

Dr. MAHESH V.P.

Materials Science and Engineering,
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Career Objective:

To seek a challenging position in an institution with an open, energetic and vibrant work environment which provides an opportunity for continuous learning and career growth.

Educational Qualifications:

Degree	Discipline/ Specialization	School/college	Board/University	Year	Aggregate
PhD	Materials Science and Engineering	Indian Institute of Technology Gandhinagar, Gujarat	Indian Institute of Technology Gandhinagar, Gujarat	2020	8.64 (CGPA)
M.Tech. (Research)	Process Metallurgy	National Institute of Technology (NIT-K) Surathkal, Karnataka	National Institute of Technology (NIT-K) Surathkal, Karnataka	2013	9.35 (CGPA)
M.B.A.	Human Resources Management	ICFAI University (Trivandrum Study Centre), Kerala	ICFAI University, Tripura	2010	60.9 (%)
B.Tech.	Mechanical Engineering	Government Engineering College, Calicut, Kerala	University of Calicut, Kerala	2007	69.2 (%)
Plus Two	Science, Mathematics	St. Antony's H.S.S. Pudukkad, Kerala	Board of Public Exam, Kerala	2002	79.1 (%)
S.S.L.C.	Science, Mathematics	Deepthi H.S. Thalore, Kerala	Board of Public Exam, Kerala	2000	85.2 (%)

Software Skills:

Auto CAD, Solid Works, ANSYS, COMSOL, Echem AnalystTM (GAMRY), ImageJ, Gwyddion

Work Experience:

- **Organization:** National Institute for Interdisciplinary Science and Technology (NIIST-CSIR), Trivandrum.
Working period: April 2011 to July 2013
Designation: Senior Research Fellow (CSIR-SRF)
- **Organization:** National Institute for Interdisciplinary Science and Technology (NIIST-CSIR), Trivandrum.
Working period: February 2008 to March 2011
Work Details: Project Assistant Gr. II in BRNS funded research project entitled “Development of Boron Carbide reinforced Aluminium Matrix Composites for Nuclear Applications”.
 - Aluminium Composite fabrication using Liquid Metal Stir Casting and Centrifugal Casting techniques for nuclear applications.
 - Experience in Foundry practices and production through metal casting
 - Working experience in Leica Optical Microscope with Image analyser
- **Organization:** Sieco Engineers Private Limited, Bangalore as Trainee Engineer.
Working period: November 2007 to February 2008.
Work Details: Supervision of production processes such as welding, machining, rolling and preparation of QC documents.

Academic Projects

Ph.D.: Aluminium Matrix Friction Stir Surface Composites – Study on Mechanical and Electrochemical Performance

- Surface composite fabrication using FSP
- Effect of process parameters on microstructure
- Structure- property correlation analysis
- Pitting Corrosion in surface composites
- Microstructural characterization
- Electrochemistry of surface composites
- Mechanical behavior of surface composites
- Tensile and wear testing

M. Tech. (Research): Effect of centrifugal force and addition of modifiers on morphology and distribution of eutectic/primary Silicon in hypereutectic Aluminium-Silicon alloy A390

B. Tech.: Design and Analysis of Piping and Associated Components of Proposed Co-Generation Plant, Kozhikode Diesel Power Project, Kerala.

Teaching Assistance in IIT Gandhinagar

- ❖ Metallography Lab
- ❖ Thermo-mechanical Processing
- ❖ Corrosion and Protection
- ❖ Introduction to Materials Science
- ❖ Science and Technology of welding and joining
- ❖ Operations Excellence

Achievements

CSIR- Senior Research Fellowship from Council of Scientific and Industrial Research (CSIR), Government of India, New Delhi in 2011

Patent details:

Amit Arora, Chandra Sekhar Tiwary, Arpan Rout, **Mahesh V. P.**, Anurag Krishnakedar Gumaste, '*Polymer reinforced metal matrix composites and a process for fabricating the same*', Patent Application No.: 201921032326, Date: 09.08.2019

Journal Publications:

- **Mahesh V. P.**, Anurag Gumaste, Neha Meena, J. Alphonsa, Amit Arora, '*Corrosion behavior of aluminium surface composites with metallic, ceramic and hybrid reinforcements using friction stir processing*', Metallurgical and Materials Transactions B, 51 (8) (2020), 2131–2146
- **Mahesh V. P.**, Ashutosh Kumar, Amit Arora, '*Microstructural modification and surface hardness improvement in Al-Mo friction stir surface composites*', Journal of Materials Engineering and Performance, 29 (8) (2020), 5147–5157
- **Mahesh V. P.**, Amit Arora, '*Single and double groove friction stir processing of Aluminum-Molybdenum surface composites*', Metallurgical and Materials Transactions A, 50 (11) (2019), 5373-5383
- Arpan Rout, Anurag Gumaste, Praful Pandey, Eliezer Fernando Oliveira, Solomon Demiss, **Mahesh V.P.**, Chintan Bhatt, Kiran Raphael, Ravi Sastri Ayyagari, Pedro A. S. Autreto, Mithun Palit, Femi Olu, Douglas S. Galvao, Amit Arora, Chandra Sekhar Tiwary, '*Bio-inspired Aluminum Composite Reinforced with Soft Polymer with Enhanced Strength and Plasticity*', Advanced Engineering Materials, 22 (3) (2019), 1901116
- Arora, A. Astarita, L. Boccarusso, **Mahesh V. P.**, '*Experimental Characterization of Metal Matrix Composite with Aluminium Matrix and Molybdenum Powders as Reinforcement*', Procedia Engineering 167 (2016), 245-251
- **Mahesh V. P.**, Praseeda S. Nair, Rajan T.P.D., Pai B.C., '*Processing of Surface Treated Boron Carbide Reinforced Aluminium Matrix Composites by Liquid Metal Stir Casting Technique*', International Journal of Composite Materials, 45(23) (2011), 2371-2378
- C.N. Athreya, **Mahesh V. P.**, Rajan T.P.D., Narayan Prabhu K., '*Equal Channel Angular Pressing of Aluminium- Alumina Metal Matrix Composite*', Materials Science Forum, 710 (2012), 247-252.
- **Mahesh V. P.**, Narayan Prabhu K., Rajan T.P.D., '*The Effect of Centrifugal Force on the Morphology and Distribution of Eutectic/ Primary Silicon in Unmodified and Sr Modified Hypereutectic Al- Si Alloy A390*', Indian Foundry Journal. 59 (7) (2013), 31-35
- **Mahesh V. P.**, J. Alphonsa, Amit Arora, '*Corrosion behavior of aluminium- molybdenum surface composites developed by friction stir processing*', Metals and Materials International, 2020 (Under review)
- Anurag Gumaste, **Mahesh V. P.**, Amit Arora, '*Fabrication, characterization and particle distribution analysis of Al 1050-B₄C friction stir surface composite*', (Under preparation)

Conference Presentations:

- **Mahesh V.P.**, Alphonsa Palakel, Amit Arora, '*Aluminium-molybdenum surface composites fabricated by friction stir processing: corrosion behavior in marine environment*', 2021 TMS Annual Meeting and Exhibition, Orlando, USA, 14-18th March 2021 (Abstract Accepted for Oral Presentation)
- **Mahesh V. P.**, Amit Arora, '*Molybdenum particle reinforced aluminium surface composites fabricated by friction stir processing*', 73rd Annual Technical Meeting, NMD-ATM 2019, Trivandrum, Kerala, India, 13-16th November 2019
- **Mahesh V. P.**, Amit Arora, '*Effect of Friction Stir Processing on the Surface Hardness of Aluminium-Molybdenum Surface Composites*', SMT 33- 33rd International Conference on Surface Modification Technologies, University of Naples, Naples, Italy, 26-28th June 2019
- **Mahesh V. P.**, Amit Arora, '*Surface property enhancement in aluminium metal matrix surface composites by friction stir processing*', International Conference on Advanced Materials (ICAM 2019) at Nirmalagiri College, Kerala, India, 12th-14th June 2019
- **Mahesh V. P.**; and Amit Arora, '*Microstructural analysis of Aluminum-Molybdenum surface composites by friction stir processing*', TMS Annual Meeting and Exhibition, Phoenix San Antonio, TX, USA, 10-14th March 2019
- **Mahesh V. P.**; and Arora, Amit, '*Aluminium-molybdenum system by friction stir surface alloying process*', 4th International Conference for Advanced Materials and Materials Processing (ICAMMP-IV), IIT Kharagpur, India, 5-7th November 2016.
- **Mahesh V. P.**; Singh, Amit Kumar; Sahlot, Pankaj and Arora, Amit, '*Advanced joining and processing of materials research at IIT Gandhinagar*', Young Professional Seminar: Advances in Welding Technology and Automation, Ahmedabad, India, 1st October 2016.
- Arora, Amit; Astarita, A.; Boccarusso, L. and **Mahesh V. P.**, '*Experimental characterization of metal matrix composite with aluminium matrix and Molybdenum powders as reinforcement*', International Symposium on Dynamic Response and Failure of Composite Materials, Italy, 7-9th September, 2016.
- **Mahesh V. P.**, Narayan Prabhu K., Rajan T.P.D., '*Effect of Centrifugal Force on Morphology and Distribution of Eutectic/Primary Silicon in Unmodified and Sr Modified Hypereutectic Aluminium-Silicon Alloy A390*', International Symposium for Research Scholars on Metallurgy, Materials Science and Engineering (ISRS-2012), December 13-15, IIT Madras
- **Mahesh V. P.**, Praseeda S Nair, Rajan T.P.D., Pai B.C., '*Effect of silica coating on the dispersion of Boron carbide particles in Aluminium matrix*', International Conference on Recent Trends in Materials Science and Technology- ICMST' at IIST, Trivandrum (2010).
- Praseeda S Nair, **Mahesh V. P.**, Rajan T.P.D., Pai B C, '*Structure and properties of boron carbide reinforced 6061 aluminium matrix composites*', 'ISAMPE National Conference on Composites -Emerging Trends in Composites Materials and Technology-INCCOM-8' (2009).
- **Mahesh V. P.**, Praseeda S Nair, Rajan T.P.D., Pai B C, '*Processing and Characterization of Boron Carbide Reinforced Aluminium Matrix Composites for Neutron Shielding Applications*', National Seminar on 'Special Purpose, Strategic and Futuristic Materials for High Technology Sectors', IIM Trivandrum Chapter, Trivandrum (2008).

Professional memberships:

- Member of *Indian Institute of Metals*, Trivandrum Chapter, Membership Number-T02 ASM01 41824
- Member of *Materials Research Society of India*, Trivandrum Chapter, Membership Number – LMB 1186
- Active member of *Mechanical Association*, Government Engg College, Calicut, Kerala

Extra-Curricular Activities:

Carrom, Football, Swimming, Contemporary Dancing

Personal Profile:

Father's Name: Mr. T.S. Purushothaman
Nationality: Indian
Date of Birth: 24-12-1984
Languages Known: English, Hindi, Malayalam, Tamil
Skype Details: mahesh.vp_1 (Skype Name), Thrissur (Location)

References:

- **Dr. Amit Arora**, Assistant Professor,
Materials Science and Engineering, Indian Institute of Technology Gandhinagar,
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- **Dr. Abhijit Mishra**, Associate Professor,
Materials Science and Engineering, Indian Institute of Technology Gandhinagar,
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- **Dr. T.P.D. Rajan**, Principal Scientist,
Materials Science and Technology Division, National Institute for Interdisciplinary Science
and Technology, (NIIST- CSIR), Trivandrum, Kerala-695018
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Declaration:

I hereby declare that the above mentioned information is correct up to my knowledge and belief and I bear the responsibility for the correctness of the above mentioned particulars.

Place: Gandhinagar

Date: 22-10-2020



Mahesh V. P.