

# K. DIVYA

## Scientist

International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI), Hyderabad

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## ABOUT

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Highly skilled and experienced AM (Additive Manufacturing) professional passionate about driving innovation. Being a Metallurgist with 12 years of industrial and research experience, I have a comprehensive understanding of material properties and their interaction with the AM process by working with a broad spectrum of materials including superalloys, magnetic materials, and various types of steel and aluminium. With a deep understanding of AM technology including DFAM and AM process-specific software, I am interested in developing industry-specific solutions across diverse industries.

## EXPERIENCE

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<b>2016 – To date</b>	<b><i>International Advanced Research Centre for Powder Metallurgy &amp; New Materials (ARCI), Hyderabad</i></b> <i>Designation: Scientist, Centre for Laser Processing of Materials</i>
<b>Nov 2015 – Feb 2016</b>	<b><i>Volvo India Pvt. Ltd., Bengaluru</i></b> <i>Designation: Senior Engineer, Supplier Quality</i>
<b>Feb 2014 – Dec 2014</b>	<b><i>L&amp;T Special Steels &amp; Heavy Forgings, Surat</i></b> <i>Designation: FTC, Product Management Group</i>
<b>Jul 2010 – Jul 2011</b>	<b><i>WABCO INDIA LIMITED, Chennai</i></b> <i>Designation: Graduate Engineer, Product Development</i>

## EDUCATION

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<b>Program</b>	<b>Institution</b>
M Tech Metallurgical & Materials Engineering	Indian Institute of Technology Madras, Chennai
BE Metallurgical Engineering	PSG College of Technology, Coimbatore

## SPONSORED PROJECTS

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1. CARS project on “Additive Manufacturing of Intricate Skeleton Having Micro Size Channels” for ARDE
2. PGAD, DRDO sponsored project on “Development of Valve Block using AM”
3. TATA Steel sponsored project on “Additive Manufacturing of M2 tool steel”

4. Co-PI in DST Sponsored SERB project on “Additive Manufacturing of Maraging steel” in collaboration with IIT BHU
5. Co-PI in DST-RCN funded Indo-Norway collaborative project on “Alloy development for additive manufacturing of prostheses and reconstructive implants”

## **HIGHLIGHTS OF R&D PROJECTS**

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1. Designed an innovative integration of two metallic bipolar plates to eliminate welding and to reduce the overall weight of the Fuel cell and successfully manufactured the part by AM with an internal cooling channel and validated the component successfully.
2. Developed Aluminum die with intricate features for ceramic extrusion process by AM and demonstrated successfully
3. Designed & developed metallic honeycomb structure for shock attenuation in defence application and demonstrated the part in the simulated condition
4. Designed & developed Tooling component for the PDC industry by Additive Manufacturing (AM) and validated successfully in real time condition
5. During the COVID pandemic, built metallic nozzles by AM for the manufacture of PPEs and supplied them to DRDO.
6. Developed AM process to manufacture NGV part on actual size with all the intricate features, and demonstrated the capability of the technology
7. Developed a hybrid additive manufacturing process by modifying the existing machine and successfully proved the concept by manufacturing, dissimilar materials like Cu-SS and Inconel-SS with metallurgical bonding
8. Using the a Hybrid AM technology, the repair of the Cap of the cryogenic milling vessel was done for DRDO
9. Built Spacer for fuel bundle simulator with thin wall structures by AM for nuclear application and demonstrated successfully
10. Developed Metallic Casing for Secure Pen drive for DRDO using AM

## **PUBLICATIONS & PRESENTATIONS**

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- Delivered an expert talk during Two Days Virtual Workshop on “RECENT TRENDS IN ADDITIVE MANUFACTURING,” held on 22nd — 23rd September 2021 at Christian College of Engineering & Technology, Bhilai
- Delivered a series of lectures at the “Additive Manufacturing training programmes” at CLPM, ARCI, Hyderabad
- Published Paper on “Additively Manufactured High-Performance Conformally Cooled H13 Tool Steel Die Insert for Pressure Die Casting” in Transactions of the Indian National Academy of Engineering, April 2021
- Delivered invited lecture on Additive Manufacturing in “One Day Workshop on Additive Manufacturing” during Feb 2020 at the Department of Metallurgical Engineering, NIT Warangal organized by the Metallurgical and Materials Engineering Association & Indian Institute of Metals-Student Chapter (NITW)
- Oral Presentation on “Design for AM: Self Supporting feature” during Feb 2019 at APMA International Conference on Powder Metallurgy in Asia

- Poster presentation on “Mechanical properties & corrosion behaviour of SLM built SS316L” in Indo-German bilateral workshop during Feb 2019 organized by NML & Leibniz – IWT, Bremen.

## **OTHER PROFESSIONAL ACTIVITIES**

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- Organized and conducted “Additive manufacturing training programmes” at ARCI which included lectures and practical sessions for industry personnel
- As a member of the Outreach programme and Open house committee at ARCI, organized the “Open house event” where about 1600 public visited and got exposure to advanced technologies housed at ARCI
- As a member of SAEINDIA, actively volunteered to organize and support many SAEINDIA Events at Hyderabad in various colleges and used the opportunity to encourage engineering students to pursue careers in technology development and research
- Organized “Technology Theatre Programme” which is a lecture series by various eminent people from industries and research organisations as part of the SAEISS Student Convention 2018

## **AWARDS & RECOGNITIONS**

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- ❖ Received “Recognition Award” 2019 from International President SAEINDIA

## **PROFESSIONAL MEMBERSHIP**

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- SAEINDIA since 2016
- The Indian Institute of Metals since 2018
- The Institute of Engineers (India) since 2021