

**HIMANSHU KHANDELWAL**

BE, M. Tech, PhD

8+ Year Experience

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**Areas of Interest: Methoding of Casting, Product design & development, Flow and Solidification Simulation, Mold and Core Making, Smart Manufacturing, Process Optimization, Data Analytics and Machine Learning,**

#### PROFESSIONAL SUMMARY

An academic professional with a passion for R&D and Innovation with 10+ Year of strong expertise in Manufacturing Process Optimization and Data Analytics, Data Science and Manufacturing.

- Experienced in preparing a roadmap for new R&D projects and in-time execution by Teamwork and collaboration with cross-functional groups
- I have been involved in the end-to-end design, development and implementation of data analytics-based process optimization tool for Manufacturing Industry.
- I am well versed in problem-solving, analytical skills, understanding other people perspectives and coming up with creative solutions. I am a quick learner with good skepticism muscles, passion to grasp new ideas, concepts and communicate clearly and effectively.
- Competence in Leadership skills - Managed data scientist and implementation engineer team
- Education administrator – Proposed courses, directed and coordinated admissions and academic activities
- Deep Expertise in Foundry Tooling and Methoding, Moulding and Core Making, Process Optimization.

#### ACADEMICS

Examination	University/Institute	Branch/Specialization	Year
Doctorate	IIT Bombay	Mechanical Engineering	2017
Post Graduate	IIT Roorkee	Metallurgical & Materials Engineering	2011
Graduation	MBM Engg. College, Jodhpur	Production & Industrial Engineering	2009
Intermediate	B.S.E.R., Ajmer	Science Maths	2004
Matriculation	B.S.E.R., Ajmer	As per B.S.E.R.	2002

#### PhD thesis title, Guide Name, Institution/Organization/University

Title	Rapid Casting of Near-net Thin-wall Metal Parts in Chemically Bonded Sand Molds
Guide	Prof. B. Ravi, Institute Chair Professor, IIT Bombay
Year of award	12, Aug, 2017 (defence 19 <sup>th</sup> June 2017)

#### WORK EXPERIENCE

**Assistant Professor at Foundry Technology Department, NIAMT Ranchi.**

*[July 2017-till now]*

*National Institute of Advanced Manufacturing Technology is a Centrally Funded Technical Institute under MoE (GOI).*

*(Formerly National Institute of Foundry and Forge Technology - NIFFT)*

- Joined NIFFT with an ambition to reform Foundry Learning by bringing Cutting Edge Technologies (3D printing, Automation, Machine Learning, and Artificial Intelligence) in the Academic Curriculum.
- Proposed and developing a SMART Casting Facility for Academic Learning and Research purpose at NIAMT.
- Proposed and coordinating a Post Graduate course in Smart Manufacturing using virtual learning environment.
- **Responsibilities:** Associate Dean Academics, Course Coordinator Smart Manufacturing, Social Media Champion, Member of Purchase committee, SPOC Smart India Hackathon, Coordinator Centralized Computer Center, Nodal Officer for Institute PR, Member of HEFA purchase committee.
- **Collaboration:** Collaborative research activities with CMERI Durgapur, CMTI Bangalore, Marwari University
- **Course Taken (ADC/UG/PG):** Foundry Tooling and Methoding, Design and Simulation, Near Net Shape Processes, Production Planning and Control, Data Analytics, Overview of Smart Manufacturing and Artificial Intelligence, Physical Metallurgy, Introduction to Materials Engineering

**Research Scientist at MPM Infosoft Pvt. Ltd. at IITM Research Park.**

[Nov 2016-Jul 2019]

MPM Infosoft developed SandMan, the World's first Cloud based Predictive & Prescriptive Analytics platform for the Metal-casting manufacturing industry.

- Leading the Data Science Research and Sandman Analytics implementation and performance management team
- Responsible for defining and detailing the problem statement by discussing with stakeholders and preparing the roadmap for Data Analytics driven solution in the field of Metal casting Manufacturing Process Optimization.
- Made key contributions to enhancing the advanced multi-variate regression algorithms and machine learning models for casting rejections and dose by need optimization in the Sandman Analytics platform.
- Instrumental in formulating and developing Machine learning model for Foundry test cycle optimization and integrating it in to the product.
- Guided the data scientists and analysts in formulating optimization problem and implementing machine learning models for new projects
- Responsible for writing technical articles and patent applications for all new developments
- Conduct regular Analytics based performance evaluation for Clients and provide optimization changes including building / tuning new machine learning models to tune the processes.
- Instrumental in improving the Sandman Analytics product features, design aspects
- Involved in development of Sandman based IOT solution for Foundry Industry with SCADA, SMC/SAP integration in-line with Industry 4.0
- Played a key role in the end-to-end implementation Sandman for leading clients in India (Tata Motors, Nelcast, Ashok Leyland, Mahindra, Brakes India etc).

**External consultations to industries and academics in Casting design & Simulation field.**

[Oct 2013-Oct 2015]

- Instrumental in supporting 3D Foundry Tech for sale of E-Foundry Labware product offering.
- Part-time consultancy to industries / academics in Casting design and development, flow & solidification Simulation.

**Senior Research Scholar in Mechanical Engineering Department, IIT Bombay.**

[July 2012- Nov 2016]

- Responsible for setting up the experimental rapid casting facility in the lab, as well as replicating it in other institutes.
- Handled several high-end equipment's including X-Ray diffraction, SEM, FTIR, AFM, TG-DTA, PLD coating, Alicona Microscopy, CMM, Dilatometry and EDAX.
- Created several case studies of flow and solidification simulation of experimental as well as industrial castings
- Assisted in organizing conferences, and attended several other conferences related to materials and manufacturing.

**PROJECTS****Establishing Technology for Higher Yield of Critical Castings- CFFP, Haridwar***PI / NIAMT Ranchi with CSIR- CMERI (Sponsored - BHEL Haridwar, Cost: 130 Lakh)*

[Oct 2023 - Feb 2025]

- Technology for yield improvement of casting by MEF extension of Riser
- Review the existing methoding and submission of new methoding along with simulation study for 45 ton casting
- Provide knowhow for methoding calculation along with key features or parameters to be considered for simulation
- Running of BHEL simulation software using new methoding files submitted

**Development of IIoT Enabled Vertical Centrifugal Casting Set-up***Proposer and Coordinator, NIAMT (NIAMT and Marwadi University, Cost: 4.37 Lakh)*

[Jan 2023 – Dec 2024]

- Jointly developing an IIoT enabled vertical centrifugal casting setup with Metaverse Model

**PGCSM: Post Graduate Certification Programme in Smart Manufacturing***PI and Coordinator / NIFFT Ranchi (Sponsored - Tata Steel and MPM, Cost: 10 Lakh)*

[Sep 2020-Nov 2021]

- Proposed a project scheme for online Post Graduate Certificate Course
- Designed the PG course in Smart manufacturing and drafted the content for 7 different subjects.
- Coordinated and arranged subject experts from Industry, Research Institutes and Academics as Course Faculty.
- Course Website and LMS platforms designed and followed the development
- Involved in the finalizing and guiding 8 live projects for 28 students (as part of PG certificate program)

## **SANDMAN: Machin Learning / Data Analytics driven Process Optimization**

Research Scientist (Problem formulation & optimization Modelling) / MPM Infosoft, Chennai

[Nov 2016-present]

- Machine Learning Model predicting optimal range of tuning Parameters, identifies most influencing input based on their influence on output,
- Prescriptive modelling to Optimise Consumption in Metal Casting Industry.
- Self-learning Multivariate Model Building and Update to predict defects
- Optimized measurement frequency for manufacturing industries
- Design and Development of Generalized Meta-Model for Casting Industry

## **Rapid Casting of Small thin-wall Near-Net Parts using Chemically Bonded Molds**

PhD Project/ MHRD / Prof. B. Ravi, IIT Bombay

[July 2012-Nov 2016]

- Explored a 3D Printing and Reverse Engineering enabled Rapid Casting route for manufacturing of small parts
  - 3D Modelling, 3D printing, Casting design and Simulation, Direct Casting, 3D Inspection, Prototyping
- Optimization model to predict molding parameter for achieving desired mold properties
  - Bayesian Inference, Multi-objective Optimization, Weighted Optimization, LPP, Model Validation
- Investigated the effect of process parameters to explore the castability of thin-wall chemically bonded sand casting.
  - DOE, Minitab, Main effect and Interaction plots, Benchmarking, Micro-machining,
- Investigate geometrical differences between design and cast parts arising due to the effect of varying geometry.
  - Experimentation, 3D Scanning, GOM Inspect, ALICA

## **SMART Foundry 2020 (Role: Volunteer)**

Sponsored Projects / DST / Prof. B. Ravi, IIT Bombay

[July 2015-June 2017]

- Involved in preparing a roadmap for the project and assisted in writing and finalizing the project proposal.
- Mainly responsible for design and setting up the initial casting experimental and inspectional facility.
- Represented the proposed smart foundry at various National and International platforms.

## **Network Enabled Online Casting Simulation System (E-Foundry) (Role: Volunteer)**

Sponsored Projects / NKN/ Prof. B. Ravi, IIT Bombay

[July 2012-Nov 2014]

- Mainly responsible for setting up the experimental casting facility in the lab
- 3D printing enabled metal casting facility including tabletop induction furnace and data acquisition system
- Involved in preparing course materials, tutorials, case studies, quizzes and resources for E-Foundry workshops
- Involved in conducting E-Foundry Webinars & Training Programme

## **Synthesis of Hydroxyapatite Powder from Egg Shell and its Coating by PLD Process on SS 316L Varying Laser Energy**

M Tech project / MHRD / Dr. Satya Prakash; Dr. R.D. Agarwal, IIT Roorkee

[June 2010-July 2011]

- Hydroxyapatite (HA) coating is done on SS 316 L by Pulse Laser Deposition (PLD) technique by varying laser energy.
- HA and HA coating are characterized using XRD, TG-DTA, FTIR, SEM, AFM and EDAX analysis.

### **TECHNICAL SKILLS**

<b>Data Science Algorithm</b>	:	Clustering, Optimization, PCA, PCR, Regression analysis, Time Series Forecasting
<b>Software Packages</b>	:	Spyder, JIRA, Simulations NOVA-CAST, Auto-Cast, FLOW+, ProCAST, Tableau
<b>Prototyping Skills</b>	:	3D Modelling (SolidWorks), 3D printing, 3D Scanning, Laser Cutting
<b>Characterization/Testing</b>	:	AFM, Zeta & Alicona Optical Microscopy, XRD, In-situ XRD, DSC/DTA/TGA, SEM, FEGSEM, EDAX, FTIR, Non Destructive testing, UTM, Dilatometry, CMM
<b>Computer Languages</b>	:	Python, R

### **ACHIEVEMENTS AND EXTRA CO-CURRICULAR ACTIVITIES**

- Secured **182<sup>nd</sup> rank** in Production & Industrial Engineering GATE 09.
- “Executive Member – Academia” in Institute for Technological Excellence (ITEx Institute) – since 6<sup>th</sup> Feb, 2021
- Got **best technical paper** award in CORSYM 2014, IIT Bombay. (2014)
- Got **Soli Commiserate best paper** award at 63rd Indian Foundry Congress, Greater Noida. (2015)
- Member of Scientific Committee for Govt. of India **R&D Technology Development Meet**, Raipur. (2016)
- NIFFT Nominated Social Media Champion, MHRD initiative (Aug 2019 - Present).
- Attended various **conferences, workshops, faculty development program** related to Manufacturing. (2008-2020)
- NCC Cadet. (2005-2008)

- Peer reviewer of International Journal of Metal Casting (2019 onward).
- Peer reviewer of International Journal International Journal on Interactive Design and Manufacturing (IJIDeM)
- Peer Reviewer of Journal of the institution of engineers (India) series D
- 21 publications (11 Journal, 10 Conference proceeding, 2 Book Chapter)
- Guided 9 M Tech Projects and 17 Diploma Projects and 30+ Seminars.

#### POSITION OF RESPONSIBILITIES

- Associate Dean Academics, NIFFT Ranchi, (Dec 2019 – February 2022)
- Course Coordinator, PG Certificate Course in Smart Manufacturing, NIFFT Ranchi (July 2020 - Present)
- Nodal Officer for Institute PR Agency, NIFFT (from 2020 – Present)
- Coordinator Centralized Computer Center, NIFFT (from Jan 2022 onward)
- SPOC and Convener for Smart India Hackathon 2023
- Social Media Champion, NIFFT Ranchi, (Aug 2019 - Present)
- Coordinator of 5-day short-term course in Advanced & Futuristic Manufacturing Process (by NIFFT) (Sep 25-29, 2020)
- Coordinator of 4-day International Workshop on Remanufacturing Capability Building (by FAMFI and NIAMT) (Sep 15-18, 2022)
- Technical Paper Committee Member, 64<sup>th</sup> IFC, Coimbatore. (Organised by The Institute of Indian Foundrymen)
- Technical Advisor, CORSYM 2014 Conference. (Organised by IIT Bombay and NACE India)
- Hospitality Organizer, MEGRES 2015. (Organised by Mechanical Engineering Department, IIT Bombay)

#### PUBLICATIONS

##### Journal Publication

1. Himanshu Khandelwal, B. Ravi, **Effect of Molding Parameters on Chemically Bonded Sand Mold Properties**, *Journal of Manufacturing Processes*, 2016, 22, April, 127-133, Elsevier. (IF – 5.68), Illinois, USA. (SCI)  
<https://doi.org/10.1016/j.jmapro.2016.03.007>
2. Himanshu Khandelwal, B. Ravi, **Effect of Binder Composition on the Shrinkage of Chemically Bonded Sand Cores**, *Materials and Manufacturing Processes*, 2014, 30, 1465-1470, Taylor and Francis. (IF–4.783), Virginia , USA  
<https://doi.org/10.1080/10426914.2014.994779> (SCI)
3. HIMANSHU KHANDELWAL And SUMEET KUMAR, **Effect of Mo on Micro-structural and Mechanical Properties of As-Cast Ferritic Spheroidal Graphite Iron**, in *Transactions of the Indian Institute of Metals (TIIM)*, (IF – 1.40) 74, 2703–2711 (2021), Springer. India. <https://doi.org/10.1007/s12666-021-02336-0> (SCI)
4. Himanshu Khandelwal, G. Singh, K Agrawal, S Prakash, **HIMANSHU KHANDELWAL, G. SINGH, K AGRAWAL, S PRAKASH, Characterization of Hydroxyapatite Coating by PLD Technique on SS 316L by Varying Laser Energy**, *Applied Surface Science*, Applied Surface Science, 2013, 265, 2013, 30-35, Elsevier. (IF – 7.392)  
<https://doi.org/10.1016/j.apsusc.2012.10.072> (SCI)
5. Himanshu Khandelwal, B. Ravi, **3d Printing Enabled Rapid Manufacture of Metal Parts at Low Cost**, *Indian Foundry Journal*, 2016, 62, 1, 47-54. (UGC)
6. Himanshu Khandelwal, B. Ravi, **Tabletop Foundry for Training, Research and Small Enterprises**, *Indian Foundry Journal*, 2014, 60, 2, 23-29. (UGC)
7. Himanshu Khandelwal, S Prakash **Synthesis and Characterization of Hydroxyapatite Powder by Eggshell**, *Journal of Minerals and Materials Characterization and Engineering (JMMCE)*, 2015, 4, 2, 119-126, Scientific Research. (Scopus)
8. Mukkollu Sambasiva Rao<sup>1</sup>, Himanshu Khandelwal\*, Mohit Kumar, Amitesh Kumar, **Parametric Optimization for Producing Semi-Solid A383 Alloy using Cooling Slop Casting Process**, *Archives of Foundry Engineering (SCI)*, **2023, 23, 1, 43-52.** (ESCI)
9. Anand Kumar, Himanshu Khandelwal\*, Dr. Sanjay Kumar, Santosh Kumar Azad, **Design Optimization of Steel Wheel Casting using Casting Simulation**, *Indian Foundry Journal*, 2023, 69, 9, 25-31. (UGC)
10. Nandita Gupta, Himanshu Khandelwal, Rahul kumar, Ashish Nayak, **Effect of Casting Section Geometry on Stresses and Deformation by ProCAST**, *Indian Foundry Journal*, 2023, 70.
11. Gupta, N., Khandelwal, H., Kumari, S., Thakur, Kanika., “A STUDY OF CERAMIC CORE FOR GEOMETRICALLY COMPLEX INVESTMENT CASTING”, *International Journal of Current Research*, 2023, 15, 7, 25451-25454. (Scopus)
12. Himanshu Khandelwal, B. Ravi, “Effect of Varying Part Geometry and Mold Constraints on Dimensional Deviations of Sand Cast Parts”, *International Journal on Interactive Design and Manufacturing (IJIDeM)*. (accepted Jan 2024) (SCI)

13. Himanshu Khandelwal, B. Ravi, "Influence of Gating Geometry Variations on Flow Balancing of Horizontal Multi-Gate Systems in Casting", *International Journal of Metalcasting*. (under review since Oct 2023) (SCI)
14. S Kumar Azad, K Mazloun, H Khandelwal, N Gupta, A Sata, "Optimization of the Process Parameters for Vertical Centrifugal Casting of A356 by Numerical Simulation", *Engineering Research Express*, 2024.

#### **Book Chapter**

15. Vidyarthi, G., Gupta, N., Khandelwal, H. (2021). A Study of Ceramic Core for Investment Casting. In: Pandey, C., Goyat, V., Goel, S. (eds) *Advances in Materials and Mechanical Engineering. Lecture Notes in Mechanical Engineering*. Springer, Singapore. [https://doi.org/10.1007/978-981-16-0673-1\\_31](https://doi.org/10.1007/978-981-16-0673-1_31) (Scopus)  
Print ISBN 978-981-16-0672-4; Online ISBN 978-981-16-0673-1
16. Khandelwal, H., Chavan, S. (2023). Electric Mobility: Key Factors, Unresolved Issues and Significance for Foundry Industries. In: Dikshit, M.K., Soni, A., Davim, J.P. (eds) *Advances in Manufacturing Engineering. Lecture Notes in Mechanical Engineering*. Springer, Singapore. [https://doi.org/10.1007/978-981-19-4208-2\\_22](https://doi.org/10.1007/978-981-19-4208-2_22)  
Print ISBN 978-981-19-4207-5; Online ISBN 978-981-19-4208-2 (Scopus)

#### **Conference Proceedings**

17. HIMANSHU KHANDELWAL, AMIT SATA, B. RAVI, **Bayesian Inference Based Optimization of Process Parameters for Chemically Bonded Molding System**", proceedings of *73<sup>rd</sup> World Foundry Congress*, Krakow, Poland, 23-27 Sep, 2018, 73, 129-130.
18. DEEPAK CHOWDHARY, HIMANSHU KHANDELWAL, **Data Analytics: The Next Dimension in Molding Sand Control**, *73<sup>rd</sup> World Foundry Congress*, Krakow, Poland, 23-27 Sep, 2018, 73, 603-604.
19. HIMANSHU KHANDELWAL, RENUKA NANDA, B. RAVI, **Multi-spiral Flow Benchmark for Small Thin-wall Castings Supported by Computer Simulation**, proceeding of *72<sup>nd</sup> World Foundry Congress*, Nagoya, Japan, 21-25 May, 2016. 72, 337-338.
20. HIMANSHU KHANDELWAL, B. RAVI, **Compact Integrated Metal Casting System for Miniature Castings**, in *National Symposium on Miniature Manufacturing in 21<sup>st</sup> Century*, August 16-18, 2013, 1, 1-8.
21. HIMANSHU KHANDELWAL, B. RAVI, **TABLETOP INTEGRATED MELTING, POURING AND DATA ACQUISITION SYSTEM FOR TRAINING AND RESEARCH PURPOSES**, proceeding of **62<sup>nd</sup> INDIAN FOUNDRY CONGRESS**, at Gandhinagar in Gujarat, India. February 7-9, 2014.
22. HIMANSHU KHANDELWAL, B. RAVI, **3D PRINTING ENABLED RAPID MANUFACTURE OF METAL PARTS AT LOW COST**, proceeding of **63<sup>rd</sup> INDIAN FOUNDRY CONGRESS**, February 27 to March 1, 2015 in Greater Noida, U.P.
23. Himanshu Khandelwal, **Evolutionary Journey of Metal Casting Industry Towards Foundry 4.0**, presentation publication in Souvenir of Smart-Tech 2020, Virtual Conference on Smart Manufacturing Technologies & Its Significance on Indian Industrial Landscape, pp. 248- 272, 2-3<sup>rd</sup> Oct, 2020.
24. Himanshu Khandelwal, Sumeet Chavan, **Electric Mobility: Key Factors, Unresolved Issues and Significance for Foundry Industries**, in press to be published in *Lecture Notes in Mechanical Engineering, Springer*, presented at International Conference on Futuristic Advancements in Materials, Manufacturing and Thermal Sciences (ICFAMMT - 2022), Institute of Infrastructure, Technology, Research and Management (IITRAM), Ahmedabad, January 20-21, 2022. (Scopus)
25. Himanshu Khandelwal, Amitesh Kumar, **Art to Intelligence: A roadmap for Foundry 4.0**, in proceedings of *National Conference and Industry Meet on Foundry 4.0 – Opportunities and Challenges*, organized by CSIR CMERI and IIF Eastern Region, at CMERI Durgapur, 2022. Feb 24-25.
26. Anand Kumar, Himanshu Khandelwal, Dr. Sanjay Kumar, Santosh Kumar Azad, Design Optimization of Steel Wheel Casting using Casting Simulation, proceeding of **71<sup>st</sup> Indian Foundry Congress**, February 8-10, 2023 at Greater Noida, UP.
27. Nandita Gupta, Himanshu Khandelwal, Rahul kumar, Ashish Nayak, **Effect of Casting Section Geometry on Stresses and Deformation by ProCAST**, proceeding of **71<sup>st</sup> Indian Foundry Congress**, February 8-10, 2023 at Greater Noida, UP.

### **Invited Lectures/Resource:**

1. AI Enabled Metal Casting, in “Advances In Manufacturing” (AIA-2021), One Week, E-Faculty Development Program in Association with TEQIP-III, Organized by BIT Sindri Dhanbad, June 15<sup>th</sup> to 19<sup>th</sup> 2021.
2. One month executive course on Digital Manufacturing and Automation in Foundry commencing on 4th October 2023 at IIT Tirupati. Organised by Advanced Materials Manufacturing and Tribology Lab Department of Mechanical Engineering IIT Tirupati jointly with Indian Institute of Foundrymen (IIF-CET)
3. “Expert talk” on IIoT enabled Metal Casting, during Two Weeks Online Professional Training in “Allied Tools and Techniques”, under Interdisciplinary Engineering Fields for Learning Sustainability”, organized by the Department of Industrial and Production Engineering, School of Studies, Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), 05-16 June 2023.
4. Journey of Metal Casting Industry towards Foundry 4.0 a three-day Virtual Workshop on "Modern Foundry Practices in Industry", Organised by SRM Institute of Science and Technology, National, 2020-10-05, Invited Lecture
5. Metal Casting: Art to Analytics at Jamia Millia Islamia, (A Central university) National, 2021-03-05

### **Patent Filled:**

1. Novel Urea Core for Investment Casting, Indian patent published (application no. 202131036607)  
Inventor and applicant details:
  1. Ganesh Vidyarthi, PhD Scholar, NIFFT, Hatia
  2. Dr Nandita Gupta, Professor, NIFFT, Hatia
  3. Dr Himanshu Khandelwal, Asst. Professor, NIFFT, HatiaDocket No 26694 Date/Time 2021/08/12 21:06:00

### **Conference Presentation:**

1. H Khandelwal and B. Ravi, “**Tabletop Integrated Melting, Pouring and Data Acquisition System for Training and Research Purposes**”, Abstracted, *1st Mechanical Engineering Graduate Research Symposium (MEGRES 2014)*, IIT Bombay, Mumbai 2014, Dec 6-8.
2. H Khandelwal, K Joshi, “**Effect of Laser Energy on Surface Morphology of Hydroxyapatite Coated SS Alloy**”, abstracted, *7th National Symposium for Materials Research scholars (MR-15)*, IIT Bombay, May 20-22nd, 2015.
3. K Joshi, H Khandelwal and Y Gaikhe, “**Deposition of Nickel-molybdenum Alloy Coatings using Pulse Electro-Deposition**”, Abstracted, *7th National Symposium for Materials Research scholars (MR-15)*, IIT Bombay, May 20-22 2015.
4. S Gunjal and H Khandelwal, “**Dimensional Difference from Designed to Cast Parts: Experimental and Simulation Studies**”, Abstracted, *2nd Mechanical Engineering Graduate Research Symposium (MEGRES 2015)*, IIT Bombay, March 21, 2015.
5. H Khandelwal, and S Mozammil, “**Maharashtra & Mumbai Floods of 2005; Causes, Effects & Lessons for Future**”, presented in *IDEAZ, Hydrology during COGNIZANCE 2011*, IIT Roorkee, March 11-13, 2011.
6. H Khandelwal, S Prakash, R D Agarwal, “Effect of Laser Energy on Pulse Laser Deposited Thin Film Hydroxyapatite Coating” Abstracted, *CORSYM 2014*, IIT Bombay, February 20-21, 2014 (best paper in coating category)
7. Ganesh Vidyarthi, N. Gupta and Himanshu Khandelwal, Current Situation and Recent Development in Investment Casting Process, presented at 2nd National Conference on Advancement in Materials Processing Technology (AMPT – 2020, 30th Oct – 01st Nov 2020) (Published only in book of abstract)
8. Md Salim Ansari, Amitesh Kumar, Kamlesh Kumar Singh, Himanshu Khandelwal, **Simulation Of Shrinkage Porosity Formation In Lead Alloy Casting Using Procast**, presented at 2nd National Conference on Advancement in Materials Processing Technology (AMPT – 2020, 30th Oct – 01st Nov 2020) (Published only in book of abstract)
9. Ashish Kumar Nayak, Himanshu Khandelwal, Nandita Gupta, **AI Enabled Smart Melting System**, Professor

### **PROFESSIONAL MEMBERSHIP**

- Individual member of Institute of Indian Foundrymen (IIF). (Membership Number: M/16433/E/RAN)
- Member of The American Society of Mechanical Engineers (ASME). (Membership Number: 101342233)
- Member of The Institute of Engineers (India). (Membership Number: M-1800064)

## Conference/Workshop/ FDP Conducted

### Workshop/FDP/STC Conducted

- **Coordinator** - International Workshop on Remanufacturing Capacity Building, 15 – 18 Sep 2022, Self-financed, Coordinator
- **Coordinator** - A Short-term Course on Advanced and Futuristic Manufacturing Process, 25 - 29 Sep 2020, Self-financed, Coordinator
- **Convenor** – One day hackathon “Mechathon 1.0” on 27 Oct 2023, collaboration with Smart India Hackathon 2023.

### National/International Conference Conducted

- 29 Jan 2016 to 31 Jan 2016, 64th Indian Foundry Congress, Institute of Indian Foundrymen
- 21 Mar 2015 to 21 Mar 2015, MEGRES 2015, IIT Bombay
- 20 Feb 2014 to 21 Feb 2014, CORSYM 2014, NACE

## PG Project Guided

### **M. Tech Project:**

1. Flow Analysis of Multi Gate Multi Cavity System- Experimental and Simulation Studies, 2020, SALIGANTI SHIVA KUMAR
2. Effect of Microstructure and Mechanical Properties of Al-Si Alloy of Semi Solid Casting using Cooling Slope 2020, Ravikant
3. "Effect of Mo addition on as-cast microstructures and properties of Ferritic Spheroidal Graphite Iron" 2020, Chavan Sumeet Subhash
4. Effect of Process Parameters of Cooling Slope on Microstructure and Mechanical Properties, 2021, Mohit Sharma
5. Simulation Study of Dimensional Deviation in Metal Casting with Varying Part Geometry, M. Tech, 2021 Kumar Abhinav
6. Simulation Study to Investigate the Effect of Varying Section Thickness on Stresses and Deformation in Casting, 2022, Rahul Kumar (co-guide: Prof. Nandita Gupta)
7. Solidification Simulation of Steel (AlSi1026) Casting of Wheel and Analysis of Defect, 2022, Anand Kumar (Prof. Sanjay Kumar)
8. Numerical Simulation Based Parametric Optimization of Vertical Centrifugal Casting, 2023, Santosh Kumar Azad (Co-guide: Prof. Nandita Gupta)
9. Enabling Smart Manufacturing by Implementing Industry 4.0 Technologies in Automobile Assembly Line, 2023, Rajnikant (Co- guide: Prof Sanjay Kumar)