

AMIT PATIL

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EDUCATION

Ph.D. Mechanical Engineering and Materials Science | Cleveland State University (Expected: Dec 2022)
M. S. Mechanical Engineering | Cleveland State University (2019)
B. S. Mechanical Engineering | University of Mumbai (2013)

RESEARCH EXPERIENCE

Graduate Research Assistant | Advanced Manufacturing and Material Processing lab
Cleveland State University, Cleveland, OH (Jan 2018 - Present)

- Developing and investigating manufacturing techniques for carbon nanotubes and graphene nanoplatelets reinforced nickel-based metal matrix composites for enhanced mechanical and tribological performance,
- Investigating the effects of synthesizing techniques, viz, in situ vs. ex situ Titanium carbide reinforcement in the nickel matrix manufactured via mechanical alloying followed by SPS and LENS processes on the mechanical and tribological properties.
- Investigating the strength enhancement for Inconel alloys due to the addition of different carbon-based nanofillers and studying the effects of heat treatment on precipitation and solid solution strengthening.
- Performing material characterization (SEM, EDS, XRD, FTIR) and mechanical testing (strength analysis, microhardness, tribology test) to establish and understand the process-structure-property relationship of various metallic alloys and composites for aerospace, automotive, and biomedical applications.
- Performing heat treatment of the processed part to analyze and understand the effect on mechanical properties.
- Simultaneously managed different research projects and collaborated with research groups from different departments and organizations.
- Responsible for mentoring graduate and undergraduate students on different research projects.
- Managing laboratory operations, including maintenance, calibration of equipment, and ordering consumables to maintain laboratory inventories.

Laboratory Assistant | Additive Manufacturing (3D Printing) Lab
Cleveland State University, Cleveland, OH (Aug 2019 - Present)

- Responsible for operation and maintenance of 3d printers with different 3d printing technologies such as FDM, Vat Photopolymerization, Material jetting, and Binder Jetting.
 - Experienced working with materials, including ABS, PEEK, Photopolymer resins, and Stainless steel.
 - Performing post-processing of printed parts with various techniques such as water jetting, ultrasound bath, UV curing, vapor smoothing, and sintering.
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WORK EXPERIENCE

Project Engineer | APF Water Systems Pvt. Ltd. Mumbai, India (May 2016 - July 2017)

- Responsible for directing and implementing various projects simultaneously in a scheduled manner.
- Coordinated with colleagues from different departments to ensure the execution of the project on time.
- Implemented the vendor management program to establish contacts and procurement from local vendors on-site during the need of immediate requirements, reducing about 10 percent of the project time.
- Conducted client meetings to oversee project installation and execution of the operation, including participation in Factory acceptance test and Site acceptance test for the project.

Validation Engineer | APF Water Systems Pvt. Ltd. Mumbai, India (Aug 2015 - April 2016)

- Authored validation protocol documents including DQ, IQ, OQ, and PQ in accordance with the United States Pharmacopeia reference standards.
- Prepared Standard operating procedure (SOP) document for the system in compliance with FDA regulations
- Executed the validation of the system according to the P&ID and PFD on the client site during the installation and commissioning of the supplied system.

Manufacturing Engineer | R S Samant Engineers Pvt. Ltd. Mumbai, India (Sep 2013 - Jul 2015)

- Responsible for directing and monitoring the manufacturing activities for fabrication of process equipment for chemical and allied industries.
- Functioned on job sequencing and prioritizing to obtain target production with efficiency.
- Implemented and maintained the 5s philosophy in the working environment.
- Assisted in troubleshooting any production-related issues and coordinated with the Quality Assurance department for quality control.

Mechanical Engineer Intern | S. P. Engineering Pvt. Ltd. Mumbai, India (Jan 2013 to Aug 2013)

- Assisted senior team members in all projects and organized design and quality assurance documentation.

TECHNICAL SKILLS

- **Skills:** Material testing (Mechanical strength, Tribology test, microhardness); Material Characterization (XRD, SEM, EDS, EBSD, XPS, FTIR); Additive Manufacturing, Subtractive manufacturing (Lathe, CNC machining, Milling), Sheet metal Manufacturing, Powder Metallurgy, Lean Six Sigma Manufacturing
- **Design & Development Tools:** AutoCAD, Solidworks, Creo, Autodesk Fusion360, python, Matlab
- **Software skills:** MS Office, Origin Pro, ImageJ, HighScore Plus, JMP, Minitab

LEADERSHIP AND TEAMWORK

Graduate Teaching Assistant | Cleveland State University, Cleveland, OH (Aug 2017 - May 2019)

- Conducted weekly lab sessions for Manufacturing processes lab, instructed and monitored students performing manufacturing operations with safety.
- Facilitated lectures for Manufacturing processes course for a class of 30 to 40 students and assisted Professor with homework, grading quizzes, and organizing teaching material for classes.

President | International Society for Materials (ASM), Cleveland State University (Jan 2019 – Present)

- Functioned in a team to organize materials science associated activities for the students.
- Collaborated with ASM international, wrote funding request proposals, and held ASM Cleveland Chapter meetings as a student representative.

SELECTED PUBLICATIONS

[Google Scholar : Amit Patil](#)

Publications: 6 peer-reviewed journal articles and 3 international conference proceedings

AWARDS

- Achieved 1st place in ‘Kerka awards, 2018’ (Research presentation, Cleveland state university)