

# Department of Renewable Energy

(Formerly known as Centre for Energy and Environment)



## Rajasthan Technical University, Kota

Rawatbhata Road, Kota Rajasthan, India

### Annual Report-2018

(From January 01, 2018 to December 31, 2018)



Grid Connected Rooftop Solar PV Power Plant at Department of Renewable Energy, RTU Kota.



## I. Administrative Activities During the Year 2018:

1. Prof. Sanjeev Mishra took the charge as Head of Department of Renewable Energy, Rajasthan Technical University, Kota on June 30th, 2018.
2. Prof. K.V.S. Rao retired on June 30<sup>th</sup>, 2018 from the post of Head, Department of Renewable Energy, Rajasthan Technical University, Kota.
3. Mr. Bharat Kumar Saxena and Mr. Akshay Lele were appointed as guest faculty for the academic session 2018-19.

## II. Activities of Faculty Members:

- (a) Dr. Sanjeev Mishra, *Professor & Head*, Department of Renewable Energy, RTU, Kota
  - i. Supervised two Ph.D. and one M.Tech. students, leading to receive their degrees.
  - ii. Attended AICTE recognized one-week short term course on *Modeling & Simulation using MATLAB through ICT* organized by National Institute of Technical Teachers Training and Research, Chandigarh and conducted by Mechanical Engineering Department RTU, Kota from 22<sup>nd</sup> to 26<sup>th</sup> Jan, 2018 through ICT.
  - iii. Attended AICTE recognized one-week short term course on *Soft computing techniques using MATLAB* organized by National Institute of Technical Teachers Training and Research, Chandigarh and conducted by Electrical Engineering Department RTU, Kota from 05<sup>th</sup> to 09<sup>th</sup> March, 2018 through ICT.
  - iv. Participated as Chief Guest in inaugural session and Key note speaker in the National Conference on Recent Advancement in Mechanical Engineering (RAME-2018) at Regional College for Education Research & Technology, Jaipur during March 16-17, 2018.
  - v. Attended one day seminar on *3D Printing Technology* held by US Institute of 3D Technology, California on August 8<sup>th</sup>, 2018 at Rajasthan Technical University, Kota.
  - vi. Attended one day Skill Development Workshop on *Recent Advancements on 3D Printing Technology* held by US Institute of 3D Technology, California on August 9<sup>th</sup>, 2018 at Rajasthan Technical University, Kota.
  - vii. Delivered Expert Lecture on the theme “*Research Methodology*” on August 20, 2018 at Gurukul Institute of Engineering and Technology, Kota in Faculty Development Programme.
  - viii. Attended AICTE recognized one-week short term course on *Optimization using MATLAB through ICT* organized by National Institute of Technical Teachers Training and Research, Chandigarh and conducted by Mechanical Engineering Department RTU, Kota from 27<sup>th</sup> to 31<sup>st</sup> August, 2018 through ICT.
  - ix. Co-authored one journal paper along with Mr. Shobi Bagga and Mr. Jamil Akhtar. The title of the paper is “Influence of porosity on the properties of nanostructured tin oxide thin film”. The paper was published on September 7<sup>th</sup>, 2018 in *Materials Research Express* journal of IOP Publishing.
  - x. Delivered Expert Lecture on the theme “*Research Methodology-The problem Identification*” on 14<sup>th</sup> October 2018 at Career Point University, Kota.
  - xi. Attended AICTE recognized one-week short term course on *Tools for scientific research in engineering & science through ICT* organized by National Institute of Technical Teachers Training and Research, Chandigarh and conducted by Electrical Engineering Department RTU, Kota from 12<sup>th</sup> to 16<sup>th</sup> November, 2018 through ICT.
  - xii. Co-authored one conference paper along with Mr. Shobi Bagga and Mr. Jamil Akhtar. The title of the paper is “Effect of substrate temperature on the morphology of nanostructured zinc oxide thin film”. The paper was presented at International Conference on Advanced Materials, Energy & Environmental Sustainability (ICAMEES-2018) held at University of Petroleum and Energy Studies, Dehradun, Uttarakhand during December 14-15, 2018.
  - xiii. Chief Guest of the Inaugural Function at *International Conference on Recent Innovation in Engineering, Technology, Management and Research* held at Bal Krishna Institute of Technology, Kota on 24<sup>th</sup> December 2018.
  - xiv. Participated as Session Chair in *International Conference on Recent Innovation in Engineering, Technology, Management and Research* held at Bal Krishna Institute of Technology, Kota during 24<sup>th</sup> – 25<sup>th</sup> December 2018.





(b) Mr. Bharat Kumar Saxena, *Guest Faculty*, Department of Renewable Energy, RTU, Kota

- i. Co-authored two research publications and one poster paper presentation.
- ii. Attended two days *Energy Meet 2018: National Seminar on Sustainable Solutions for Energy and Environment* held at Department of Pure and Applied Physics, University of Kota, Kota, Rajasthan during August 6-7, 2018.
- iii. Attended one week faculty development programme on *Control and Integration Techniques for Renewable Energy Systems* during November 21-25, 2018 at RTU, Kota

(c) Mr. Akshay Lele, *Guest Faculty*, Department of Renewable Energy, RTU, Kota

- i. Attended two days *International Workshop on Renewable Energy Waste and Recycling* held at Department of Pure and Applied Physics, University of Kota, Kota, Rajasthan during December 3-4, 2018.

### III. Academic Activities during the Year 2018:

#### (A) Research Papers Presented in Conferences:

S. No.	Conference Details	Paper Title	Authors
1.	International Conference on Green Buildings & Sustainable Engineering (GBSE 2018) held at Rajagiri School of Engineering & Technology, Kochi, Kerala from 24th to 25th January, 2018. This paper was selected as Fourth Best paper of the conference. Proceedings of GBSE were published in Springer Transactions in Civil and Environmental Engineering.	Energy Savings in a Building at Different Climatic Zones of India by using Insulating Materials.	Ms. Yogita Sharma, Mr. Bharat Kumar Saxena, and Dr. K.V.S. Rao
2.	International Conference on Green Buildings & Sustainable Engineering (GBSE 2018) held at Rajagiri School of Engineering & Technology, Kochi, Kerala from 24th to 25th January, 2018. Proceedings of GBSE were published in Springer Transactions in Civil and Environmental Engineering.	Techno-Economic Analysis of a Grid-Connected Hybrid Solar-Wind Energy System.	Ms. Monika Agrawal, Mr. Bharat Kumar Saxena, and Dr. K.V.S. Rao
3.	IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS) held at Maulana Azad National Institute of Technology, Bhopal (M.P.) from 24th to 25th February, 2018.	Comparison of Lipid Extraction from Algae ( <i>Chlorella</i> Species) using Wet Lipid Extraction Procedure and Bligh and Dry Method.	Ms. Seema Saroya, Dr. Vikas Bansal, Mr. Ravi Gupta, Mr. A.S. Mathur, and Ms. Preeti Mehta
4.	IEEE International Conference on Power, Energy, Environment, and Intelligent Control (PEEIC2018) held at G.L. Bajaj Institute of Technology & Management, Greater Noida (U.P.) from 13th to 14th April, 2018.	Sustainable Third Generation Microalgae based Biodiesel Production: Challenges and Opportunities.	Ms. Seema Saroya and Dr. Vikas Bansal
5.	3rd International Conference on Innovative Applications of Computational Intelligence on Power, Energy, and Control with their impact on Humanity (CIPECH 18) held at KIET Group of Institutions, Ghaziabad, U.P. from 1st to 2nd November, 2018.	Estimation of Energy Production of Grid Connected Rooftop Solar Photovoltaic System at Nagar Nigam Kota, Rajasthan.	Ms. Gauranshi Saxena and Dr. Lata Gidwani

6.	3rd International Conference on Innovative Applications of Computational Intelligence on Power, Energy, and Control with their impact on Humanity (CIPECH 18) held at KIET Group of Institutions, Ghaziabad, U.P. from 1st to 2nd November, 2018.	Estimation of Weibull Distribution Parameters and Wind Power Density for Wind Farm Site at Akal at Jaisalmer in Rajasthan.	Mr. Mohammad Mohsin and Dr. K.V.S. Rao
7.	3rd International Conference on Innovative Applications of Computational Intelligence on Power, Energy, and Control with their impact on Humanity (CIPECH 18) held at KIET Group of Institutions, Ghaziabad, U.P. from 1st to 2nd November, 2018.	Levelized Cost of Electricity with Degradation of 10 MW Grid-Connected Photovoltaic Power Plant in Kalwakurthy, India.	Ms.Radhy Rani Nagar and Dr. Lata Gidwani
8.	3rd International Conference on Innovative Applications of Computational Intelligence on Power, Energy, and Control with their impact on Humanity (CIPECH 18) held at KIET Group of Institutions, Ghaziabad, U.P. from 1st to 2nd November, 2018.	Simulation of Converter Topologies for PV Grid Connected system.	Mr. Swapnil Singh and Dr. Mahendra Lalwani
9.	3rd International Conference on Innovative Applications of Computational Intelligence on Power, Energy, and Control with their impact on Humanity (CIPECH 18) held at KIET Group of Institutions, Ghaziabad, U.P. from 1st to 2nd November, 2018.	Solar Energy Potential of the State of Rajasthan in India.	Mr. Vineet Kumar Mahaver and Dr. K.V.S. Rao
10.	3rd International Conference on Innovative Applications of Computational Intelligence on Power, Energy, and Control with their impact on Humanity (CIPECH 18) held at KIET Group of Institutions, Ghaziabad, U.P. from 1st to 2nd November, 2018.	Performance analysis of 25 MW grid connected solar photovoltaic plant in Gujarat, India.	Mr. Sandeep Singh Bhullar and Dr. Mahendra Lalwani



Fig. 1. GBSE Kochi conference.



Fig. 2. MANIT, Bhopal conference.



Fig. 3. Greater Noida conference.





## (B) Research Papers Published in Journals:

S. No.	Name of the Journal	Title of the Paper	Authors
1.	<b>Journal of the Institution of Engineers (India): Series C</b> doi: <a href="https://doi.org/10.1007/s40032-018-0464-4">https://doi.org/10.1007/s40032-018-0464-4</a> Online Date: 23 May 2018, Springer, India	Multi-objective Optimization of Solar Irradiance and Variance at Pertinent Inclination Angles.	Mr. Dhanesh Jain and Dr. Mahendra Lalwani

## (C) Poster Papers Presented:

S. No.	Conference Details	Title of the Paper	Authors
1.	Energy Meet 2018: National Seminar on Sustainable Solutions for Energy and Environment held at Department of Pure and Applied Physics, University of Kota, Kota, Rajasthan during August 6-7, 2018.	Simulation of 1 MW Solar PV Power Plant at Kota, Rajasthan.	Dr. Sanjeev Mishra, Mr. Bharat Kumar Saxena, Mr. Pushpendra Nagar, Mr. Yash Sharma, and Mr. Naman Garg
2.	International Conference on Advanced Materials, Energy & Environmental Sustainability (ICAMEES-2018) held at University of Petroleum and Energy Studies, Dehradun, Uttarakhand during December 14-15, 2018.	Levelized Cost of Electricity and Carbon Savings Estimation of 1 MW SPV Plant in Rajasthan.	Mr. Vineet Kumar Mahaver and Dr. Mahendra Lalwani
3.	International Conference on Advanced Materials, Energy & Environmental Sustainability (ICAMEES-2018) held at University of Petroleum and Energy Studies, Dehradun, Uttarakhand during December 14-15, 2018.	Performance Analysis of 420 kW Grid Connected Photovoltaic Rooftop Power Plant in Resonance, Kota, India.	Ms. Gauranshi Saxena, and Dr. Lata Gidwani
4.	International Conference on Advanced Materials, Energy & Environmental Sustainability (ICAMEES-2018) held at University of Petroleum and Energy Studies, Dehradun, Uttarakhand during December 14-15, 2018.	Performance Analysis and Calculation of Carbon Emission of 1 MW Grid-Connected Photovoltaic Power Plant in Fatehgarh, Jaisalmer, India.	Mr. Radhy Rani Nagar and Dr. Lata Gidwani
5.	International Conference on Advanced Materials, Energy & Environmental Sustainability (ICAMEES-2018) held at University of Petroleum and Energy Studies, Dehradun, Uttarakhand during December 14-15, 2018.	Performance Analysis of Grid Connected 50 MW SPV plant in Rajgarh, India.	Mr. Sandeep Singh Bhullar and Dr. Mahendra Lalwani



## (D) Workshops/Conferences Attended by Students of the Department:

S. No.	Name of Workshop/Conference	Name of Students	Date of Workshop/Conference	Venue
1.	Workshop and Seminars on a) Operation, Repair, and Maintenance of Solar System; b) Advances in Solar PV Technologies; c) Skill Requirements in Solar Industry; and d) Advances in Solar Thermal Technologies.	Mr. Akshay Choudhary Mr. Kapil Joshi Ms. Kritika Sharma Ms. Aditi Verma Mr. Pushpendra Nagar	January 08-11, 2018	Department of Pure and Applied Physics, University of Kota, Kota
2.	International Conference on Green Buildings & Sustainable Engineering (GBSE 2018)	Ms. Monika Agrawal Ms. Yogita Sharma Mr. Vineet Kr. Mahaver Mr. Swapnil Singh	January 24-25, 2018	Rajagiri School of Engineering & Technology, Kochi, Kerala
3.	IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS)	Ms. Seema Saroya	February 24-25, 2018	Maulana Azad National Institute of Technology, Bhopal (M.P.)
4.	IEEE International Conference on Power, Energy, Environment, and Intelligent Control (PEEIC2018)	Ms. Seema Saroya	April 13-14, 2018	G.L. Bajaj Institute of Technology & Management, Greater Noida (U.P.)
5.	Energy Meet 2018: National Seminar on Sustainable Solutions for Energy and Environment	Mr. Pushpendra Nagar, Mr. Yash Sharma, Mr. Naman Garg, Ms. Kritika Sharma	August 6-7, 2018	Department of Pure & Applied Physics, University of Kota, Kota
6.	TEQIP-III sponsored Workshop on Intellectual Property Right (IPR) and Indian Patent System	Ms. Kritika Sharma	September 28-29, 2018	RTU, Kota DST, and Rajasthan Council of Science and Technology
7.	International Conference on Innovative Applications of Computational Intelligence on Power, Energy, and Control with their impact on Humanity (CIPECH 18)	Ms. Gauranshi Saxena Mr. Swapnil Singh Ms. Radhy Rani Nagar Mr. Vineet Kumar Mahaver Mr. Mohammad Mohsin Mr. Sandeep Singh Bhullar Mr. Akshay Choudhary Mr. Giriraj Prasad Sen Mr. Pushpendra Nagar Mr. Yash Sharma	November 1-2, 2018	KIET Group of Institutions, Ghaziabad, U.P.
8.	One Week Faculty Development Programme on Control and Integration Techniques for Renewable Energy Systems	Mr. Akshay Choudhary Mr. Giriraj Prasad Sen Mr. Kapil Joshi Ms. Kritika Sharma Ms. Aditi Verma Ms. Sanju Kumawat Mr. Mohd. Faijan Mansuri	November 21-25, 2018	Rajasthan Technical University, Kota



9.	International Workshop on Renewable Energy Waste and Recycling	Mr. Akshay Choudhary Ms. Sanju Kumawat Mr. Yash Sharma Mr. Pushendra Nagar Ms. Aditi Verma Mr. Giriraj Prasad Sen Ms. Anam Khan	December 3-4, 2018	Department of Pure and Applied Physics, University of Kota, Kota
10.	International Conference on Advanced Materials, Energy & Environmental Sustainability (ICAMEES-2018)	Ms. Gauranshi Saxena Ms. Radhy Rani Nagar Mr. Vineet Kumar Mahaver, and Mr. Sandeep Singh Bhullar	December 14-15, 2018	University of Petroleum and Energy Studies, Dehradun, Uttarakhand



Fig. 4. CIPECH Ghaziabad conference.



Fig. 5. Energy Meet-2018 poster presentation.



Fig. 6. National seminar at UOK, Kota.



Fig. 7. ICAMEES Dehradun conference.

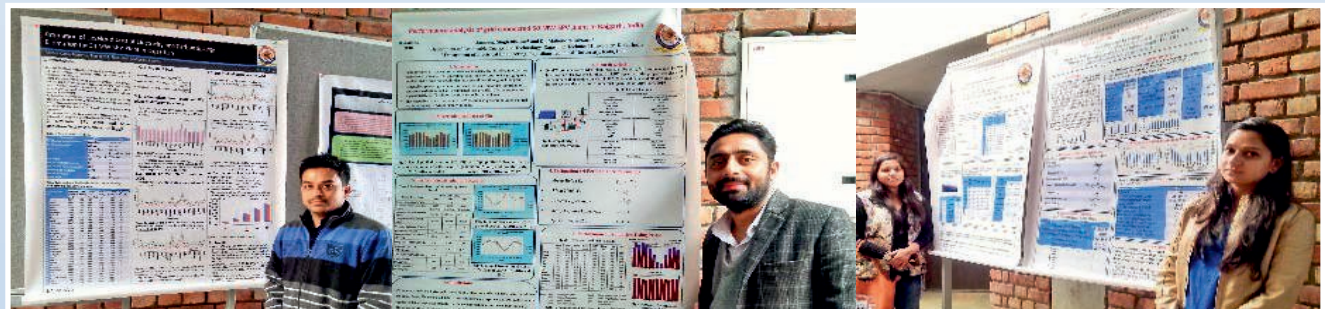


Fig. 8. Poster paper presentations at Dehradun.



## (E) Industrial Visits and Educational Tours Conducted:

1. Four students namely Ms. Monika Agrawal, Ms. Yogita Sharma, Mr. Swapnil Singh and Mr. Vineet Kumar Mahaver along with Prof. K.V.S. Rao went on Educational tour during January 21-30, 2018. They attended conference titled “International Conference on Green Buildings & Sustainable Engineering (GBSE-2018)” on 24<sup>th</sup> and 25<sup>th</sup> January 2018 at Rajagiri School of Engg. and Technology, Kerala. They also visited NIT Calicut and Floating Photovoltaic Power Plant at Banasura Sagar Dam at Wayanad, Kerala.
2. Two Guest Faculty of Department, Mr. Bharat Kumar Saxena and Mr. Akshay Lele along with the seventeen M. Tech. students namely Ms. Archana Maan, Ms. Gauranshi Saxena, Mr. Mohammad Mohsin, Ms. Radhy Rani Nagar, Mr. Vineet Kumar Mahaver, Mr. Vikas Verma, Mr. Akshay Choudhary, Mr. Giriraj Prasad Sen, Ms. Kritika Sharma, Mr. Kapil Joshi, Mr. Mohit Sharma, Mr. Pushpendra Nagar, Mr. Yash Sharma, Mr. Naman Garg, Ms. Aditi Verma, Ms. Anam Khan, and Mr. Aman Rizvi visited the 99 MW Jawahar Sagar Hydel Power Station near Kota, Rajasthan on April 20, 2018.
3. One Guest faculty of department namely Mr. Akshay Lele along with the fourteen M.Tech. students namely Ms. Archana Maan, Ms. Gauranshi Saxena, Mr. Mohammad Mohsin, Ms. Radhy Rani Nagar, Mr. Vineet Kumar Mahaver, Mr. Vikas Verma, Ms. Kritika Sharma, Mr. Kapil Joshi, Mr. Mohit Sharma, Mr. Pushpendra Nagar, Mr. Yash Sharma, Mr. Naman Garg, Ms. Aditi Verma, and Ms. Anam Khan visited 1,180 MWe Rajasthan Atomic Power Station at Rawatbhata, Rajasthan on August 10th, 2018.
4. Fourteen students of M.Tech. (Renewable Energy Technology) namely Ms. Archana Maan, Ms. Gauranshi Saxena, Mr. Swapnil Singh, Ms. Radhy Rani Nagar, Mr. Vineet Kumar Mahaver, Mr. Vikas Verma, Ms. Kritika Sharma, Mr. Kapil Joshi, Mr. Pushpendra Nagar, Mr. Yash Sharma, Ms. Aditi Verma, Ms. Anam Khan, Mr. Akshay Choudhary, and Mr. Giriraj Prasad Sen went on four days educational tour during September 03-08, 2018. They visited 80 MW solar photovoltaic power plant of Rays Expert Pvt. Ltd. at Bikaner on September 04, 2018 and Suzlon Wind Farms at Jaisalmer on September 06, 2018.



Fig. 9. Wind farm visited at Jaisalmer.



Fig. 10. Solar Park visited at Bikaner.



Fig. 11. Workshop at UOK, Kota.



## (F) Seminars Presented by Students at the Department:

Sr. No.	Roll Number	Student Name	Seminar Topics	Name of the Seminar Guide
1.	17EUCRE600	Ms. Aditi Verma	Solar Rooftop PV– A Bright Investment	Prof. Sanjeev Mishra and Mr. Akshay Lele
2.	17EUCRE601	Ms. Akshay Choudhary	Developing Sustainable Airports using Photovoltaic Systems	Prof. Sanjeev Mishra and Mr. Bharat Kumar Saxena
3.	17EUCRE603	Ms. Anam Khan	A Review on Techno-Economic Analysis of PV System Installed in Building	Dr. K. B. Rana
4.	17EUCRE604	Ms. Giriraj Prasad Sen	Study on Biomass Gasification and Biogas Production	Prof. Sanjeev Mishra and Mr. Bharat Kumar Saxena
5.	17EUCRE605	Mr. Kapil Joshi	Comparative Study of Solar Cell Technology	Prof. Sanjeev Mishra and Mr. Akshay Lele
6.	17EUCRE606	Ms. Kritika Sharma	Solar Wind Hybrid Generation System	Dr. Seema Agrawal
7.	17EUCRE607	Mr. Mohit Sharma	Solar Water Pumping System	Dr. A. K. Sharma
8.	17EUCRE608	Mr. Naman Garg	Critical Review of Green Building	Prof. Sanjeev Mishra and Mr. Akshay Lele
9.	17EUCRE609	Mr. Pushpendra Nagar	A Comprehensive Study on Latest Development and Performance Analysis of Evacuated Type Solar Water Heating System	Dr. K. B. Rana
10.	17EUCRE610	Mr. Yash Sharma	Critical Reviews of Net Zero Energy Buildings Using Various Techniques	Prof. Sanjeev Mishra and Mr. Bharat Kumar Saxena



Fig.12. M.Tech. (RET) students during M.Tech. Thesis oral examination.



## (G) Thesis Examination and Viva-Voce of M. Tech. (RET) Students Conducted at the Department:

S. No.	Name of Students	Thesis Title	Supervisor	Date of Oral Examination
1.	Ms. Gitika Dadhich Enrolment No.: 14E2CEREF40P605	Sizing and economic feasibility of solar water pumping system	Dr. Vivek Shrivastava	February 02, 2018
2.	Mr. Mayank Bhardwaj Enrolment No.: 15E2CEREM40P604	Experimental and simulation study for performance assessment of solar chimney for ventilation	Dr. KVS Rao and Dr. GD Agrawal	February 06, 2018
3.	Ms. Ayushi Khandelwal Enrolment No.: 14E2CEREF40P603	Performance analysis of solar photovoltaic system for a village of Rajasthan	Dr. Vivek Shrivastava	May 05, 2018
4.	Mr. Ronak Sharma Enrolment No.: 14E2CEREM40P612	Techno-economic feasibility study of SPV system for RTU Kota	Dr. Lata Gidwani	May 05, 2018
5.	Ms. Akanksha Sharma Enrolment No.: 15E2CEREF40P600	Calculation of Weibull parameters, wind power density and capacity factor estimation for different locations in India and selection of wind turbine generator	Dr. K.V.S. Rao	May 05, 2018
6.	Ms. Divya Mittal Enrolment No.: 15E2CEREF40P602	Techno-economic feasibility analysis for installing 1 MW floating photovoltaic power plant at ten lakes located in ten different states in India	Dr. K.V.S. Rao	May 05, 2018
7.	Ms. Monika Agrawal Enrolment No.: 15E2CEREF40P607	Harnessing solar energy in wind farms	Dr. K.V.S. Rao	June 27, 2018
8.	Ms. Yogita Sharma Enrolment No.: 15E2CEREF40P614	Energy conservation in a building by modifying building envelope at different climatic zones of India	Dr. K.V.S. Rao	June 29, 2018
9.	Mr. Harjot Singh Enrolment No.: 15E2CEREM40P603	Performance study of solar water pumps for irrigation in Rajasthan, India	Dr. K.V.S. Rao	July 13, 2018
10.	Mr. Mayank Gautam Enrolment No.: 15E2CEREM40P605	Hydrogen for power generation, water production, energy storage, and fuel cell application in vehicles	Dr. K.V.S. Rao and Dr. Sanjeev Mishra	October 31, 2018
11.	Ms. Rashmi Sharma Enrolment No.: 15E2CEREF40P609	Performance analysis of six grid connected biomass power plants in different states of India	Dr. K.V.S. Rao and Mr. K. S. Bhati	October 31, 2018
12.	Mr. Bharatveer Singh Chouhan Enrolment No.: 15E2CEREM40P601	Carbon dioxide emission reduction in India due to wind power, hydel power, and nuclear power	Mr. K. S. Bhati and Dr. K.V.S. Rao	November 30, 2018





# Department of Renewable Energy

## (H) Ph.D. Scholars Admitted in the Department:

College Roll No.	Name of Ph.D. Scholar	Name of Supervisor	Category	Date of Registration
18/1145	Mr. Deepak Tanwar	Dr. K.B. Rana	Part-Time	24/08/2018
18/1146	Mr. Rajendra Prasad	Dr. Mahendra Lalwani	Part-Time	01/09/2018

## (I) Expert Lectures Organized in the Department:

Two days expert lectures during October 26-27, 2018 were conducted in Department of Renewable Energy, Rajasthan Technical University, Kota. Shri O.P. Goyal, Retired Site Director of NPCIL Tarapur was invited to deliver the lectures on Nuclear Power Plant and Nuclear Energy topics.

## IV. Academic Performance of the Department During Last Six Years:

Department of Renewable Energy was previously known as Centre for Energy and Environment. *Centre for Energy and Environment* was approved by Board of Management of the RTU in November 2011. Formal orders for formation of the centre under RTU were issued in March 2013. Admissions in M.Tech. (Renewable Energy Technology) started from year 2010 under Mechanical Engineering Department. Students of M.Tech. (Renewable Energy Technology) from Mechanical Engineering Department were transferred to Centre for Energy and Environment in April 2013. All admissions to M.Tech. (Renewable Energy Technology) and Ph.D. (Renewable Energy) courses were started by the centre from July 2013. Centre for Energy and Environment was renamed as *Department of Renewable Energy* in May 2015 and is presently functioning as University Department of Rajasthan Technical University, Kota.

	2013	2014	2015	2016	2017	2018	Total
Number of students received M.Tech. (Renewable Energy Technology) degree	00	01	04	08	06	12	<b>31</b>
Number of research papers/posters published/presented in International/ National level conferences and Journals	05	09	14	27	38	16	<b>109</b>

## Summary of Academic Performance During 2018

- \* 01 Research Publication in Journal.
- \* 10 Research Publications in International Level Conferences.
- \* 05 Poster Paper Presentations in National/ International Level Conferences.
- \* 10 Workshops/Conferences Attended by Students of Department.
- \* 04 Industrial Visits and Educational Tours by Students of Department.
- \* 10 Students Presented Seminars.
- \* 12 Students Received M.Tech. (Renewable Energy Technology) Degree.
- \* 02 Part-Time Research Scholars Admitted in Ph.D. (Renewable Energy).
- \* 05 Students Admitted in M.Tech. (Renewable Energy Technology) Programme.



# Department of Renewable Energy



Fig. 13. Expert lecture organized in Department of Renewable Energy, RTU, Kota.



Fig. 14. Retirement function of Prof. K.V.S. Rao by students of Department of Renewable Energy, RTU, Kota.