

SHAUNAK SUDHIR SOMAN

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A determined individual with a multi-disciplinary educational background in materials science and mechanical engineering. Seeking a position in the industry that will provide me with new challenges, help me hone my skills and ultimately boost my professional growth.

Education:

UNIVERSITY OF FLORIDA

Specialization: Microfabrication/Semiconductors

Gainesville, Florida

Jan 2017 – Dec 2018

Master of Science in Materials Science and Engineering – GPA : 3.54/4.00

Relevant courses: Advanced Materials Principles, Characterization of Electronic Materials, Advanced Electronic Materials Processing, Advanced Phase Diagrams, High Temperature Alloys

NAGPUR UNIVERSITY

Nagpur, India

Bachelor of Engineering in Mechanical Engineering – GPA : 3.33/4.00

Jun 2011 – May 2015

Relevant courses: Manufacturing Processes, Metallurgy, Production Technology, Applied Chemistry, Machine Design, Engineering Drawing

Skills:

Microfabrication/Processing : Oxidation, Lithography, Dry/Wet Etch, CVD/PECVD, Sputtering, Mask Design, MEMS Design

Analytical : SEM, Optical Microscopy, Film Thickness Measurement, Emission Spectrometry, Mechanical Testing

Software : AutoCAD, KLayout, ANSYS, SolidWorks, CATIA, Thermo-Calc, MATLAB, Excel, Word, PowerPoint

Research Experience: Graduate Research Assistant at University of Florida

Dec 2018 – Current

- Working on a Carbon Nanofiber based Neural Probe capable of electrical and optogenetic stimulation, recording and microfluidics
- Played lead role in creating probe designs using CAD software and devised fabrication procedures
- Optimized parameters for electrospinning of SU-8 nano-fibers

Academic Projects:

Microfabrication of Silicon wafer

Aug 2018 – Nov 2018

- Underwent training on semiconductor processing techniques at the Nanoscale Research Facility at University of Florida
- Used clean-room processes such as photolithography, etching, thin film deposition etc. to fabricate devices
- Learned about design, fabrication and characterization of MEMS devices
- Presented on theoretical concepts and fabrication technique of p-n junction and photo-diodes on silicon wafer

Development of Titanium Alloys using Phase Diagrams (Technical Paper)

Jan 2018 – Apr 2018

- Classified Ti Alloys based on their microstructure
- Compared processing techniques of various types of Ti Alloys (Alpha, Alpha-Beta, Beta etc.)
- Used ThermoCalc software to obtain phase diagrams for alloys at varying compositions

Review of Additive Manufacturing Processes for Metals (Technical Paper)

Aug 2017 – Dec 2017

- Characterized A.M. processes based on material type and application
- Compared laser-based processes for metals including selective laser sintering, selective laser melting etc.
- Analyzed binding mechanisms in metal powders and the conditions in which they occur
- Explained future scope and challenges for A.M. processes

Design and Fabrication of Chassis for an Electric Off-Road Vehicle

Nov 2014 – Apr 2015

- Designed an innovative placement layout for electrical components such as batteries, charger, motor controller etc.
- Importance was given to weight distribution as well as mass centralization while also conforming to SAE regulations on chassis design
- Material chemical testing was done which included spectrometer analysis. This aided in chassis member strength and load calculations
- Impact testing was done using CATIA. All possibilities such as side impact, frontal impact, roll-over etc., were considered thus, ensuring safety of the driver

Work Experience:

Manufacturing Engineer, Weldfast Electrodes Pvt. Ltd., Nagpur, India

Dec 2015 – Dec 2016

- Supervised production processes which included wire drawing, wire cutting, copper coating etc.
- Performed chemical analysis of weld samples using Emission Spectrometer
- Performed quality checks which improved production efficiency
- Provided technical assistance during breakdowns to reduce downtime
- Implemented LEAN manufacturing and Root Cause Analysis principles for all duties

Leadership:

Vice-Captain and Main Driver for Collegiate 2015 SAE BAJA team

- Formulated an action plan and distributed tasks among team members
- Handled team management, vehicle design and fabrication
- Presented the concept and ideology behind the vehicle at the design round held at Ahmedabad, India
- Led the team to a 4th place finish in final endurance race held at Indore, India

Affiliations:

- Member of Interdisciplinary Microsystems Group (I.M.G.) at University of Florida
- Member of Semiconductor Career Readiness Organization (S.C.R.O.) at University of Florida