



# INTERNATIONAL CONFERENCE

ON

## Advances in Foundry and Forming Technology

18 – 19<sup>th</sup> December | 2024

Tentative Technical Session Schedule



### Day 1: Wednesday, 18<sup>th</sup> December 2024

10:00 AM - 11:00 AM

#### Inauguration Session

1. Shri Santosh Kumar Gangwar – Chief Guest  
(Subject to Confirmation)  
Honourable Governor of Jharkhand
2. Shri Sham Arjunwadkar – Guest of Honour  
Former Chairman, Board of Governor, NIAMT Ranchi
3. Professor Brij Kumar Dhindaw – Guest of Honour  
Distinguished Professor, IIT Kharagpur
4. Professor D. K. Singh – Guest of Honour  
Vice Chancellor, Jharkhand University of Technology
5. Dr. Suvrokamal Dutta – Guest of Honour  
Political, Economic and Foreign Policy Expert
6. Professor Partha Protim Chattopadhyay  
Director NIAMT Ranchi
7. Er. Mahesh Kumar Gupta,  
Chairman, IEI Jharkhand State Center
8. Professor Manoj Kumar  
Head, Department of Foundry and Forge Technology
9. Professor Kamlesh Kumar Singh  
Chairman ICAFFT

11:00 AM - 11:30 AM

#### High Tea at Auditorium Canteen

11:30 AM - 01:30 PM

#### Session 1: Advanced Foundry and Casting Processes

##### Invited Talks

1. Professor Brij Kumar Dhindaw  
Distinguished Professor, IIT Kharagpur
2. Dr. Nagahanumaiah  
Director, Central Manufacturing Technology Institute  
(CMTI) Bangalore
3. Dr. Madav Athavale  
Foundry Consultant and Ex- Foseco
4. Dr. D. S. Padan  
GM and Head Foundry, Tata Motor Jamshedpur



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	<b>Author Presentations</b>  5. ICAFFT24-100 Higher Casting Yield for Critical pressure component of power plant component - A case study, Dr. Ved Prakasha, Dr. Himanshu Khandelwal, Dr. Sudip Kumar Samantaa, Mr. Pranabendu Sahaa, Mr. Balaji Chandrakantha*
1:30 PM - 2:30 PM	<b>Lunch at NIFT Niwas</b>
02:15 PM – 02:30 PM	<b>SMART Foundry: Art to Analytics Lab Inauguration at CIF Building</b>
2:30 PM - 4:00 PM	<b>Session – 2A: Forging and Forming Processes</b>  <b>Invited Talk</b>  1. Dr. Raj Kumar Prasad Singh Senior Director, KCTI (Bharat Forge Ltd)  <b>Author Presentations</b>  6. ICAFFT24-49 Applications of Process CAE for Development of Hot Forging Manufacturing Process; Bikash Musib, K. Narendra Babu & V. Janardhana  7. ICAFFT24-06 Relevance of parameters influencing forming force, formability, surface roughness, profile accuracy and thickness distribution of variable wall angle conical frustums during Single Point Incremental Sheet Forming (SPIF) by Radhe Shyam Bhasker and Yogesh Kumar  8. ICAFFT24-64 Effect of Strain rate on Newly Developed Manganese Stabilized Austenitic Stainless Steel to suitable for Rolling and Forging Applications of Manufacturing Industries by Dr. K. Chandra Sekhar  9. ICAFFT24-67 Effect of processing parameters on die design and deformation of AA5083 through equal channel angular pressing technique by Nagendra Singh, Manoj Kumar Agrawal



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	<p><b>10. ICAFFT24-11</b> Effect of Notch-depth Ratio on Intermittent Electromagnetic Radiation and Magnetic Field Generation in Iron sheet specimen under Tension, Dr. Rajeev Kuma, BIT Meshra</p> <p><b>Session – 2B: Advances in Smart Materials and Testing Technologic</b></p> <p><b>Author Presentations</b></p> <ol style="list-style-type: none"><li>1. ICAFFT24-22 NiTiUse of NiTinol in aerospace applications: A review, Susmita Datta</li><li>2. ICAFFT24-95 Numerical and hydrodynamic study of granular material cooling in a multi-stage fluidization chamber: Experimental validation, Pavitra Singh</li><li>3. ICAFFT24-96 Bending and vibration study of carbon nanotubes reinforced functionally graded smart composite plate, Manish Kumar</li><li>4. ICAFFT24-92 Outline study on Acoustic Emission Testing (AET), Prof. Bansidhara Mallik, NIAMT Ranchi</li><li>5. ICAFFT24-22 Recent trends in High Entropy Alloys using Powder Metallurgy, Sanjay Varala</li></ol>
4:00 PM - 4:15 PM	<b>Tea Break</b>
4:15 PM - 5:45 PM	<p><b>Session 3A: Metal Solidification, Deformation, Tooling and Methoding,</b></p> <p><b>Invited Talk:</b></p> <ol style="list-style-type: none"><li>1. Mr Anil Shivajirao Kulkarni Vice President, The Great Die Casting Technology Forum of India</li><li>2. Dr. Sudesh Singh, Post-doctoral Researcher, Tsinghua University, Beijing</li></ol>



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### Author Presentations

3. ICAFFT24-44  
The Influence on the type of Nucleants on the Mechanical and Metallurgical Quality of SG Iron Castings by Nandita Gupta
4. ICAFFT24-35  
Hardness Control in Automobile Casting- A Case Study by Himanshu Shekhar Mishra, Rina Sahu
5. ICAFFT24-99  
Optimizing Inclusion Removal and Flow Dynamics in Continuous Casting Tundishes with Multi-Hole Ceramic Filters, Latif Arifudin<sup>1</sup>, Shahid Parvez, Md Irfanul Haque Siddiqui

### Session 3B: Composite Materials, and Machining Techniques

#### Author Presentations

1. ICAFFT24-17  
Experimental Investigation of Mechanical Properties on AA6061 Metal Matrix Composite Friction Stir Welded Joints by Supraja Reddy. B, G. Sidhu, D. Sai Prakash, N. Sashi Kumar and B. Ganesh
2. ICAFFT24-09  
Reverse Cladding A Novel Approach to Produce Components with Integrated Cladding Through Casting by Tumula Tirumala, Ajay Kumar
3. ICAFFT24-97  
Machinability study and optimization of EDM process parameters for AA7050-B4C-T6 Composite using Grey Taguchi Method; Arvind Kumar<sup>1\*</sup>, Abhishek Kumar<sup>1</sup>, Priya Ranjan<sup>1</sup> Ram Naresh Rai<sup>2</sup>
4. ICAFFT24-55  
Enhancing Al 6061 Alloy with In-Situ TiB<sub>2</sub> Reinforcement for Superior Mechanical Properties by Anshu Anand

06:30 PM – 08:00 PM

**Cultural Programme**

08:00 pm onward

**Dinner**



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### Day 2: Thursday, 19th December 2024

9:30 AM - 11:00 AM

#### Session 4A: Advanced Casting and Joining process

##### Invited Talks

1. Professor P. K. Jha  
IIT Roorkee
2. Professor Rajiv Asthana  
University of Wisconsin, Wisconsin, USA
3. Professor Partha Protim Chattopadhyay  
Director, NIAMT Ranchi
4. MAGMA Engineering India Pvt. Ltd.

##### Author Presentations

5. ICAFFT24-72  
Effect of coalescence and strain triaxiality on tensile strength during single point incremental forming (SPIF) process for the Titanium sheets of grade 4 and grade 2 by T. Niranjana, S. Vigneshwaran and G. Yog Anjaneyulu
6. ICAFFT24-28  
Effect of Cooling Conditions on Developing Ultra-High Strength Micro Alloyed Steel for Railway Applications by Anushree Dutta

#### Session 4B: Advancements in Precision Machining and Sustainable Material Processing

##### Author Presentations

1. ICAFFT24-57  
Super finishing by Bio-material Cobalt-alloys by Magnetic field assisted finishing processes (MFAFP) by Sudhir Chaurasiya, Dr. Madhava Nand Pandey
2. ICAFFT24-30  
Optimization of Drilling Parameters for improved machined surface quality of Advanced Fiber-Reinforced Composite Laminates Using EDAS Method by Tarakeswar Barik, Suchismita Parida, Kamal Pal, Debadutta Mishra





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	<ol style="list-style-type: none"><li>ICAFFT24-68 Mechanical and Electrical Characterization of PLA-Based Composite Filaments for Electrochemical Sensing Electrode by Abhishek Raj, Adarsh Singh, Bobby Tyagi, Pushpendra Yadav</li><li>ICAFFT24-50 Study of the effects of mango seed and pongamia oil-based cutting fluid on surface morphology in turning of AISI 304 steel by Aneesh Mishra, Vineet Dubey, Anuj Kumar Sharma, Sunny Singhanian, Kamlesh Kumar Singh, Rajat Uphadhyaya, Sujeet Kumar Gautam.</li><li>ICAFFT24-20 Experimental analysis of pulsed laser micro-polishing of nitinol by Sangeeth Purushothaman, M Shanmuka Srinivas, Nasina Venkaiah, M Ravi Shankar</li></ol>
11:00 AM - 11:30 AM	<b>Tea Break</b>
11:30 AM - 1:00 PM	<b>Session 5 A: Sheet Metal Forming and Casting</b> <b>Invited Talk</b> <ol style="list-style-type: none"><li>Professor D. Ravi Kumar IIT Delhi</li><li>Dr. Rahul Kumar, Chief Research &amp; Development, Tata Steel Jamshedpur</li></ol> <b>Author Presentations</b> <ol style="list-style-type: none"><li>ICAFFT24-71 Evaluating Extrusion Manufacturing Conditions for Quality and Weight of Surgical Application Part by Manish Dixit, Pushpendra Yadav, Piyush Singhal</li><li>ICAFFT24-46 A review on grades, properties and forming of steels for standardization and quality control of ship building components by Kuntal Maji</li><li>ICAFFT24-48 Analysis and multi-objective optimization of incremental sheet forming of aluminium alloy sheet using machine learning techniques, Pawan Kumar, Kuntal Maji, Raj Ballav</li></ol>



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	<p>6. ICAFFT24-74 Experimental investigation into the effects of heat treatment on the Microstructure and characteristics of high Cr alloyed cast Iron ASTM – A 532 by Sharada Prasad Shukla, K. K. Singh</p> <p><b>Session 5B: Reserve for Spot Registration</b></p>
1:00 PM – 2:00 PM	<b>Lunch at NIFFT Niwas</b>
2:00 PM – 3:30 PM	<p><b>Session 6A: Automation and Digital Twin in Manufacturing</b></p> <p><b>Invited Talks</b></p> <ol style="list-style-type: none"><li>1. Mr. Rakesh Kadiyan, General Manager, Ramkrishna Forgings Limited (RKFL) Jamshedpur</li><li>2. Dr Rajesh Ransing Professor, Swansea University</li><li>3. Dr Kedarnath Rane Research and Development Engineer National Manufacturing Institute Scotland</li><li>4. Dr Md. Irfanul Haque Sidhiqqi Assistant Professor, King Saud University, Saudi Arabia</li></ol> <p><b>Author Presentations</b></p> <ol style="list-style-type: none"><li>5. ICAFFT24-98 Robots in Supply Chain Management: Ensuring Safety and Efficiency in Healthcare, Priya Ranjan, N. Hari Babu, Arvind Kumar</li></ol> <p><b>Session 6B: Innovation in Additive Manufacturing and Bioengineering</b></p> <p><b>Author Presentations</b></p> <ol style="list-style-type: none"><li>1. ICAFFT24-91 Recent advancements in multifunctional smart materials for 3D/4D bio-printing and its innovative approach to biomedical applications, Sakshi Tiwari</li></ol>



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	<ol style="list-style-type: none"><li>2. ICAFFT24-93 Exploring 3D Printing and Polymer Innovations for Enhanced Drug Delivery System Development, Prof. Bansidhar Mallik</li><li>3. ICAFFT24-94 Current Developments in Bone Tissue Engineering Using Additive Manufacturing Methods, Ganesh Dagadu Walasange,</li><li>4. ICAFFT24-70 Development and performance evaluation of polymer-based abrasive tool for porous viscoelastic abrasive finishing additively manufactured SS 316L by M. Shanmuka Srinivas, P. Sangeeth, N. Venkaiah, M. Ravi Sankar</li><li>5. ICAFFT24-08 Development of a novel hybrid additive manufacturing process for low-cost metal components by Ritik Raj, Jung-Ting Tsai, Jeng-Ywan Jeng</li><li>6. ICAFFT24-61 Fused Deposition Modelling (FDM) in Additive Manufacturing by Inshirah Siddiqui</li></ol>
3:45 PM - 4:45 PM	<p><b>Panel Discussion: "Future Trends and Challenges in Foundry and Forge Industry"</b></p> <ol style="list-style-type: none"><li>1. Professor Brij Kumar Dhindaw Distinguished Professor, IIT Kharagpur</li><li>2. Mr. Deepak Kumar Lenka, Vice President Foundry Ramakrishna Forging Limited Group</li><li>3. Dr. Madav Athavale Foundry Consultant and Ex- Foseco</li><li>4. Dr. Rahul Kumar Verma, Chief R&amp;D, Tata Steel</li><li>5. Professor D. Ravi Kumar IIT Delhi</li><li>6. Professor Partha Protim Chattopadhyay Director NIAMT</li></ol>





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5:00 PM - 6:00 PM	<b>Valedictory Session</b> <ol style="list-style-type: none"><li>1. Shri Sham Arjunwadkar – Chief Guest Former Chairman, Board of Governor, NIAMT Ranchi</li><li>2. Mr. S. K. Verma – Guest of Honour Chairman and Managing Director (CMD), MECON Limited</li><li>3. Professor Partha Protim Chattopadhyay Director, NIAMT Ranchi</li><li>4. Professor Manoj Kumar, Secretary – ICAFFT 2024, Head, Department of Foundry and Forge Technology</li><li>5. Mr. Harun Ansari, Co-Secretory – ICAFFT 2024</li><li>6. Professor N. K. Singh Dean Academics, NIAMT Ranchi</li></ol> <p>Vote of Thanks by</p> <p>Dr. Himanshu Khandelwal, Convenor – ICAFFT 2024</p>
6:00 PM - 6:30 PM	<b>High Tea at NIFFT Niwas</b>