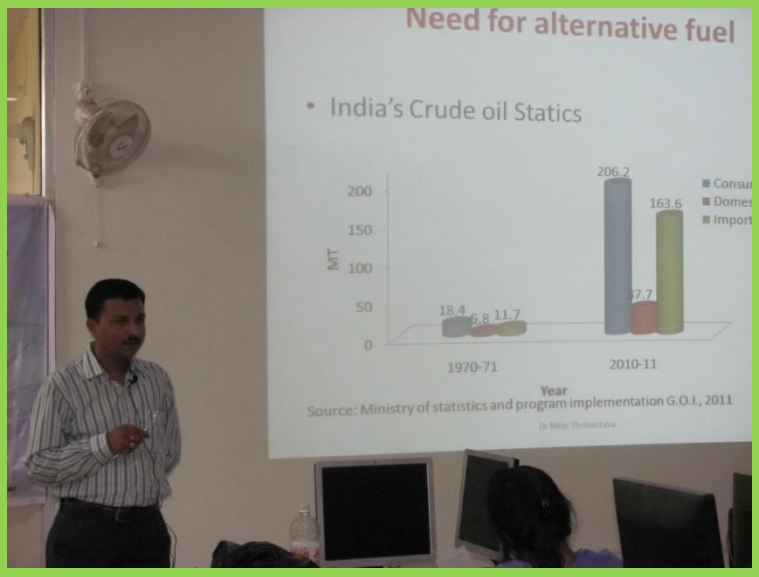
Expert Session:

1. Dr. Anil Kumar Dubey, Principal Scientist, CIAE, Bhopal gave a lecture on **"Biomass Gasification".**



Expert Lecture delivered by Dr. A. K. Dubey, Scientist, CIAE on 27.05.2014

2. Dr. R M Sirvaiya, Dean, SW, MANIT, Bhopal gave a lecture on **"Fresnel Collector".**
3. Dr. J L Bhagoria, Professor, Mechanical Engg., MANIT, Bhopal on Topic **"Solar Air Heater".**
4. Dr. Nitin Srivastava, Assistant Professor, RGPV, Bhopal gave an expert lecture on **"Bio fuels for IC Engines".**



Expert Lecture delivered by Dr. Nitin Srivastava, Assistant Professor on 27.05.2014

Lab Session:

Dr. K Sudhakar demonstrated Solar PV/T, Solar Dryers, Testing of Solar cells using Solar Module Analyzer and various Fuel cells to the participants. Also participants were involved in the practical related to biofuel production from non edible oils.



Lab Session conducted by Dr. K Sudhakar on 27-05-2014

IIIrd Day (28-05-2014)

Third day was the most delectable day for the participants as it involved expert lectures and visit to RGPV Energy Park, Bhopal and also local sightseeing in Bhopal. In the Energy Park the participants were given a demonstration of CO_2 Sequestration plants/Hybrid Energy Systems.





RGPV, Bhopal Energy Park visit on 28.05.2014

Expert Session:

Dr. V K Sethi from RGPV, Bhopal gave lecture on **"Carbon Capture Technology"**

IVth Day (29-05-2014)

The fourth day was full of knowledge and again it consists of expert lectures and lab sessions followed by discussion session.

Expert Session:

1. **Solar Desalination by Dr. Rahul Dev**, MNIT, Allahabad.
2. **Solar Air Conditioning by Dr. S.P.S. Rajput,** Professor, Mechanical Engg. MANIT, Bhopal



Discussion Session held on 29.5.2014

3. **Solar Radiation Assessment by Dr. Anil Kumar,** Assistant Professor, Energy Centre, MANIT, Bhopal
4. **Wind Energy Conversion by Dr. Prashant Baredar,** Associate Professor, Energy Centre, MANIT, Bhopal followed by a practical/ lab session on wind turbines and WPP headed by Dr. Prashant Baredar.

Vth Day (30-05-2014)

The last day of this five day STTP was a bit more relaxed and ended with only one expert lecture .

Expert Session:

1. **Wind Turbine Design by Dr. Siraj Ahmed**, Head and Professor, Mechanical Engg., MANIT, Bhopal.
2. **Thermal Modeling of Solar Dryer by Dr. Anil Kumar,** Assistant Professor, Energy Centre, MANIT, Bhopal.
3. **Carbon Sequestration** by Dr. K. Sudhakar, Assistant Professor, Energy Centre, MANIT, Bhopal

Valedictory Session:

A reference book titled "Renewable Energy Sources" authored by Vikas Khare, Dr. Prashant Baredar, Dr. Savita Nema was released during the valedictory program. These are followed by a feedback session and by this we got to know the areas where we can improve. Also after the Expert sessions, Director commenced the Valedictory Session where he distributed certificates to the participants and also shared his views on this very relevant subject.



Valedictory and Certificate distribution on 30.05.2014

More than 44 participants have attended the STTP across the country. Overall, there were 14 lecture sessions, 3 practical sessions and one Industrial visit during the entire duration of the STTP. Resource persons are from MANIT and National level research organization. In the nutshell, this 5 day STTP proved to be very important for the personnel related to the energy

sector. Also the event organization and contents were greatly appreciated by all the members who attended the program from all over the country.

This workshop was coordinated by Dr. Prashant Baredar, Dr. Anil Kumar and Dr. K. Sudhakar, of Energy Centre, MANIT.
