

# Job Description

<b>Position Title</b>	<b>Power Electronic Control Research Engineer</b>
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## **A. Position Purpose & Summary:**

Development of embedded control (hardware & software) for power electronic product

## **B. Primary Duties & Responsibilities:**

1	Understand product / project specifications and realize requirements to design using calculations, modeling and simulations
2	Prepare and define detail product and technical specifications that capture customer requirements for prototype or technology demonstrators
3	Coordinate with lead engineer and team manager on product / project execution on a continuous basis.
4	Engage in sizing, sensor, actuator selection and control hardware components and circuits.
5	Work with a multi-disciplinary engineering development team that includes application engineering, power conversion design, controls engineering, mechanical design, control hardware design, and product test / validation
6	Elaborate & implement all Test Plans in accordance with basic & extended requirements
7	Establish system & sub-system level control requirements from functional specifications and application needs
8	Plan and perform control algorithms and firmware development and validation on HIL or other simulators and IDE's
9	Responsible to produce IP's from novel design for patent submissions, journal, conference papers

## **C. Accountability & Authority**

1. Successful design, verification, qualification of power electronic based product and system
2. Improve on the Power Electronic Lab's personnel technical skills
3. Grow Intellectual Property Profile: IP Filed, Trade Secret, Commercialized IP

## Position Requirements

### C. Academic Qualification:

- Phd   
  Master's   
  Degree   
 Others (Pls specify) \_\_\_\_\_
- Engineering   
  Information Technology   
  Science   
  Marketing / Business
- Finance / Management   
  Others (Pls specify) \_\_\_\_\_

### D. Experiences:

- Fresh   
  3 years   
  5-10 years   
  More than 10 years
- R&D   
 Information Technology   
 Manufacturing   
 Oil & Gas   
 Finance / Admin
- Sales / Marketing   
 Others (Pls specify)

D. Technical Skills	E. Soft Skills
Deep domain knowledge of power electronics and their application to power converters, including cooling, losses, switching characteristics and implications	Excellent written and oral communications skills
Experienced in using oscilloscopes, power meters, DC & AC loads, programmable PS, and other	Able to work independently on complex technical and/or engineering tasks
Minimum of 5 years of technical engineering experience in industrial power electronic based designs	Flexible to respond to dynamic work and customer needs environment
Proficient in electrical design / simulation tools like Matlab/Simulink, PLECS, PSIM tools etc.	Must be willing to work in an unstructured environment
Familiar with PCB design including using Altium and other PCB design tools	Ability to multi-task on a variety of projects to strict time scales
Knowledgeable in magnetics in transformers, motors and generators	Excellent hands on debug skills, ability to get things to work
Able to perform thermal analysis for power electronics components, subsystems and converter systems	
Knowledge of control and protection algorithms and firmware for power converters	
Strong background in digital control and power converter control techniques	
Able to design and qualify gate drivers for simple/series components, estimate/measure the losses and integrate those data into top level design process.	
Strong technical aptitude, including applicable engineering tools and systems.	

<b>Additional Preferences</b>
Preferably a Master's or PhD candidate
Experience in Power Electronic Product Design, Testing, Characterization, Qualification & Reliability Test
The candidate have experience in various development stages of market leading power electronics solutions from conception to real world implementation