

SANJAY RAVICHANDRAN

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SUMMARY

Highly motivated Materials Engineer with over 4 years of experience in R&D and process optimization, seeking a career in materials science and engineering. Committed to leveraging data analysis, continuous learning, and collaborative problem-solving to drive and deliver advancements in semiconductor technologies and improve end products.

WORK AND RESEARCH EXPERIENCE

Process Engineer, Intel Corporation Hillsboro, Oregon, USA

Feb 2022 – Nov 2024

- Managed tool ownership and qualification, developed processes, and conducted data analysis to optimize performance and improve yield in the wet etch module process.
- Implemented defect and availability improvement strategies by conducting root cause analysis to effectively match tools to specific processes, enhancing overall operational efficiency and reliability.
- Utilized statistical methods to monitor and control process variations ensuring consistent quality and performance for tools across the fleet.
- Evaluated and screened new chemicals for potential use, considering critical factors such as safety, efficacy, and regulatory compliance to ensure suitability for application.
- Developed and implemented new monitoring systems to effectively track tool performance and process metrics.
- Facilitated collaboration across vendor-based companies for successful process and equipment projects.
- Led initiatives aimed at reducing defects to enhance yield and improve product quality.
- Enabled equipment parameters to meet high-volume manufacturing conditions, optimizing production efficiency.
- Adjusted processes and equipment, disseminating learnings across modules and sites to improve output, safety, and quality.
- Enhanced data reporting, process controls, and maintenance procedures through automation, driving operational improvements.

Graduate Student Researcher, UC Smart Additive Manufacturing Laboratory Cincinnati, Ohio, USA July 2019 – Dec 2021

- Designed metamaterials using design for additive manufacturing principles and finite element method to study the influence of Fabry-Perot resonances that occurred within the metamaterials, contributing to advancements in acoustic performance.
- Designed and developed lattice structures and graphene nanocomposite materials specifically tailored for application in shoe midsoles and outsoles.

Manufacturing Engineering Intern, Mahindra and Mahindra Ltd Chennai, India

March 2018 – June 2018

- Worked with the R&D design team and manufactured a prototype apparatus for locating the H-point in an automobile.
- Applied Six Sigma and Lean Manufacturing principles, using the DMAIC methodology to optimize processes and align prototype development with customer requirements.

SKILLS

- **Statistical tools:** JMP, SQL
- **Manufacturing and Statistical Methods:** Six Sigma, Lean Manufacturing, MES, Process Improvement, DFM, DFAM, DMAIC, FMEA, DOE, 3D Printing, Root Cause Analysis, QA, GMP, SPC
- **Materials Characterizations:** DSC, Failure Analysis, Sample Preparation, Mechanical Testing, SEM, TEM, EDX/EDS
- **Design & Analysis Software:** Solidworks, PTC Creo Parametric, ANSYS, ABAQUS, COMSOL Multiphysics

EDUCATION

• **Master of Engineering in Materials Science and Engineering**, University of Cincinnati

Aug 2018 - Dec 2021

• **Diploma in Mechatronic Systems Engineering and Product Innovation**, RWTH Aachen University

July 2017

• **Bachelor of Engineering in Mechanical Engineering**, Kumaraguru College of Technology, India

Aug 2014 - Apr 2018

ACADEMIC PUBLICATIONS AND PROJECTS

- Published a paper on "Simulation of Fabry-Perot resonances for 3D Printable Complex Holey Acoustic Metamaterials" in American Society of Mechanical Engineers - Manufacturing Science and Engineering Conference (MSEC2020-8328, V001T01A031). **June 2021**
- Designed, performed topology optimization, material selection and implemented the generative design process for weight optimization of a commercial aircraft seat-belt anchor without compromising on performance with respect to US federal regulations. **Jan 2020 – March 2020**

RECOGNITIONS

- Received a university grant scholarship of \$21K from the University of Cincinnati for graduate studies.

REFERENCES

- References can be provided on request.