

*A One Week*

***ONLINE SHORT TERM COURSE (STC)***

***ON***

**“Energy Management for Economic Prosperity and Ecological Stability”**

**(September 21-26, 2020)**

**Sponsored by QIP, AICTE, Govt. of India**



Organized by;

Department of Mechanical Engineering

**Sant Longowal Institute of Engineering & Technology**

(Centrally Funded Technical Institute)

(Deemed to be University under Ministry of Education, Government of India)

Longowal, Sangrur-148106, Punjab

<http://www.sliet.ac.in>

## **ABOUT TRAINING PROGRAMME**

Energy plays pivotal role in economic development of a nation. As world is confronted with energy security and climate degradation, there is a need to respond with innovative knowledge-based solutions. Energy management includes planning and operation of energy production units and energy consumption end. The objective of this training program is to pave way for means and measures to conserve resources of energy, to make its eco-friendly use for development, safeguard environment and have savings in cost involved, while the users get uninterrupted access to use of energy. It is also closely related to environmental management, production management, logistics and other established business functions.

“Energy management is the proactive, organized and systematic coordination of procurement of raw materials and their handling, conversion into usable form of energy and subsequent distribution and utilization of energy to meet the requirements, taking into account of balance between environmental and economic objectives in serving society.

To improve efficiency in the various units at production ends of energy and appliances at user ends, there is need to identify the bottlenecks in the systems and devise means and measures to eliminate these from the system.

## **COURSE CONTENTS**

The focus of the program is to deal with Energy efficient practices in Industries by providing better understanding of sustainable energy management and technological practices. The following topics would be covered:

- General Aspects of Energy Management.
- Alternative fuels/biofuels
- Solar energy
- Energy Efficiency in Thermal Utilities
- CO<sub>2</sub> mitigation and climate change
- Energy auditing.
- Energy Efficiency in Electrical Utilities.
- Energy Performance Assessment for Equipment and Utility System
- Laboratory Session

**Energy auditors from industry will share their knowledge and experience. This course will be meaningful for engineers, aspiring to undertake the assignment of energy auditing in industry.**

### **ABOUT THE INSTITUTE**

Sant Longowal Institute of Engineering and Technology (SLIET) is a centrally funded Deemed to be university set up by Ministry of Education, Govt. of India with an aim to achieve technological excellence through innovation. It caters to the technical manpower requirement at various levels by adopting a new concept of multi-entry, multi-exit modular pattern based technical education with emphasis on skill development and practical training. It offers Certificate, Diploma, Degree, PG (M. Tech, M.Sc., M.B.A) and Ph. D. programs in various disciplines of Engineering, Science and Technology.

### **ABOUT THE DEPARTMENT**

Department of Mechanical Engineering is the largest department of the Institute. The department offers number of programs at different levels, Certificate, Diploma, Degree and PG programs. A number of Ph.D. scholars are pursuing Ph. D. in diversified areas.

In addition to regular teaching, the faculty is engaged in active research work in their respective fields of interest covering different areas such as Bioenergy & Alternative fuels, precision metrology, composite materials, signal processing, optimization, modeling and simulation, CAD, FEA, welding technology, etc. and have undertaken many sponsored projects. The department is regularly organizing conferences/symposia and MHRD/AICTE/ISTE sponsored training programs.

### **LOCATION OF THE INSTITUTE**

The Institute is connected by road with Sangrur (20 km), Patiala (80 km), Sunam (17 km), Ludhiana (100 km), Chandigarh/Ambala (150 km), Delhi (320 km). Dhuri, Sangrur and Ambala, are well connected to important places in India by rail. The nearest airport is Chandigarh.

### **ELIGIBILITY FOR PARTICIPATION**

The training program is open to faculty/ teachers and research scholars of AICTE recognized degree level Engineering Colleges/Institutions and Technical Universities/Deemed Universities. As the training program is interdisciplinary in nature, faculty members of mechanical, chemical,

electrical, instrumentation, environment, science and management disciplines can attend the programme. Industry personnel and research scholars can also attend this training programme.

## **REGISTRATION**

The eligible and interested faculty members from academia and industry are required to register themselves online for the course on the link available at [www.sliet.ac.in](http://www.sliet.ac.in) or can scan the QR code available in information brochure. They must send the duly filled registration form recommended by competent authority through mail and hard copy by post to the organizer of the course so as it reaches on or before last date of registration. Confirmation of eligible candidates will be on first come first serve basis.

## **COURSE FEE/REGISTRATION FEE**

- Registration Fee for Faculty: NIL
- Registration Fee for Research Scholar: NIL
- Course & Registration Fee for Delegates from Industry: NIL

## **IMPORTANT DATES**

Last date for receiving application form:

**September 15th, 2020**

Notification of selected participants:

**September 17th, 2020**

*\*Participation stands cancelled if confirmation email is not received by the specified date. Seats, if so vacant, will be offered to other eligible applicant faculty.*

## **ADDRESS FOR CORRESPONDCE**

COORDINATOR-STC (EMEPES)

DEPARTMENT OF MECHANICAL ENGINEERING

Sant Longowal Institute of Engineering and Technology, Longowal-148106 (Punjab)

Mobile: +91-94174-60331, +91-9417466741

E-mail: [rkyd@sliet.ac.in](mailto:rkyd@sliet.ac.in), [indrajsliet@gmail.com](mailto:indrajsliet@gmail.com)



**Scan here for registration**

**CHIEF PATRON**

**Prof. (Dr.) Shailendra Jain**

Director

**PATRON**

**Prof. (Dr.) Ajat Shatru Arora**

Dean(Academics)

**CHAIRMAN**

**Dr. Rajesh Kumar**

Professor & HOD

**COORDINATORS**

**Dr. Raj Kumar Yadav, Professor**

**Dr. Indraj Singh, Associate Professor**

*A ONLINE SHORT TERM COURSE*

*ON*

**Energy Management for Economic Prosperity and Ecological Stability**

**(September 21-26, 2020)**

**Registration Form**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Organization: \_\_\_\_\_

Whether your institute AICTE approved? : \_\_\_\_\_

Address for communication: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Mobile No.: \_\_\_\_\_

E-mail: \_\_\_\_\_

Highest qualification: \_\_\_\_\_

Experience: \_\_\_\_\_

Signature of the applicant: \_\_\_\_\_

Date: \_\_\_\_\_

Signature and seal of forwarding authority  
(HOD/Registrar/ Director)

**A One Week ONLINE SHORT TERM COURSE (STC) ON**

**“Energy Management for Economic Prosperity and Ecological Stability”  
(September 21-26, 2020)**

**Tentative Schedule**

Days /date	Timing 10:00-11:00	Timing (11: - 12:00 )	Timing (16:00 -17:00 )	Timing (17:00 -18:00 )
21-09-2020	Keynote Address on Energy by Chief Guest	Green House Gas Er.G. Krishanan Energy Auditor	Efficient use of Electrical Lighting Er. Satvinder Singh CPWD, Engineers (Retd.) Ludhiana, Certified Energy Auditor	Audit in Power Industry Er. Atar Singh, Certified Energy Auditor Ex-director National Power Training Institute
22-09-2020	Optimization and Predictive Learning for Energy Management Dr. Rituparn Dutta Instructor and Researcher in School of Computing USA	Efficient use of Pumps and Pumping System Dr. J S Aujla Certified Energy Auditor General Manager E ESL,	Energy Audit in Sugar Industry Dr. RK Yadav Additional General Manager, Pragati Power Corporation Limited Certified Energy Auditor	Audit in Cement Industry Er. Atar Singh, Certified Energy Auditor Ex-director National Power Training Institute
23-09-2020	Energy Audit in Foundry Industry Er. Puneet Hegde	Energy Audit in Textile Industry, Er. Sushil Kumar Sharma,	Prospectus of Solar Energy in Process Heat Application Industry Dr. Anil Kumar, Professor, DTU, Delhi	Energy Efficiency in Electrical Motor and Transformer. Prof. Sanjeev Singh MNIT Bhopal
24-09-2020	Energy audit of a commercial building Er. Satvinder Singh CPWD, Engineers (Retd.) Ludhiana, Certified Energy Auditor	HVAC, Er. Mukund V Bhandare Energy Auditor	Roof top PV solar Installation, Dr. C.S Ajad  Certified Energy Auditor, BSNL.	General Aspects of Energy Management/Audit. Prof. Mandeep Singh Certified Energy Auditor Thapar Institute of Engineering and Technology, Patiala
25-09-2020	Radiant Cooling Er.Prateek Srivastava	NET ZERO CARBON Mr. Kushagra Juneja Managing Partner, M/S Design 2occupacy Services LLP	HVAC System and Building Commissioning Mr.Ankur Mantri M/SDesign 2occupacy Services LLP	ECBC & Green Buildings Mr. Money Khanna PEDA Chandigarh
26-09-2020	Energy saving in Rolling Industry, Energy storage,  Prof MK Aware NIT Nagpur	Audit in Paper Industry Er. Bali Singh, Certified Energy Auditor Director, Namdhari Eco Energies Pvt Ltd	Online Demonstration of working equipment.	Valedictory function

**Approval of participants for e-certificate EMEEPES -2020 (21-26 September, 2020)**

Sr. No.	Name	Designation	Organisation	AICTE Approved ?	Email address	Mobile Number	Date of birth	Address for Communication	Highest Qualification	Reference No	Remarks on the basis of attendance
1	Dr. Deepak Choudary	Professor	ABES EC	Yes	<a href="mailto:deepcd4133@gmail.com">deepcd4133@gmail.com</a>	8076765290	24-10-1975	ABES EC	Ph.D.	SLIET/ME/EMEPES - 2020/01	Recommended
2	Lokesh Kumar	AP	AKU Patna	Yes	<a href="mailto:ranjanped@gmail.com">ranjanped@gmail.com</a>	8959651107	05-09-1985	Patna Bihar	Mtech	SLIET/ME/EMEPES - 2020/02	Recommended
3	Vinit Kumar Gupta	AP	AJET , Jaipur	Yes	<a href="mailto:vinitgpt@gmail.com">vinitgpt@gmail.com</a>	9587828090	27-03-1988	Apartment Sector 28 Pratap Nagar Jaipur	M.tech	SLIET/ME/EMEPES - 2020/03	Recommended
4	Hartaj Singh	AP	Arni University, H.P	Yes	<a href="mailto:hartajsinghae@gmail.com">hartajsinghae@gmail.com</a>	6005185136	05-02-1979	Indora, District: Kangra	M.Tech	SLIET/ME/EMEPES - 2020/04	Recommended
5	Dr. Rajeev Yadav	Professor	Aiets Jaipur	Yes	<a href="mailto:yadvrajeev6@gmail.com">yadvrajeev6@gmail.com</a>	9416133666	12-06-1976	Rewari Haryana India	Ph.D.	SLIET/ME/EMEPES - 2020/05	Recommended
6	Dr. Jatinder Garg	ASP	Bhsbiet, Lehragaga	Yes	<a href="mailto:jatindergarg@yahoo.com">jatindergarg@yahoo.com</a>	9501956000	23-07-2020	Hoshiarpur (Punjab)	Ph.D.	SLIET/ME/EMEPES - 2020/06	Recommended
7	Kuldeep Kumar Singh	AP	Biet Jhansi	Yes	<a href="mailto:kditiq@gmail.com">kditiq@gmail.com</a>	7889177307	30-04-1990	Biet Jhansi	M. Tech.	SLIET/ME/EMEPES - 2020/07	Recommended
8	Sachichda Nand	AP	Buddha Institute Of Technology, UP	Yes	<a href="mailto:sachchidanand390@bit.ac.in">sachchidanand390@bit.ac.in</a>	9680462995	01-12-1987	Buddha Institute Of Technology, UP	M.Tech	SLIET/ME/EMEPES - 2020/08	Recommended
9	Sachit Vardhan	ASP	Ct University	Yes	<a href="mailto:sachitvardhan@gmail.com">sachitvardhan@gmail.com</a>	9417644433	14-06-1987	Ct University	PhD	SLIET/ME/EMEPES - 2020/09	Recommended
10	Sukhdeep Singh	AP	Ct University	Yes	<a href="mailto:erdeep9109@gmail.com">erdeep9109@gmail.com</a>	9463960899	30-09-1900	Ct University	PhD pursuing	SLIET/ME/EMEPES - 2020/10	Recommended
11	Kumar Ratnakar	AP	Dayalbagh Educational Institute	Yes	<a href="mailto:kumar.ratnakar@dei.ac.in">kumar.ratnakar@dei.ac.in</a>	7895277397	17-02-1979	Dayalbagh Educational Institute	M.Tech.	SLIET/ME/EMEPES - 2020/11	Recommended
12	Dr. Anil Kumar	ASP	DTU, Delhi	Yes	<a href="mailto:dranilk76@gmail.com">dranilk76@gmail.com</a>	9425680448	29-08-1976	DTU, Delhi	Ph.D	SLIET/ME/EMEPES - 2020/12	Recommended
13	Sanjeev Gupta	ASP	GCET, Jammu	Yes	<a href="mailto:fdpsanjeevpreethi@gmail.com">fdpsanjeevpreethi@gmail.com</a>	9906088394	07-09-1969	F288 Panjtirhi Jammu	Mtech	SLIET/ME/EMEPES - 2020/13	Recommended
14	Shiv Lal	Principal	GEC, Banswara	Yes	<a href="mailto:shivlal1@gmail.com">shivlal1@gmail.com</a>	9636855553	01-12-1972	Behind Mayur Mill, Banswara	PhD	SLIET/ME/EMEPES - 2020/14	Recommended
15	Raj Vardhan	AP	Hcst, Mathura	Yes	<a href="mailto:raj.vardhan411ajpha@gmail.com">raj.vardhan411ajpha@gmail.com</a>	7906215124	07-08-1987	Hcst, Mathura	M Tech	SLIET/ME/EMEPES - 2020/15	Recommended
16	Mahesh Kumar Dhakar	AP	Hcst, Mathura	Yes	<a href="mailto:maheshdhakaar@gmail.com">maheshdhakaar@gmail.com</a>	7906902320	10-01-1984	Hcst, Mathura	M.Tech.	SLIET/ME/EMEPES - 2020/16	Recommended
17	Dinesh Kumar	AP	Hcst, Mathura	Yes	<a href="mailto:mskumar12.2009@gmail.com">mskumar12.2009@gmail.com</a>	9557676702	15-04-1988	Hcst, Mathura	M.Tech	SLIET/ME/EMEPES - 2020/17	Recommended
18	Dr Puneet Mangla	ASP	Hcst, Mathura	Yes	<a href="mailto:puneetmangla73@gmail.com">puneetmangla73@gmail.com</a>	9568006050	03-08-1973	Hcst, Mathura	PhD	SLIET/ME/EMEPES - 2020/18	Recommended
19	Anand Poras	AP	Hcst, Mathura	Yes	<a href="mailto:anandsingh29@gmail.com">anandsingh29@gmail.com</a>	9412990385	29-05-1974	Hcst, Mathura	M. Tech.	SLIET/ME/EMEPES - 2020/19	Recommended
20	Qazi Saeed Ahmad	AP	Integral University Lucknow	Yes	<a href="mailto:qsahmad@iul.ac.in">qsahmad@iul.ac.in</a>	8354048492	01-07-1984	Ashok Nagar Lucknow	M.tech.	SLIET/ME/EMEPES - 2020/20	Recommended
21	Gurcharan Singh	AP	Kcet, Amritsar	Yes	<a href="mailto:gstalwara@gmail.com">gstalwara@gmail.com</a>	8283801398	26-06-1984	Dashmesh Avenue Gate No 1, Amritsar	M.Tech	SLIET/ME/EMEPES - 2020/21	Recommended
22	Dr Manvijay Singh	Professor	Liet Alwar	Yes	<a href="mailto:singhmanvijay@gmail.com">singhmanvijay@gmail.com</a>	9460590059	16-04-1975	Fiat No 2020 Liet Campus Chkani Alwar	Ph.D	SLIET/ME/EMEPES - 2020/22	Recommended
23	Prachi Mohite	AP	Pesce, Aurangabad.	Yes	<a href="mailto:prach272010@gmail.com">prach272010@gmail.com</a>	7875192221	27-10-1976	Pesce, Aurangabad.	ME	SLIET/ME/EMEPES - 2020/23	Recommended



24	Gajender	AP	Site, Meerut	Yes	<a href="mailto:gbansalengineer@gmail.com">gbansalengineer@gmail.com</a>	7982762670	25-10-1987	Site, Meerut	M.Tech	SLIET/ME/EMEPES - 2020/26	Recommended
25	Anil Kumar Yadav	ASP	Site, Meerut	Yes	<a href="mailto:anil.kumar16agra@gmail.com">anil.kumar16agra@gmail.com</a>	9639538698	24-07-1975	Site, Meerut	M.Tech	SLIET/ME/EMEPES - 2020/27	Recommended
26	Jaspal Singh Gill	ASP	Sliet Longowal	Yes	<a href="mailto:jsgillsliet@gmail.com">jsgillsliet@gmail.com</a>	9417270370	27-01-1972	Sliet, Longowal	PhD	SLIET/ME/EMEPES - 2020/31	Recommended
27	Anshuka Bansal	ASP	Sliet Longowal	Yes	<a href="mailto:anshuka3@gmail.com">anshuka3@gmail.com</a>	9815724373	19-04-1971	Sliet, Longowal	M.Tech	SLIET/ME/EMEPES - 2020/32	Recommended
28	Dr. Manoj Goyal	ASP	Sliet Longowal	Yes	<a href="mailto:manojliet@yahoo.com">manojliet@yahoo.com</a>	9815980322	13-12-1964	Sliet, Longowal	Ph.D	SLIET/ME/EMEPES - 2020/33	Recommended
29	Sc Verma	ASP	Sliet Longowal	Yes	<a href="mailto:scvermaran@gmail.com">scvermaran@gmail.com</a>	9417339750	01-05-1965	Sliet, Longowal	M.tech.	SLIET/ME/EMEPES - 2020/34	Recommended
30	Rakesh Kumar	ASP	Sliet Longowal	Yes	<a href="mailto:rakeshliet@yahoo.co.in">rakeshliet@yahoo.co.in</a>	9417160644	06-04-1965	Sliet, Longowal	Ph.D	SLIET/ME/EMEPES - 2020/35	Recommended
31	Dr. Anil Kumar Singla	ASP	Sliet Longowal	Yes	<a href="mailto:anilsingla@liet.ac.in">anilsingla@liet.ac.in</a>	9781403550	16-12-1970	Sliet, Longowal	Ph.D.	SLIET/ME/EMEPES - 2020/36	Recommended
32	Sunil Kumar	AP	Sliet Longowal	Yes	<a href="mailto:sunil_thappa@yahoo.com">sunil_thappa@yahoo.com</a>	9855288502	26-10-1979	Sliet, Longowal	PhD	SLIET/ME/EMEPES - 2020/37	Recommended
33	Dr. Mohd Majid	AP	Sliet Longowal	Yes	<a href="mailto:mohdmajid_2004@rediffmail.com">mohdmajid_2004@rediffmail.com</a>	9417207745	09-12-1973	Sliet, Longowal	Ph.D	SLIET/ME/EMEPES - 2020/38	Recommended
34	Dr. Hemant Kumar	AP	Sliet Longowal	Yes	<a href="mailto:hemantk1331@gmail.com">hemantk1331@gmail.com</a>	6239912926	18-08-1971	Sliet, Longowal	Ph.D	SLIET/ME/EMEPES - 2020/39	Recommended
35	Rohan Kumar	(G)AP	Sliet Longowal	Yes	<a href="mailto:rohan.kumarme@gmail.com">rohan.kumarme@gmail.com</a>	9560243525	07-06-1993	Sliet, Longowal	Mtech	SLIET/ME/EMEPES - 2020/40	Recommended
36	Anil Kumar	(G)AP	Sliet, Longowal	Yes	<a href="mailto:anilchaudharyaec03@gmail.com">anilchaudharyaec03@gmail.com</a>	8427173309	01-03-1992	Sliet, Longowal	M. Tech	SLIET/ME/EMEPES - 2020/41	Recommended
37	Praveen Kumar	RS	Sliet Longowal	Yes	<a href="mailto:praveen30201@gmail.com">praveen30201@gmail.com</a>	9416530201	15-12-1986	Sliet, Longowal	M.Tech	SLIET/ME/EMEPES - 2020/42	Recommended
38	Sourabh Vashishth	RS	Sliet Longowal	Yes	<a href="mailto:vashishth198@gmail.com">vashishth198@gmail.com</a>	9041905514	05-12-1994	Sliet, Longowal	M tech	SLIET/ME/EMEPES - 2020/43	Recommended
39	Sonu Ram	RS	Sliet Longowal	Yes	<a href="mailto:snrm803@gmail.com">snrm803@gmail.com</a>	9799450537	15-10-1992	Sliet, Longowal	M.tech	SLIET/ME/EMEPES - 2020/44	Recommended
40	Sumit Saini	RS	Sliet Longowal	Yes	<a href="mailto:sumitmeghraj@gmail.com">sumitmeghraj@gmail.com</a>	9813379344	23-07-1991	Sliet, Longowal	M Tech	SLIET/ME/EMEPES - 2020/45	Recommended
41	Akash Sood	RS	Sliet Longowal	Yes	<a href="mailto:akku.sood@live.com">akku.sood@live.com</a>	9179296775	02-04-1991	Sliet, Longowal	M Tech	SLIET/ME/EMEPES - 2020/46	Recommended
42	Anmol Singh Verma	RS	Sliet Longowal	Yes	<a href="mailto:anmolrajput802@gmail.com">anmolrajput802@gmail.com</a>	8054303977	08-08-1993	Sliet, Longowal	M-Tech	SLIET/ME/EMEPES - 2020/47	Recommended
43	Mohd Aaqib Sheikh	RS	Sliet Longowal	Yes	<a href="mailto:aaqibnisar1992@gmail.com">aaqibnisar1992@gmail.com</a>	7889466628	07-04-1992	Sliet, Longowal	M Tech	SLIET/ME/EMEPES - 2020/48	Recommended
44	Pawan Kushwaha	M.Tech (S)	Sliet Longowal	Yes	<a href="mailto:pawankushwah070@gmail.com">pawankushwah070@gmail.com</a>	9557790684	08-09-1994	Sliet, Longowal	Mtech	SLIET/ME/EMEPES - 2020/49	Recommended
45	Shivanshu Kumar	M.Tech (S)	Sliet Longowal	Yes	<a href="mailto:shivanshuk2@gmail.com">shivanshuk2@gmail.com</a>	9006935051	10-12-1995	Sliet, Longowal	B.tech	SLIET/ME/EMEPES - 2020/50	Recommended

**Subject: Information regarding one week online short term course organised by Department of Mechanical Engineering on “Energy Management for Economic Prosperity and Ecological Stability – (EMEPES-2020)”, sponsored under QIP by AICTE, New Delhi (Sept 21-26, 2020).**



Department of Mechanical Engineering, SLIET organised one week online short term course on “Energy Management for Economic Prosperity and Ecological Stability – (EMEPES-2020)”, sponsored under QIP by AICTE, New Delhi during the period on and from Sept 21-26, 2020 and Coordinated by Dr. RK Yadav & Dr. Indraj Singh under chairmanship of Prof. Rajesh Kumar, HOD (Mechanical Engineering).

In the inaugural function, Prof. Rajesh Kumar Head of Mechanical Engineering Department and Chairman of EMEPES-2020 welcomed the participants. Prof. A S Arora Dean Academic and Coordinator of QIP, SLIET addressed the participant. Prof. Shailender Jain, Director and Chief Patron of EMEPES-2020 addressed and emphasised the relevance of the course dealing with energy ecology and economy in the present scenario. Sh.MP Singh, Director, Punjab Energy Development Agency, Chandigarh was Chief Guest of the function and delivered keynote address.

To participate in above STC online/offline application were invited from faculty members/Research Scholar/Industry persons from all over India. A good response could be gauged from the facts that around 100 applications from Engineering Institutes, Industrial organisations were received. Out of these 66 applicant were short listed and 50 Participant from different state of country i.e. Bihar, Uttar Pradesh, Delhi, Haryana, Rajasthan, Himachal Pradesh, and Jammu & Kashmir participated in the STC.

Eminent speakers like Sh.MP Singh Director PEDDA Chandigarh, Dr. R Harikumar, Director (EMC), Government of Kerala, Er. Atar Singh Ex. Director NPTI, etc delivered expert talks on the theme of the STC. Certified Energy auditors working in Industries were invited to share their experience through expert talks on energy covering audit in Sugar, Foundry, Cement, Textile, Power Plant and Paper Industry. Green House Gas Emission, Energy Efficiency in Electrical Motor and Transformer, HVAC System and Building Commissioning, Efficient use of Pumps and Pumping System were the other main topics covered in STC.

In the valedictory function Dr. R Harikumar, Director of Energy Management Centre (EMC), Government of Kerala was chief guest and addressed participants and appreciated the efforts put in by the organisers of the Department for growing awareness to meet the challenges lying ahead in the form of Energy crisis affecting development of a nation and above all humanity.