

## FACULTY PROFILE



1. Name of the faculty with Qualification : **P. Ramanan**
2. Age & Date of birth : 40 Yrs. 07.10.1975
3. Designation : Assistant Professor (Sr. Gr.)
4. Experience in NEC as on 01.06.16 (With joining Date in NEC) : 8 Yrs. – DOJ 06.06.2008
5. Area of Expertise : CAD/CAM, Energy Engineering
6. Name of the Courses handled for the last 5 years (2011-12 to 2015-16)
  - 1) Engineering Graphics
  - 2) Engineering Mechanics
  - 3) Power Plant Engineering
  - 4) Applied Hydraulics and Pneumatics
  - 5) Solar Photovoltaic Fundamentals and Applications
  - 6) Mechatronics
  - 7) Principles of Management
  - 8) Total Quality ManagementPG
  - 1) Solar Energy and Utilization
  - 2) Solar Photovoltaic Power Plants: Planning, Design and Balance of Systems
  - 3) Instrumentation & Control for Energy Systems
  - 4) Advanced Power Plant Engineering
7. Research Area : Solar Photovoltaics
8. Ph.D work and publications :
  - Performance prediction and simulation studies of the Crystalline and Amorphous silicon Solar PV power plants.
  - CFD analysis of the above technology for certain climatic conditions.
  - Year round energy data and seasonal parameters from the co-located Solar PV power plants with above technologies have been acquired through remote monitoring system.
  - Performance study of the retrieved data for comparing the performance of the above SPV technologiesPublications – Nil (under preparation)
9. Progress after Ph.D : Not applicable
10. Details of Project guided (BE and ME)  
List with outcomes : **PG**
  1. Design and fabrication of solar scheffler dish with automated sun tracking and wind protection system using microcontroller
  2. Design and performance analysis of automated two axis solar tracking system for parabolic dish
  3. Performance analysis of parabolic trough concentrating photovoltaic thermal system
  4. Performance evaluation of hybrid photovoltaic thermal solar tunnel dryer
  5. Performance analysis of 1kwp grid-connected photovoltaic system using TRNSYS 17

6. Mathematical modelling and comparative theoretical analysis of various SPV technologies
7. Comparative and year around performance study of grid tied solar pv power plants using PVSYST
8. Investigation on solar air drier by using forced convection with thermal storage system

**UG**

1. Simulation study of 1kw grid interactive photovoltaic power plants using PVSYST
2. Performance analysis of different solar photovoltaic technologies using CFD

**Outcome**

Publications in International Conference - 3

National Conference - 5

11. Research Publication details : 1) A Paper titled, "An Investigation Of Local Improvement on Single Machine Scheduling Problems" has been presented in the International Conference Responsive Supply Chain and Organizational Competitiveness (RSC-2004) - A Technology Watch held at Coimbatore Institute of Technology, Coimbatore on January 5,6 & 7 - 2004.  
2) A Paper titled, "Finite Element Analysis on Torsion of Noncircular Smart Shaft " has been presented in the National Conference on Emerging Trends in Materials, Manufacturing and Design held during 8<sup>th</sup> and 9<sup>th</sup> February 2007 at MEPCO Schlenk Engineering College, Sivakasi.  
3) A paper titled "Performance and comparative study of 10 kWp solar photovoltaic system" at National conference on Recent Advancements in Mechanical Engineering at VV college of Engineering, Tirunelveli.
12. Details of R&D Projects : 1) Labview Integrated Performance Monitoring and Analyzing Energy Data of Co-Located PV Power Plants with Different Technologies - AICTE, New Delhi (RPS Scheme) - 2013-16, Rs. 12,50,000.00 - Co-Investigator
13. Details of Consultancy Project : Nil
14. Faculty interaction with outside world (Please attach proof) : 1. Arranged Industry-Institute collaborative elective courses on Solar Photovoltaics for M.E. Energy Engineering, B.E. Mechanical Engineering and B.E. Electrical & Electronics Engineering programs with M/s Consun Energy Solutions Pvt. Ltd, Bangalore.  
2. Arranged Industrial visit to the 1 MW Solar Power Plant installed by 'RL Clean Power Pvt. Ltd.' at Marakathoor village, Kalayarkoil.
15. Professional society activities, events, conferences organized : As Treasurer organized 3<sup>rd</sup> International Conference on Recent Advances in Material Processing Technology (RAMPT'13) organized during 07-09, January 2013

16. Professional society activities, events, conferences attended : 1. 40<sup>th</sup> ISTE National Convention at MEPCO Schlenk Engineering College, Sivakasi - 2010  
2. 17<sup>th</sup> ISTE TN&P Annual Convention on 'Empowering Indian Engineering Education for Global Expectations' at NEC - 2014  
3. Indian Value Engineering Society Academic Conference on 'Value Engineering' - TCE, Madurai - 2015
17. FDP, Short term courses, workshops, seminar arranged : As Co-ordinator/ Co-cordinator for MNRE Sponsored Seminar/ Workshop on  
1. Recent Advancements in Renewable Energy - Rs. 35,000/-  
2. Recent Advancement in Solar Power Technology - Rs. 50,000/-  
3. Renewable and Green Energy Sources and Technologies - Rs. 50,000/-  
4. Research Opportunities in Solar Thermal - Rs. 50,000/-  
5. Next Generation Technologies for Sun-Wind Energy Conversion - Rs. 86,000/-  
6. Solar Photovoltaic and Thermal Energy- State of Art Technology for Rural Development - Rs. 91,000/-
18. FDP, Short term courses, workshops, seminar attended : 1. International seminar on 'Latest Developments in Solar Photovoltaic Technology' - PSG Institute of Advanced studies -2013  
2. BRNS sponsored seminar on 'Advances in Industrial Tribology, - NEC - 2015  
3. National workshop on 'New Frontiers and Advancements of Tribology, - NEC - 2014
19. List of course module developed : **Design module**  
• Engineering Graphics (R2013 & R2015)  
• Mechanics of Rigid Body (R2015)  
• Mechatronics and Modern Control (R2015)  
**Thermal Module**  
• Solar Photovoltaic fundamentals & Applications (R2013 & R2015)  
**PG - Energy Engineering - BOS member**  
• Solar Energy and Utilization (R2013 & R2015)  
• Solar Photovoltaic Power Plants: Planning, Design and Balance of Systems (R2013 & R2015)  
• Instrumentation & Control for Energy Systems (R2013 & R2015)  
• Advanced Power Plant Engineering (R2013 & R2015)
20. Records of new program specific facility created by faculty : Nil
21. Faculty Intellectual Property Rights (FIPR) applied : Nil
22. Laboratories/research facilities established : 1) Establishment of Energy Simulation laboratory in our centre with TRNSYS 17 software (10 User license)

2) Creation of basic Research Facilities like Trough & Parabolic collectors, PV panel with different technologies, with and without tracking, PVT collectors and CPVT collectors at Energy Park for performance evaluation.

3) Assisted Chief Co-ordinator in establishment of the following SPV plants with remote monitoring through AICTE (RPS) project

- ✓ 1 kWp Monocrystalline Silicon
- ✓ 1 kWp Polycrystalline Silicon
- ✓ 1 kWp Amorphous Silicon
- ✓ 1 kWp Copper-Indium-Gallium-Diselenide (CIGS)
- ✓ 1 kWp Building Integrated Photovoltaic (BIPV)
- ✓ 1 kWp Concentrating Photovoltaic (CPV)

4) 0.5 kWp Concentrated Solar PV power plant with Aggregated Total Internal Reflection (ATIR) – Optiwave optical components has been installed by Banyan Energy Inc., USA at Energy park for technology demonstration and performance analysis at Indian radiation conditions

23. Any other informations / special achievements :
- Grant of Rs. 4,20,000/- had been received from BRNS, DRDO, CSIR, MNRE, DST & ISTE for 3<sup>rd</sup> International Conference on Recent Advances in Material Processing Technology (RAMPT'13)
  - Year round maintenance of Solar Steam Cooking System for 1000 inmates at Boys Hostel with MNRE subsidy
  - Year round maintenance of 3 X 10 kWp Solar PV power plant installed to partially meet the energy requirements of the campus.

[P. RAMANAN]