

NEHA BANSAL

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Seeking a position as an engineer in Solar Energy domain with an opportunity for continuous growth.

SUMMARY

- Highly efficient and talented Post Graduate with an understanding of design and manufacturing processes in Solar Energy domain.
- Possessing a good team spirit, excellent verbal and written skills, Positive attitude, deadline orientated, proactive trouble-shooter, initiate change and implement effective programs in challenging environments.
- **Willing to work in Solar engineering domain** and take charge of higher responsibility.
- Have training for 1.5 months as an intern in Topsun Energy Pvt Ltd, Gandhinagar & conducted tests as under: Matrix testing under lamp load, EVA shrinkage test, Tedlar shrinkage test, Bypass Diode Thermal test
- Studied IEC 61215: Documentation for Crystalline Si Terrestrial PV modules (Design qualification & Type approval).

TECHNICAL SKILLS – Solar Energy

- Design of Solar PV system and Solar Thermal Systems.
- Solar Radiation Geometry calculations and Equipments to measure solar radiation.
- Calculation of Monthly average hourly & daily global and diffuse radiations, solar trackers.
- Design of Liquid flat plate collectors, Concentrating Collectors (Cylindrical parabolic, Paraboloid dish collector)
- Design of Natural circulation, Collector cum Storage type & Industrial solar water heater systems.
- Space Heating (Active & Passive), Space cooling and Refrigeration system.
- Design of Solar Distillation System, Cabinet and Forced circulation dryers, Solar Cookers.
- Production of Silicon wafers (CZ and FZ process), Silicon Ribbon Technologies.
- Process flow of Commercial Si Cell Technology.
- Solar cell Characteristics, Parameters and Losses in solar cells.
- Effect of Series and Shunt resistance, Solar Radiation and Temperature on solar cell efficiency.
- Minimization of Optical losses, ARC, Surface texturing, Absorber material thickness and Light trapping.
- Minimization of Recombination losses by Surface and Bulk passivation.
- Design of Standalone Solar PV system with battery and AC/DC Load and Grid connected systems.
- Mismatch in Series and Parallel connection, Use of Bypass & Blocking diodes.
- Entire PV module manufacturing process & testing.
- Design Qualification and Type Approval qualification testing of solar PV modules as per IEC 61215.
- Fault Analysis in entire Manufacturing & Production of Solar PV Modules from tabbing till junction box attachment.
- Measures to optimize the system design to get higher efficiencies.
- Thin Film Solar Cell Technologies, Use of TCO, Substrate & Superstrate configuration, Single & Multi-junction solar cells.
- Thin film deposition techniques: Evaporation, DC and RF Sputtering, PECVD and HWCVD.
- Real time PV cell/ module, system level performance and detail studies of 1MW Solar PV power plant.
- Awareness of preparation of the Simulation Report using PVSyst.

PROFESSIONAL EXPERIENCE (Having 3+ years of Work Experience)

Assistant Professor

July 2014 – Present

Department of Electrical Engineering

ATHARVA COLLEGE OF ENGINEERING (ACE), Malad, Mumbai

- Involved in the core committee at college level for organizing conferences and workshops.
- Received a grant of 10,000 rupees as an IEDC project guide in- “Solar based Refrigeration System” from Department of Science and Technology, 2015-2016.

- Teaching Control Systems I and II, Power Electronics, Basics of Electrical & Electronics Engineering etc. subjects to graduating students.
- Implement various teaching methods and procedures to maintain the standard of academic excellence i.e. Virtual Labs, Virtual Lectures, Guest lectures etc.
- Ensuring that students have a good understanding of the subject with recent technologies and updates i.e. Innovation, Counselling, Mentoring and Knowledge addition.
- Adhering to the academic rules, regulations, policies and standards prevalent in college.

Assistant Professor

Jul. 2012 – Oct. 2013

Department of Electrical Engineering

CHHOTUBHAI GOPALBHAI PATEL INSTITUTE OF TECHNOLOGY (CGPIT), Bardoli, Surat

- Taught subjects like Electrical Machines, Linear Control Systems, Non-Conventional Energy sources (Solar Thermal) & (Solar Photo-voltaic) Technologies, Digital Electronics, Fundamentals of Electrical & Electronics, Integrated Circuit Applications etc. to graduating students.
- Conduction of laboratory sessions in subjects like Electrical Machines, FEE, Digital Electronics and ICA.
- To prepare subject notes, term syllabus making, conduct internal exams, lab arrangements and monitor students' performance.
- Conducting assessment exams and giving tutorials and quizzes to grade the student learning.
- To provide guidance to graduating students in the selection and execution of topics for seminar / research projects.

INDUSTRY INTERNSHIP

Intern Trainee

1st Jun. 2012 – 31st Jul. 2012

PV Module Manufacturing Division

TOPSUN ENERGY PRIVATE LIMITED, Gandhinagar

- In-Plant Training: In **Design & Quality Control Department**, Product certification (IEC 61215, ISO 9000:2008 (BVQI certified body), ISO14000:2004(BVQI certified body)
- Testing & scribing of solar cells, supervising the entire manufacturing process, final testing of modules using Class-B sun simulator.
- Identification of faults in PV module manufacturing in Tabbing, Stringing, Lay-up, Lamination & Curing process.
- Research on identification of Problems encountered after few years of PV module installation.
- Recommendations to enhance PV module output power.

EDUCATION

Ph.D - Electrical Engineering

2015 - pursuing

Sharda University, Greater Noida (NCR)

M.Tech - Energy Systems & Technology (focused on Solar Energy)

2010 – 2012

School of Solar Energy, Pandit Deendayal Petroleum University (PDPU), Gandhinagar, CPI – 9.5 / 10.0

Gold Medalist

Bachelor of Engineering – B.E. (Electrical)

2006 – 2010

Government Engineering College (GEC), Surat, VNSGU, **Aggregate – 70.0%**

Class XII (Science)

2005 – 2006

Vidya Bharti English Medium School, Surat, GSEB, **Aggregate – 82.2 %**

Class X (Science)

2003 – 2004

Vidya Bharti English Medium School, Surat, GSEB, **Aggregate – 79.0 %**

M. TECH FINAL YEAR PROJECT

“Fabrication of a Schottky junction across non-stoichiometric oxide thin film electrolyte interface (Photo electrochemical Solar cell) and its stability studies in aqueous medium and in new hydrophobic ionic liquid”

- Coverage:- Photo electrochemical solar energy conversion, Lead oxides, Experimental methods, Configuration of PEC cell, Results and Discussion

- The work focuses on the fabrication of photo electrochemical (PEC) solar cell, synthesis of lead oxide thin films, current voltage studies under dark and white light illumination, stabilization studies in aqueous medium and in hydrophobic ionic liquid.

SEMINAR

- P-value approach for Hypothesis testing and ANOVA
- Faults encountered in Utility scale Solar PV power plants
- CSP Technologies and Solar Thermal applications.
- Solar PV: Up gradations and Scenario of solar PV Technologies.
- Power Semiconductor Devices: MOSFET & IGBT.

ADDITIONAL

Publications

- Shreenivas Pai, Neha Bansal, Karna Desai, Archana Doshi, Devendra Moharkar and Mihir Pathare, “Intelligent PLC based Transformer Cooling Control System, IEEE Conference, Jan 2017.
- Jai Damania, Neha Bansal, Vinod Mandavkar, Devednya Vyas and Juilee Shailar, Smart Solar Powered Chiller”, International Conference on Innovative and Advanced Technologies in Engineering (ICIATE 2017), Jan 2017.
- Bansal Neha, Deshpande Anupama, Jain Pragya, Gurjar Garima, Technology aided and Practical Oriented Innovative Trends in Engineering Education, International Conference on Transformations in Engineering Education (ICTIEE 2016), e- ISSN 2394-1707, Jan 2016.
- Fabrication of a Cost-effective Automatic Dual/Single axis Active Solar Tracker with Built-in Inverter designed for Grid connectivity and Standalone systems, International Journal of Engineering and Advanced Technology (IJEAT), ISSN: 2249 – 8958, July 2014.
- Perceptions on domestic electricity conservation among selected households in Surat city, Ind. Res. Comm 2010; 4(1): 10-14.
- Traffic congestion and fuel wastage due to idling vehicles at crossroads, National Journal of Community Medicine 2010; 1(1): 41-43.
- Electricity usage and conservation patterns among selected offices in Surat city, Ind. Res. Comm. 2010; 4(1): 25-29.
- Perceptions on vehicular fuel conservation among selected respondents in Surat city, National Journal of Community Medicine 2010; 1(1): 6-8.
- Preliminary star rating system for four wheeler owners in surat city, National Journal of Community Medicine 2010; 1(1): 37-38.
- Study on global warming and fuel conservation in Surat city, National Journal of Community Medicine 2010; 1(1): 50-52.
- High sound levels and health effects during Navratri in Surat city, Ind. Res. Comm. 2010; 4(1): 15-17.

Workshops / Conferences

- Attended International Conference on “Innovative & Advanced Technologies in Engineering” ICIATE 2017, ACE, Mumbai, 12-14 Jan 2017.
- Attended a one day Workshop on “Patenting and Legalities” on 27th Sept 2016, ACE.
- Organized two one-day Workshops on “Electrical wiring” and “PCB Designing & Technical paper writing” on 22-23rd Sept 2016, ACE.
- Organized a one-day Seminar on “Renewable Energy & Energy Storage Systems” on 21st Sept 2016, ACE.
- Attended National Conference on “Technological Advancement and Automatization in Engineering” NCTAA 2016 in ACE on 28th and 29th Jan 2016.
- Organized a One day Workshop on “Renewable Technologies for Electricity Generation” in Atharva College of Engineering.
- Participated in One day Workshop on “Innovative trends in Electronics and Communication Engineering” on 14th Feb’2015 in ACE.
- Participated in TWO WEEK ISTE MAIN WORKSHOP ON CONTROL SYSTEMS, National Mission on Education through ICT (MHRD, Govt. of India), conducted by IIT Kharagpur, Mumbai Dec. 2014.
- Attended Indian Innovation Growth Programme, Department of Science & Technology, Govt. of India, Conducted by FICCI, Mumbai, Dec. 2014.

- Participated in 2-week ISTE workshop on “Solar Photovoltaics: Fundamentals, Technologies and Applications, Under National Mission on Education through ICT(MHRD) & Ministry of New and Renewable Energy, 12th-22nd December,2011.
- Attended a seminar on “Smart Grid Technology”, organized by Gujarat Technological University, 1st October 2011, Ahmedabad Management Association, Gujarat.
- Participated in All India Essay contest for “Damodarshree, National Award for Academic Excellence 2011”. The Topic was “Education & Nation Building”.
- Attended one day workshop on IEEE Gujarat Section sponsored “Pattern Recognition”, organized by Sarvajani College of Engineering & Technology, 9th March 2013, Surat.
- Attended one day IEEE workshop on “Introduction to Soft Computing”, organized by Sarvajani College of Engineering & Technology, 16th March 2013, Surat.

Professional Memberships

- Member of Solar Energy Society of India (SESI).
- Member of Indian Society for Technical Education (ISTE).

SOFTWARE PROFICIENCY

MATLAB, PVSyst, Microsoft Office 2013, NI Multisim, PLC basics.

AWARDS & ACHIEVEMENTS

- **Gold Medalist** for being **1st** in School of Solar Energy at Pandit Deendayal Petroleum University; Received gold medal from honorable Prime Minister Mr. Narendra Modi, Reliance Group chairman Dr. Mukesh Ambani and British Petroleum (BP) Group Chief Executive & Director Mr. Bob Dudley.
- Received an honor certificate in form of “**Certificate of Appreciation**” for ranker brilliant student from Vision World Academy at Gujarat Chamber of Commerce & Industry, Ahmedabad.

PERSONAL

Date of Birth	: 7 th Aug. 1989
Age	: 27 years
Sex	: Female
Marital Status	: Married
Languages Known	: English, Hindi, and Gujarati (Expert – Read, Speak, Write)