

## CURRICULUM VITAE

### **Pradip Shivaji Mandake**

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### **Objective**

To Seeking a challenging position in a high-quality engineering environment where my analytical and resourceful skills will add value to the organization's operations.

### **Area of Specialization**

Electrical Engineering

### **Work Experience**

1. Organization:-“**SmartBrains Engineers and Technologist Pvt. Ltd.**”, Pune.

Designation: - Electrical Design Engineer

Duration : - 3 August 2017 to till date.

### **Responsibilities: (Electrical Design Engineer-Oil & Gas)**

- Understand project milestones and do the micro planning for this scope of work.
- Compiling, verifying and correlating information and data relating to the implementation of electrical engineering requirements.
- Co-ordinates assigned work with other technical personnel as directed.
- Development and verification of project control document and status report.
- Preparation of load list, preparing schematic design drawings. SLD, Interconnection drawings, control schematics, layouts.
- Develop Electrical Systems using Design, modelling & simulation software's. like AutoCAD Electrical, Revit MEP, ETAP, etc.
- Manage large complex utility projects and perform engineering analyses, studies, and develop conceptual designs.
- Preparing load sheet of electrical capital equipment selection.
- Calculation and design of Earthing including Earth mat & Lightning protection system as per, IS 3043
- Sizing Calculations Knowledge and experience with various IS, IEC, BS, ANSI codes and standards as well as various PMC standards
- Detail Engineering of electrical system as per project specification & applicable national/international standards & codes
- Knowledge and experience in electrical equipment sizing such as - Transformers, DG sets, MCC, HT & LT Cables etc.
- Power System Analysis – Load Flow, Fault Level, Relay Coordination & Arc Flash.
- Preparation & updating of design basis, technical specifications, data sheets, calculation for detailed engineering

- Preparation of drawings, sketches, layouts, technical analysis using ETAP system studies
- Performing calculations like cable sizing, lighting, transformer sizing, UPS sizing
- Experience in detail designing of electrical system for oil & gas industries with knowledge of applicable national/international standards.
- Add on – Hazardous Area Classification – IEC 60079
- Lightning Protection Design – IEC 62305
- Drafting of Lighting, Power, and Cable tray, Earthing & lightning protection systems.
- Preparing list of drawings & deliverables
- Obtaining approval of system designs from Clients
- Preparing detailed design drawings.
- Quantification of equipment and materials.
- Preparing as-built drawings
- Preparation of technical comparison for all the BOQ.
- Support the Clients for project execution and clarify the Technical issues at site.
- Create documenting specifications, Standards, schematics, and diagrams regarding their projects.
- Produce reports addressing project progress and other details for managerial staff.

**Responsibilities: (Design Engineer- Solar PV Projects)**

- Create plans for solar energy system development, monitoring, and evaluation activities.
- Conduct engineering site audits to collect structural, electrical, and related site information for use in the design of residential or commercial solar power systems
- Design and coordinate design of photovoltaic (PV) systems, including system components, for residential and commercial buildings.
- Create electrical single-line diagrams, panel schedules, or connection diagrams for solar electric systems, using computer-aided design (CAD) software.
- Create graphical representations of energy production systems.
- Review specifications and recommend engineering or manufacturing changes to achieve solar design objectives.
- Develop design specifications and functional requirements for residential, commercial, or industrial solar energy systems or components.
- Provide technical direction or support to installation teams during installation, start-up, testing, system commissioning, or performance monitoring.
- Perform computer simulation of solar photovoltaic (PV) generation system performance or energy production to optimize efficiency.
- Design of DC side electrical engineering related Medium and large-scale Solar Photovoltaic Power plants. Ability to provide cost optimized design of the arrangement of the PV plant layout.
- Design of DC side Engineering Specification and Standards (IEC, IEEE, ANSI, SEC, IS etc.)
- Create shading analysis using software tools (Sketch up, etc.)

- Preparation of DC SLD (Single Line Diagrams) the layout design for the 3D CAD tools.
- Preparation of Plant Layout GA drawings, PV Array Layout, DC Cable routine layouts, DC Grouping layout and all other Solar PV plant services layout
- PV plant Earthing Calculation as per IEEE, BS, IS and other related standards: Earthing conductor sizing and earth mat design.
- Lightning risk assessment and lightning calculations for design for Solar PV plant as per IEC and IEEE guidelines.
- String Cable, Power Cable (DC and AC) sizing calculation; Control Cable sizing, length Calculations and cable accessories selections.
- Sizing Calculations for the protection Fuse, Connectors, SCB, SPD all DC components and Ability to select the DC Fuse, SCB, String / Central Inverters or PCS and all associated equipment s for solar PV plant as per IEC, IS, IEEE standards.
- Review preparation of General Technical Parameters, Design Memorandum, check list preparation, Equipment sizing and configuration for the DC Component.
- Auxiliary Load calculation AC DC and designing schematic diagram of auxiliary loads.
- Develop standard operation procedures and quality or safety standards for solar installation work.
- Create checklists for review or inspection of completed solar installation projects.

2. Organization: - **“Shrikant Agro industries Private Public Ltd.”, Karad.**

Designation: - Electrical Engineer

Duration : - 11-01-2016 to 31-07-2017

**Responsibilities:**

- Compile and maintain records documenting engineering schematics, installed equipment's, installation or operational problems, resources used, repairs, or corrective action performed.
- Review, develop, and prepare maintenance standards.
- Support manufacturing department with product development and testing.
- Provide quality assurance for ongoing Projects
- Maintaining electrical Power & Control system, machinery & Equipment.
- Evaluate Electrical Systems

3. Organization: - **“Madhav Capacitors Private Limited”, Pune.**

Designation: - Electrical Engineer intern

Duration : - August 2015 to December 2015

**Responsibilities:**

- Problem definition, research, data collection
- Administrative tasks, other works as assigned

## Education/Qualification

Degree	Board/University/College	CGPA/Percentage	Year of Passing
M.Tech (Electrical Power System)	Bharati Vidyapeeth College Of Engineering Pune	8.34	2016
B.E. Electrical	North Maharashtra University, Jalgaon	72.00	2013
Diploma Electrical	Government Polytechnic, Ratnagiri	72.50	2010
12 <sup>th</sup> (Science)	Krishna Mahavidyalaya Shivnagar-Karad	71.00	2008
10 <sup>th</sup>	New English School Shirasgaon-Sonsal	72.00	2006

## Academic Projects:

### 1. M. Tech Electrical Power System

**Title:** Experimental analysis of supercapacitor with variation in separator parameters.

**Description:**

In this project it is discussed how equivalent series resistance, capacitance, specific capacitance and specific power density values of supercapacitor depends on the separator parameters used. Also it is shown that for the high power generation systems, the properties of the separator material have to be carefully optimized and separator materials effect is highly important for the viscous electrolyte solutions.

The separator materials various trials are carried out which has absorption test, thickness, separator layers, variation in binders, types of adhesives, carbonization levels and flooded and absorbed system. These trials are selected from the separator characteristics of the supercapacitor which can be analyzed for supercapacitor characteristics.

**Publications:**

- ‘Significance of separator thickness for Supercapacitor’ International Journal for Research in Applied Science & Engineering Technology (IJRASET).Volume 4 Issue II, February 2016
- ‘Effect of Separator Thickness Variation for Supercapacitor with Polyethylene Separator Material’ International Journal of Scientific Research in Science, Engineering and Technology, Volume 2, Issue 2, March-April-2016.
- ‘Analysis of aqueous supercapacitor with various current collectors, binders and adhesives’ Biennial International Conference “2016 Power and Energy Systems: Towards Sustainable Energy”

### 2. B.E Electrical Engineering

**Title:** Transient stability analysis of power system using MATLAB.

### 3. Diploma Electrical Engineering

**Title:** Design & fabrication of power electronics experimental kits.

## Implant Training

Completed one month training at Sonhira Sugar industries Ltd. At 22MW Co-generation power plant.

## Skills

- Problem Solving Abilities
- Creativity
- Ability to deal with people diplomatically
- Team working Skill
- Adaptable
- Good Managerial and interpersonal skills
- Soft spoken and friendly
- Patience

## Application Software

- **AutoCAD Electrical:** Basic Work Flow, Project Basics, Schematic Wiring, Schematic Components, Panel Layouts, Symbol & Icon Builders, Generating Reports.
- **Revit MEP:** MEP Design, Family Creation, Electrical Design, HVAC Design, Plumbing, Fire Protection, Schedules, Documentation, Analysis.
- **PLC Automation:** Allen Bradley, Siemens, HMI, SCADA
- **Pvsyst-** Solar PV System Design and Evaluation.
- **ETAP-**load flow analysis, short circuit analysis, motor acceleration, transformer sizing, cable sizing, relay co-ordination, arc flash, harmonic analysis.

## Extra-Curricular Activities & Certification

- Participated in two day faculty development programme on “Power quality Monitoring and Mitigation in Electrical systems” supported by IEEE PES chapter-Pune section, organized by Department of Electrical Engineering College of Engineering, Pune.
- Participated in workshop on “Energy Storage Devices” held at The Institution of Engineers (India), Pune Local Centre.
- Completed Advanced Training & Certification Program REVIT MEP, Solar PV System Design, CMT- Consumer Energy Meter Technician & PLC AUTOMATION course in Smart Brains Institute of Engineering Design & Research, Pune.
- Completed Training & Certification Program of AutoCAD Electrical course in Live Wire Training Institute’s Pune.
- Completed Advanced Training & Certification Program of “Training Of Trainers” in Solar PV System by Skill Council For Green Jobs, NSDC Govt. of India.
- Completed Training of ETAP course in Live Wire Training Institute’s Pune.
- *Freelancing worked as Electrical Project Engineer in Bucon Engineers & Infrastructures Pvt. ltd, Tractabel Engineering Pvt. Ltd, and Variuos Consulting firms for their Oil & Gas, Energy sectors etc.*
- One year experience in Social Work at ‘Jagruti Sewa Sanstha’ as Project Coordinator.

## Declaration

I hereby declare that the above written particulars are true to the best of my knowledge and belief.

**Place:** Pune

**Date:** 31/3/2022

**Pradip Shivajirao Mandake**