Dr. Sudip Kumar Samanta

Chief Scientist
Head, Advanced Casting Research Group
Adjunct Professor, AcSIR, Ghaziabad,
Head, Knowledge and Technology Management Group (KTMG),
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Career Vision	Contribute to design-development of technological solutions for industrial and societal needs in an interdisciplinary research ambience
R&D Exposure & Interests	Powder Injection Moulding; Melting and Casting of Metals; Solidification Simulation; Additive Manufacturing; Product Development
Skills & Strengths	Analytical & simulation skills; Design of experiments; Experimentation and trouble-shooting in system development and implementation; Very good team spirit;
Collaborations	**R&D Institutes**: GTRE, Bengaluru; ARDB, New Delhi; CMTI, Bengaluru; NIAMT, Ranchi (Formerly NIFFT); ISAC, Bengaluru; IISc, Bengaluru; Jadavpur University; **Industry**: Sona Koya; Bharat Heavy Electricals Limited (BHEL), Haridwar; J S Auto Limited, Coimbatore; ANTICO, Mumbai; Durgapur Steel Plant, Durgapur; International Tractor Limited, Hoshiarpur; Mahindra & Mahindra, Chennai;
Academic Background (Chronological Order)	**Doctor of Philosophy (Ph.D.), Indian Institute of Technology (IIT), Kharagpur** **Specialization: Metallurgical & Mechanical Engineering** **Jan 2011** • Doctoral Dissertation: *Multiphase Flow Numerical Modelling for Simulation of the Injection Stage of Power Injection Moulding (PIM)* • Department of Metallurgical and Materials Engineering • Thesis Advisors: (Retd.) Prof. Mahadev Malhar Godkhindi, IIT, Kharagpur and Prof. Himadri Chattopadhyay, Jadavpur University (Formerly with CSIR-CMERI Durgapur) **Master of Technology (M. Tech.), Regional Engineering College, Durgapur, Burdwan Univeristy (Currently NIT, Durgapur)** **Jul 1995** **Specialization: Design & Production Engineering** **Bachelor of Engineering (B. E.), Bangalore University** **Jul 1993** **Specialization: Mechanical Engineering**
Professional Experience (Chronological Order)	**1. Chief Scientist (Group – 'A' Scientific)** **Since Jan 2020** **CSIR-Central Mechanical Engineering Research Institute** Head, Advanced Casting Research Group, Head, Knowledge and Technology Management Group (KTMG), Mahatma Gandhi Avenue, Durgapur. Pin: 713209. West Bengal (State). **Profile:** Principal Investigator of Research Projects and Institutional Management **2. Senior Principal Scientist (Group – 'A' Scientific) Jan 2015 to Dec 2019** **CSIR-Central Mechanical Engineering Research Institute** Near Net Shape Manufacturing Group & Center for Advanced Manufacturing & Metrology, Mahatma Gandhi Avenue, Durgapur. Pin: 713209. West Bengal (State). **Profile:** Principal Investigator of research projects

3. Principal Scientist (Group – 'A' Scientific) **Jan 2010 to Dec 2014**
CSIR-Central Mechanical Engineering Research Institute, Durgapur
Foundry Group
Mahatma Gandhi Avenue, Durgapur. Pin: 713209. West Bengal (State).
Profile: Principal Investigator / Co-Principal Investigator / Member of research projects

4. Scientist E-I (Group – 'A' Scientific) **Jan 2006 to Dec 2009**
CSIR-Central Mechanical Engineering Research Institute, Durgapur
Foundry Group,
Mahatma Gandhi Avenue, Durgapur. Pin: 713209. West Bengal (State).
Profile: Principal Investigator / Member of research projects

5. Scientist – 'C' (Group – 'A' Scientific) **Jan 2001 to Dec 2005**
CSIR-Central Mechanical Engineering Research Institute, Durgapur.
Foundry Group,
Mahatma Gandhi Avenue, Durgapur. Pin: 713209. West Bengal (State).
Profile: Principal Investigator / Member of research projects

6. Scientist – 'B' (Group – 'A' Scientific) **Dec 1996 to Dec 2000**
CSIR-Central Mechanical Engineering Research Institute, Durgapur.
Foundry Group,
Mahatma Gandhi Avenue, Durgapur. Pin: 713209. West Bengal (State).
Profile: Member of research projects

7. Junior Research Fellow (JRF) **Aug 1995 to Dec 1996**
CSIR-Central Mechanical Engineering Research Institute, Durgapur.
Foundry Group,
Mahatma Gandhi Avenue, Durgapur. Pin: 713209. West Bengal (State).
Profile: Member of research projects

Teaching Experience

Professor (Adjunct Faculty), Academy of Scientific & Innovative Research (AcSIR), Ghaziabad **Since 2015**

Subject Taught

- Near Net Shape Manufacturing

Thesis Supervision

- **Currently Supervising** PhD Dissertation Work of Three (03) Scholars registered in AcSIR, Ghaziabad
- **Co-Supervised** PhD Dissertation Work of a Scholar from AcSIR, with Dr. Naga Hanumaiah, Director, CMTI, Bengaluru and Dr. (Mrs) Shikha Ambastha, CSIR Head. Qtrs, New Delhi. **Scholar Graduated**
- **Co-Supervised** PhD Dissertation Work of a Scholar from Jadavpur University (Scholar Graduated), with Prof. Himadri Chattopadhyay, Javapur University, Kolkata and Prof. Santanu Das, Kalyani University, Kalyani. **Scholar Graduated**
- **Co-Supervised** PhD Dissertation Work of a Scholar from IISc Bengaluru , with Prof. Pradip Dutta, IISc Bengaluru. **Scholar Graduated**
- **Co-Supervised** Master's Thesis Work of a Student from NIT, Durgapur, with Prof. Ashim Das, NIT, Durgapur. **Student Graduated**

Project Involvement (Last Decade)

Involvement in CSIR, Industry and Sponsored Projects

- **Co-Principal Investigator**, Establishing technology for higher yield of critical castings -CFFP, BHEL, Haridwar. *Sponsor: BHEL, Haridwar.*
  On-going Since Oct 2023
- **Principal Investigator**, Development of aeronautical standard, high strength, long endurance, casting with Al-7Si-0.3Mg-0.05-Mn-0.05Cu alloy for Aero-Engine

Power Transmission Box. *Sponsor: GTRE, Bengaluru., Govt. of India.*
On-going Since Aug 2021

• **Principal Investigator**, Development of screw extruder based additive manufacturing system for developing ceramic core to be used in turbine blade casting. *Sponsor: Aeronautical Research & Development Board., New Delhi, Govt. of India.*
On-going Since Oct 2021

• **Principal Investigator**, Sustainable metal casting using advanced research and technology (SMART Foundry, 2020). *Sponsor: DST., Govt. of India.* **2016-2020**

• **Principal Investigator**, Development of semi-automatic machine and fixtures for machining of surgical forceps. *Sponsor: Baruipur Surgical Cluster* **2017-2021**

• **Co-Principal Investigator**, Design and development of Mob Control Vehicle (MCV). *Sponsor: CSIR, New Delhi* **2017-2020**

• **Principal Investigator**, Preliminary study to develop a fuel housing system for gas turbine engine by melting and solidification of aluminium base alloy. *Sponsor: Gasturbine Research Establishment, Bangalore (DRDO)* **2017-2020**

• **Principal Investigator**, Rheo pressure die casting of ADC-12 Aluminium alloy. *Sponsor: Sona Koyo Steering Systems Ltd., Gurgaon* **2014-2017**

• **Principal Investigator**, Design and development of Multi-Material Deposition (MMD) system. *Sponsor: DST, Govt. of India* **2012-2017**

• **Co-Principal Investigator**, Rheo pressure die casting of nano TiB2 reinforced Al-Mg alloy composite and Mg2Si reinforced Al-Mg alloy composite. *Sponsor: CSIR, Govt. of India* **2012-2017**

• **Principal Investigator**, Micro Powder injection moulding of metals and ceramics. *Sponsor: CSIR, Govt. of India* **2012-2017**

• **Principal Investigator**, Facility for rheo pressure die casting. *Sponsor: DST & CSIR, Govt. of India* **2010-2013**

• **Principal Investigator**, Mechanized system to replace tuyere stock assembly. *Spon-sor: DST & CSIR, Govt. of India* **2010-2013**

• **Principal Investigator**, Facility for rheo pressure die casting. *Sponsor: DST & CSIR, Govt. of India* **2010-2013**

Administrative Position Held (Past & Present)

Positions held at CSIR-CMERI Durgapur, Indian Institute of Foundrymen, Academic Institutes, DST Board

■ Chairperson, Collegium Committee, Sr.Pr. Scientists, CSIR-CMERI **2023**

■ Member, Empowered Committee for Scientists, CSIR-CMERI **2023**

■ Chairperson, Academic Committee of AcSIR and Chairperson, Normalization Committee for Group III Technical Staff **2023**

■ **Chairperson**, Medical and Biometric Attendance Committee, CSIR-CMERI, Durgapur **Since 2023**

■ **Head**, Knowledge and Technology Management Group (KTMG), CSIR-CMERI, Durgapur **Since Sep 2023**

■ Head, Business Development Unit (BDU), CSIR-CMERI **Since Mar 2023**

■ Member, FR56J committee, CSIR-CMERI Durgapur **Since 2022**

■ Member, Council of Eastern Region, IIF **Since Aug 2021**

■ **Head**, Foundry Group, CSIR-CMERI Durgapur **2020-2022**

■ **Chairman**, Technical & Purchase Committee (T&PC), CSIR-CMERI Durgapur **2020-2022**

■ **Chairman**, Durgapur Activity Center, Indian Institute of Foundrymen **2019-2021**

■ **Coordinator**, PG-Diploma Program on Advanced Manufacturing Technologies (PGDAMT), CSIR-CMERI Durgapur **Since 2017**

■ **Member**, Collegium Committee for performance evaluation of Trainee Scientist, Scientists and Principal Scientists, CSIR-CMERI Durgapur **2011-2013, 2017-2018**

■ **Member**, Technician recruitment committee, CSIR-CMERI Durgapur **2017-2018**

■ **Chairman**, Fabrication Committee, CSIR-CMERI Durgapur **2016-2020**

■ **Head**, Center for Advanced Manufacturing and Metrology (CAMM), CSIR-CMERI Durgapur **2016-2020**

■ **Member**, Enterpreneurship Development Board, Dr. B. C. Roy Engineering College, Durgapur **2015-2016**

■ **Coordinator**, Central Research Facility, CSIR-CMERI Durgapur **2011-2016**

■ **Member**, Project Review Committee of Technology System Development Board of DST **2011-2013**

Award / Achievment

National and International Fellowships Received for Collaborative Research

■ Fellow of Institute of Engineers, Institute of Engineers (India), IEI, Kolkata **2020**

■ DAAD Fellowship from Foundry Institute, RWTH-Aachen, Germany **2004-2005**

■ JICA Fellowship from TNIRI, Sendai, Japan **1998-1999**

Technologies Developed / Implemented

Developed "Process and System for Additive Manufacturing of Complex Shaped Ceramic Components" with team **2021-2023**

Developed "Water Soluble Ceramic Core Manufacturing Process for Casting of Critical Components" with team **2018-2020**

Developed a "Mob Control Vehicle (MCV)" with team MCV **2017-2020**

Developed an innovative product "IoT enabled SMART Foundry" with SMART Foundy 2020 consortium **2016-2021**

Developed a novel Process for "Rheo-Pressure Die-Casting" **2014-2016**

Developed "Process and System for Direct Energy Metal Deposition" with team **2012-2017**

Developed Nickel Wicks used in Loop Heat Pipes for ISRO, Bangalore **2008-2011**

Implemented "Powder Injection Moulding" Technology **2007-2009**

Technology Transfer Agreements

Transferred Portable Touch Free Soap-cum-Water Dispensing System, COVID-19 Initiative of CSIR-CMERI Durgapur. Licensee: Ghosh Enterprise, Burdwan **2020**

Transferred Design of 11 kWp Solar Tree. Licensee: Sole Energy Pvt. Ltd. New Delhi. **2019**

Transferred Solar Artifact. Licensee: Lords Bluetech Co. Ltd., Kolkata **2016**

Transferred Processing of 316L Stainless Steel Powder Through Metal Injection Moulding (MIM) Route. Licensee: ANTICO, Mumbai **2009**

Prototype / Process / Pilot plant / Demonstrable Units Developed

Development and Successful Delivery of Prototypes and Processes

Commissioning of "IoT enabled SMART Foundry" at National Institute of Advanced Manufacturing Technology (NIAMT), Ranchi: **In-Progress** **2023**

Developed a PIM based process for manufacturing "Copper Nozzles" for Gas Cutting and Welding applications for Bargachia Cluster, West Bengal (State). **Implementation is In-Progress**. **2019-2023**

Developed a need based Prototype Special Purpose Machine for manufacturing of "Surgical Tools". **System is ready for deployment** at Surgical Cluster, Baruipur, West Bengal (State). **2019-2023**

Developed an IoT enabled SMART Foundry with SMART Foundy 2020 consortium. Operational **System is Demonstrated** in National Conference cum Industry Meet on Foundry 4.0 − Opportunities and Challenges. **2016-2021**

Developed and Delivered Five (05) Prototypes of Fuel Housing System for supplying metered quantity of fuel in gas turbine engine to Gas Turbine Research Establishment (GTRE-DRDO), Bangalore in 2020. **2018-2020**

Developed a Mob Control Vehicle (MCV) for riot control scenario with team MCV. **Modules of Technology commercialized to Industry**. **2017-2020**

Developed a Pilot Plant for "Rheo-Pressure Die-Casting". Pilot plant developed in 2014 and is operational ever since. **2014-2016**

Developed and Delivered Five (05) Prototypes of Nickel Wicks of Loop Heat Pipes used for Thermal Management in Satellites to ISRO Satellite Center (ISAC), Bengaluru in 2011. **2008-2011**

Contribution to Facility Creation

Notable Contributions in Facility Creation at Institutional Level

Modernized the manufacturing facilities of Center for Advanced Manufacturing and Metrology (CAMM), CSIR-CMERI Durgapur: CNC Bay (with CNC Machines), Robotic Welding, Plasma Profile Cutting System, Hydraulic Press, Centralized Compressor, Overhead Crane. CAMM is currently serving the needs of researchers at CSIR-CMERI, academia and industry **2017-2020**

Established the powder injection moulding (PIM) facility for manufacturing of minia-ture, small and complex components out of metals and ceramics at CSIR-CMERI Durgapur. PIM facility is currently serving the needs of researchers at CSIR-CMERI, academia and industry **2002-2007, 2012-2017**

Established a Central Research Facility (CRF) at CSIR-CMERI Durgapur with state-of-the-art infrastructure (FESEM with EDS, High Cycle Fatigue Testing System, Gas Chromotography, Photo Image Velocimetry). CRF is currently serving the needs of researchers at CSIR-CMERI, academia and industry **2011-2020**

Established Semi-Solid Casting (Rheo Pressure Die Casting) at Foundry, CSIR-CMERI Durgapur. The facility is being used for developing light-weight, high-strength, Aluminium alloy components of automobile industry **2010-2014**

References & Association

Prof. Gautam Biswas — **Former Director, CMERI Durgapur**
Jagadish Chandra Bose Fellow and Professor Emeritus, — **Association: Since 2009**
Indian Institute of Technology, Kanpur.
Pin: 208016. Uttarpradesh (State). India
Phone: +91-9559754134
E-mail: gtm@iitk.ac.in

Dr. Nagahanumaiah — **Former Chief Scientist, CSIR-CMERI**
Director — **Association: Since 1998**
Central Manufacturing Technology Institute (CMTI)
Autonomous Institute under Ministry of Heavy Industries, Govt. of India.
Tumkur Road, Bangalore.
Pin: 560022. Karnataka (State). India.
Phone: +91-9449842675
E-mail: director.cmti@nic.in

Dr. Patha Protim Chattopadhyay — **Academic Research Collaborator**
Director — **Association: Since 2010**
National Institute of Advanced Manufacturing Technology (NIAMT), Ranchi.
Pin: 834003. Jharkhand (State). India.
E-mail: director.nifft@gov.in

Dr. (Mrs.) Suman Kumari Mishra — **Former Director, CSIR-CMERI**
Director — **Association: Since 2021**

CSIR-Central Glass and Ceramic Research Institute, Kolkata. Phone: +91-9801341664
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Dr. Gautam Sutradhar **Senior Research Collaborator**
Director **Association: Since 2015**
National Institute of Technology, Jamshedpur. Phone: +91-7980946691
Pin: 831014. Jharkhand (State). India. E-mail: director@nitjsr.ac.in

Memberships

Fellow Member, The Institution of Engineers (India)
Member, Council of Eastern Region, The Institute of Indian Foundrymen (IIF)
Member, The Institute of Indian Foundrymen (IIF)

Master's and Doctoral Supervision

- PhD Dissertation Supervision: **Degree Awarded - Three (03)**
- PhD Dissertation Supervision: **OnGoing - Four (04)**
- MTech Thesis Supervision: **Degree Awarded - One (01)**

Publications, IPR & Industry News

Please Refer to Annexure A

Major Techno-Scientific Contributions in Career

Please Refer to Annexure B

A Summary of My Goal Oriented Research Work

Thanks to my assignments, I have been fortunate to avail opportunities to work in a wide variety of applied research problems for manufacturing of a variety of components in industrial, societal and strategic applications. A practitioner by profession, I have been actively working towards developing **newer net-shape manufactur-ing processes including Power Injection Moulding, Additive Manufacturing, Semi-Solid Casting and product development**. Ever since I have joined as a Junior Research Fellow at CSIR-CMERI, Durgapur, I have been working towards accomplishing the objectives of goal oriented research leading to technological solutions in "***Near-Net Shape Manufacturing***". Specifically, I am working with a vibrant team of scientists and talented technical staff on interdisciplinary r-n-d projects towards customization of conventional *power injection moulding and additive manufacturing processes* for special product development. *Needless to mention*, when it comes to implementing conventional processes, the inherent intricacy of some of the specialized products especially in the industrial and strategic sectors pose implementation challenges; as a result, there was a natural drive to explore solutions to address potential bottlenecks. For the same reason, I have been focussing on developing methods for customizing prevalent processes, which are essentially amenable from a system level implementation perspective in the Indian context. Hence, to accomplish the objective of efficient realization of specialized applications, my interests focus on "***translational research***" targeting design-development of funtional products and processess to r-n-d and industry sectors.

Realizing the significance of customization of casting and melting processes, I have developed a new Cooling Slope Technique based Rheo Pressure Die Casting System, a first of its kind system in India yielding $10-15\%$ improvement in mechanical properties. The system is demonstrated to the industry by developing automobile components out of two variants of Aluminium alloys. I have also established a novel manufacturing process for developing a porous nickel wick used for thermal management in satellites through Powder Injection Moulding (PIM) and implemented PIM process in the Indian industry for commercialization. Further, I have played an active role in manufacturing and development of mob control vehicle for strategic sector and the design-development of IoT enabled smart foundry for MSME casting sector.

Currently, I am developing an extrusion based ceramic additive manufacturing system and process for manufacturing of complex ceramic cores in strategic applications. I am also looking for newer research collaborations for solving burning engineering problems of national importance in *near-net shape manufacturing and allied research areas.*

Annexure A: Publications, IPR and Industry News

Peer Reviewed Journal Publications

1. Tishta Das, **Sudip K Samanta**, Manidipto Mukherjee, Siddappa Y Pujar, Aditya K Lohar, "A Case Study of Repairing a Steel Casting Component Using WAAM", *Transactions of the Indian National Academy of Engineering*, Vol. 8, pp. 683–690, 2023.

2. Tishta Das, Balaji Chandrakanth, **Sudip K Samanta**, Aditya K Lohar, "Study of multi-layer deposition in L-DED process for 15–5 PH stainless steel: A numerical and experimental approach", *Journal of Manufacturing Processes*, Vol. 99, pp. 469-484, 2023.

3. Sujeet Kumar Gautam, Manab Mallik, Himadri Roy, Aditya Kumar Lohar and **Sudip Kumar Samanta**, "Wear and Mechanical Properties of In Situ A356 / 5%TiB2 Composite Synthesis by Cooling Slope Technique", *International Journal of Metal Casting*, Vol. 17, pp. 2239–2251, 2023.

4. Sujeet Kumar Gautam, Himadri Roy, Aditya Kumar Lohar and **Sudip Kumar Samanta**, "Rheological properties of ADC12 Al alloy in the semi-solid state", *International Journal of Cast Metals Research*, Vol. 36, no. 1-3, pp. 18-26, 2023.

5. Tishta Das, Manidipto Mukherjee, Dipankar Chatterjee, **Sudip K. Samanta**, Aditya K. Lohar, "A comparative evaluation of the microstructural characteristics of L-DED and W-DED processed 316L stainless steel", *CIRP Journal of Manufacturing Science and Technology*, Vol. 40, pp. 114-128, 2023.

6. Gautam, S.K., Roy, H., Lohar, A.K. , **Samanta SK.**, "Studies on mold filling behavior of Al–10.5Si–1.7Cu Al alloy during Rheo Pressure Die Casting System", *International Journal of Metalcasting*, 2023.

7. D Mukherjee, M Mukherjee, N Mandal, **Sudip Kumar Samanta**, A Maiti,"Effect of micro-alloying on the characteristics of as-cast Al-Zn-Cu-Mg-X alloy with varying Cu and Zn", *Materials Today Communications*, Vol. 34, 2023.

8. Arjita Das, Shikha Ambastha, Nivedita Priyadarshni, **Sudip Samanta**, Nagahanumaiah,"Fabrication of hydrophobic surfaces on Titanium using Micro-EDM exhibiting antibacterial properties", *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering*, pp. 1093-1101, Vol. 236, No. 8, Dec, 2022

9. Islam, ST., **Samanta, SK.**, and Das, SK., Chattopadhyay. H., "A numerical model to predict the powder binder separation during micro-powder injection molding", *Journal of American Ceramic Society*, pp. 1-13, Feb 2022.

10. Pant, P., Chatterjee, D., **Samanta, S. K.**, and Lohar, A. K., "Experimental and Numerical Analysis of the Powder Flow in a Multi-Channel Coaxial Nozzle of a Direct Metal Deposition System", *ASME Journal of Manufacturing Science and Engineering*, pp. 01710031-9, Vol. 143, No. 7, Feb 2021.

11. Das, A., **Samanta, S.**, Saha, S., and Nagahanumaiah, "Study on material removal rate and surface roughness using graphene as dielectric additives in micro-electric discharge machining", *Manufacturing Technology Today*, Vol. 20, no. 11-12, pp. 3–9, 2021.

12. Piyush Panth, Dipankar Chatterjee, **Sudip Kumar Samanta**, Titas Nandi and Aditya Kumar Lohar, "A bottom-up approach to experimentally investigate the deposition of austenitic stainless steel in laser direct metal deposition system", *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 41, Article No. 88, Jan 2020.

13. Arjita Das, Shikha Ambastha, Sourav Haldar, **Sudip Samanta**, Nagahanumaiah, "A novel methodology for spark gap monitoring in Micro-EDM using optical fiber Bragg grating", *IEEE Transactions on Instrumentation and Measurement*, pp. 4387-4394, Vol. 69, No. 7, Jul 2020 (First published in September 2019).

14. Sk Tanbir Islam, **Sudip Kumar Samanta**, A K Lohar, A Bandhopadhyay, "Rheological study of alumina feedstock for a micro-powder injection moulding application", *Materials Research Express*, Article. 095204, pp. 1-9, Vol. 6, No. 7, July 2019.

15. Prosenjit Das, Bikash Bhuniya, **Sudip K. Samanta**, Pradip Dutta, "Studies on die filling of A356 Al alloy and development of a steering knuckle component using rheo pressure diecasting system", *Journal of Materials Processing Technology*, pp. 293-311, Vol. 271, Sept 2019.

16. Piyush Panth, Dipankar Chatterjee, Titas Nandi, **Sudip Kumar Samanta** and Aditya Kumar Lohar, "Statistical modelling and optimization of clad characteristics in laser metal deposition of austenitic stainless steel", *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, Vol. 41, No. 283, Jun 2019.

17. Arjita Das, Shikha Ambastha, Sourav Haldar, **Sudip Samanta**, Nagahanumaiah, "Fibre bragg grating sensors for measuring spark gap in Micro-EDM in real-time", *Manufacturing Technology Today*, Vol. 18, No. 7, pp. 3-8, July 2019. Publisher: CMTI, Bangalore. ISSN: 0972-7396.

18. Veeresh Nayak Chinnathaypg, Ramesh Motagondanahalli Rangarasaiah, Vijay Desai, **Sudip Kumar Samanta**, "Evaluation of Wear Behaviour of Metal Injection Moulded Nickel Based Metal Matrix Composite", *Silicon*, pp. 175–185, Vol. 11, Feb 2019.

19. Veeresh Nayak Chinnathaypg, Ramesh Motagondanahalli Rangarasaiah, Vijay Desai, **Sudip Kumar Samanta**, "Evaluation of Mechanical Properties for Nickel Based Steel Produced by Metal Injection Moulding and Sintered Through Conventional and Microwave Method", *Chemical Engineering Transactions*, pp. 799-804, Vol. 66, Jul 2018.

20. Veeresh Nayak Chinnathaypg, Ramesh Motagondanahalli Rangarasaiah, Vijay Desai, **Sudip Kumar Samanta**, "Sintering metal injection molding parts of tungsten-based steel using microwave and conventional heating methods", *Proceedings of the Institution of Mechanical Engineers Part B Journal of Engineering Manufacture*, pp. 2138-2146, Vol. 233, No. 11, Dec 2018.

21. Veeresh Nayak C, M R Ramesh, Vijay Desai, **Sudip Kumar Samanta**, "Fabrication of stainless steel based composite by metal injection moulding", *Materials Today: Proceedings*, pp. 6805-6814, Vol. 5, Part. 2, No. 2, 2018.

22. Sujeet Kumar Gautam, Nilrudra Mandal, Himadri Roy, Aditya Kumar Lohar, **Sudip Kumar Samanta**, Goutam Sutradhar, "Optimization of processing parameters of cooling slope process for semi-solid casting of ADC 12 Al alloy", *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, Vol. 40, Article. 291, May 2018.

23. Sujeet Kumar Gautam, Himadri Roy, Aditya Kumar Lohar, **Sudip Kumar Samanta**, Goutam Sutradhar, "Effect of processing routes on structure-property co relationship of ADC 12 Al alloy", *Materials Research Express*, Vol. 6, No. 2, Feb, 2018.

24. Sk Tanbir Islam, **Sudip Kumar Samanta**, Nagahanumaniah, Himadri Roy, Aditya Kumar Lohar, Santanu Das and Asish Bandyopadhyay, "Rheological Behavior of 316L Stainless Steel Feedstock for μ-MIM", *Materials Today Proceedings*, pp. 8152-8158, Vol. 5, No. 2, Part. 2, Apr 2018.

25. Prosenjit Das, **Sudip K Samanta**, Biswanath Mondal, Pradip Dutta, "Multiphase Model of Semisolid Slurry Generation and Isothermal Holding During Cooling Slope Rheo processing of A356 Al Alloy", *Metallurgical and Materials Transactions B*, pp.1925-1944, Vol. 49, No. 4, Aug 2018.

26. Himadri Chattopadhyay, **Sudip K. Samanta**, Gautam Biswas and Bharat B. Sharma, "Direct numerical simulation of evaporation in a biporous media", *Journal of Mechanical Science and Technology*, pp. 2635-2641, Vol. 31, Jul 2017.

27. Das P, Islam SkT, **Samanta SK**, Das S., "Microscale deformation behavior of rheocast Al-7Si-0.3Mg alloy", *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, Vol. 230 (6), pp. 1041-1061, 2016.

28. Prosenjit Das, **Sudip K. Samanta**, Supriya Bera, Pradip Dutta, "Microstructure evolution and rheological behaviour of cooling slope processed Al-Si-Cu-Fe alloy slurry", *Metallurgical and Materials Transactions A*, pp. 2243-2256, Vol. 47, No. 5, Feb 2016.

29. Das, P., **Samanta, S.K.**, Tiwari, S. et al., "Die Filling Behaviour of Semi Solid A356 Al Alloy Slurry During Rheo Pressure Die Casting", *Trans. Indian Inst. Met.*, Vol. 68, pp. 1215–1220, 2015.

30. S. Thadela, B. Mandal, Prosenjit Das, H. Roy, A.K.Lohar and **S. K. Samanta**, "Rheological behavior of semi-solid TiB2 reinforced Al composites", *Transactions of Nonferrous Materials Society of China*, pp. 2827-2832, Vol. 25, No. 9, Sep 2015.

31. Prosenjit Das, Bijay Kumar Show, Akash Rathore, **Sudip K. Samanta**, "Wear behaviour of cooling slope rheocast A356 alloy", *Tribology Transactions*, pp. 1054-1066, Vol. 58, No. 6, Sep 2015.

32. S K Mishra, H Roy, A K Lohar, **S K Samanta**, S Tiwari and K Dutta, "A comparative assessment of crystallite size and lattice strain in differently cast A356 aluminium alloy", *IOP Conference Series: Materials Science and Engineering*, Vol. 75, Feb 2015.

33. Santosh Kumar, Prosenjit Das, Sandeep K. Tiwari, Manas K. Mondal, Supriya Bera, Himadri Roy and **Sudip K. Samanta**, "Study of Microstructure Evolution during Semi-Solid Processing of an in-Situ Al Alloy Composite", *Materials and Manufacturing Processes*, pp. 356-366, Vol. 30, No. 4, Jan 2015.

34. Prosenjit Das, **Sudip K. Samanta**, Pradip Dutta, "Rheological behaviour of Al-7Si-0.3Mg alloy at Mushy state", *Metallurgical and Materials Transactions B*, pp. 1302-1313, Vol. 46, Jan 2015.

35. Prosenjit Das, **S. K. Samanta**, P. Kumar, P. Dutta, "Phase field simulation of equi-axed microstructure formation during semi-solid processing of A380 Al alloy", *ISIJ International*, pp. 1601-1610, Vol. 54, No. 7, 2014.

36. Prosenjit Das, **S. K. Samanta**, R. Das, P. Dutta, "Optimization of degree of sphericity of primary phase during Cooling Slope casting of A356 Al alloy: Taguchi method and Regression analysis", *Measurement*, pp. 605-615, Vol. 55, Sep 2014.

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