



**Prof. Shatrughan Soren**



***From HoD's Desk***

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**Dear Readers,**

*We are pleased to present the eleventh edition of our department's monthly newsletter, featuring highlights from recent academic discourses and invited expert talks. This month, our department successfully organized orientation programs for both undergraduate and postgraduate students, marking the beginning of their academic journey.*

*Our faculty members have continued to demonstrate research excellence through notable scientific advancements, reflected in high-quality peer-reviewed publications. Furthermore, they actively participated in technical review meetings convened by the Ministry of Mines, in collaboration with TEXMiN, as industry partner. Looking ahead, we are proud to announce the upcoming national conference "CRISP - 2025", to be hosted by the Department of Fuel, Minerals & Metallurgical Engineering this October, organized as part of the centennial celebrations of IIT(ISM) Dhanbad.*

## Academic Discourse



### CSIR-NML Hosts EMBT-2025 to Showcase Cutting-Edge Mineral Beneficiation Technologies

July 24, 2025 - by Jharkhand Mirror - Leave a Comment



**Jamshedpur :** As part of its 75th Foundation Year celebrations, CSIR-National Metallurgical Laboratory (NML), Jamshedpur, hosted the National Conference on Emerging Trends in Mineral Beneficiation Technologies (EMBT-2025) — spotlighting India's drive toward self-reliance through innovation in mineral processing.

The three-day event brought together 150+ delegates from 22 institutions and organizations across the country, with 66 technical papers showcasing advancements in mineral beneficiation and sustainable extraction technologies.

Backed by major industry leaders like Tata Steel, Coal India, SAIL, JSW Steel, Eriez India, and Hindustan Copper, the conference featured dynamic sessions with keynote addresses and plenary talks.

Dr. P.K. Banerjee (CSIR-CIMFR) called for urgent coal beneficiation upgrades to reduce India's 85% dependency on imported coal for steel production, aligning with the goal of 300 MTPA by 2030.

Prof. D.K. Singh (IIT-ISM Dhanbad) presented techniques for eco-friendly extraction of rare earth elements (REEs) from monazite, essential for India's critical mineral future.

**Prof. D K Singh** delivered a plenary lecture on “**Technologies for eco-friendly extraction of rare earth elements (REEs) from monazite, essential for India’s critical mineral future**”

**Prof. Shravan Kumar** presented a technical paper in the conference on **"Synergistic effect collector blend on the froth flotation of sulfide ores"**

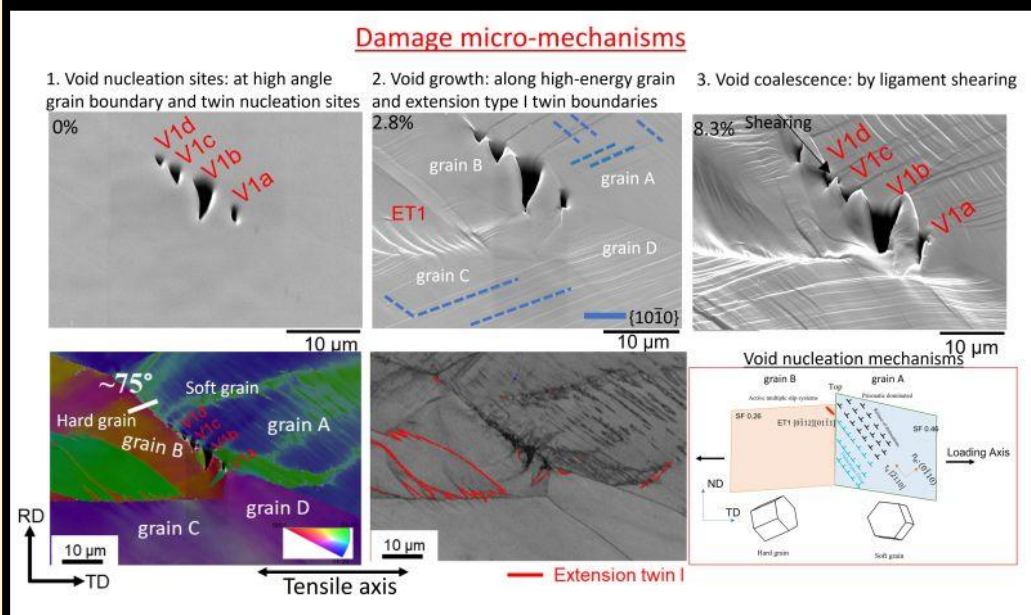


# Scientific Breakthroughs

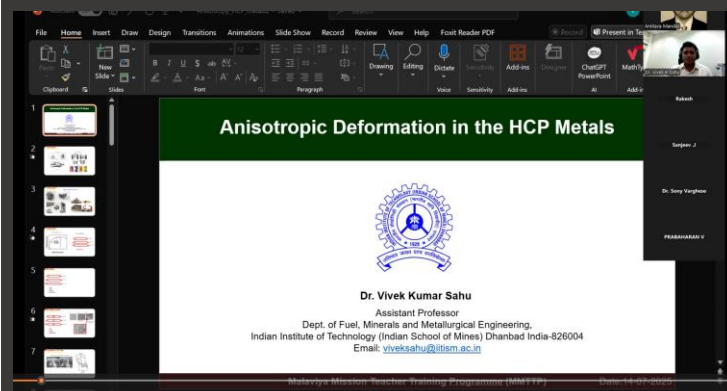


## Prof. Vivek's journal publication:

**V. K. Sahu, M. Yadava, P. Chakraborty, N. P. Gurao, Micro-Mechanisms of Damage Evolution in Commercially Pure Titanium: An In-Situ Study with CPFEM Simulations, Metall. Mater. Trans. A. (2025).**  
DOI: <https://doi.org/10.1007/s11661-025-07889-z>



- **Henry Marion Howe Medal 2025 Awards** for the paper titled “Achieving a columnar-to-equiaxed transition through dendrite twinning in high deposition rate additively manufactured titanium alloys”, Metall. Mater. Trans. A. (2024).  
DOI: <https://doi.org/10.1007/s11661-024-07388-7>
- **Delivered invited talks on:**
  1. **Anisotropic Deformation in the HCP Metals**, in Malaviya Mission Teacher Training Programme on Current Trend in Metal Additive Manufacturing (July 7-18, 2025) organised in Department of Mechanical Engineering, IIT-ISM Dhanbad.
  2. **Prior beta-grain refinement in additive-manufactured Ti6Al4V**, in Malaviya Mission Teacher Training Programme on Current Trend in Metal Additive Manufacturing (July 7-18, 2025) organised in Department of Mechanical Engineering, IIT-ISM Dhanbad.

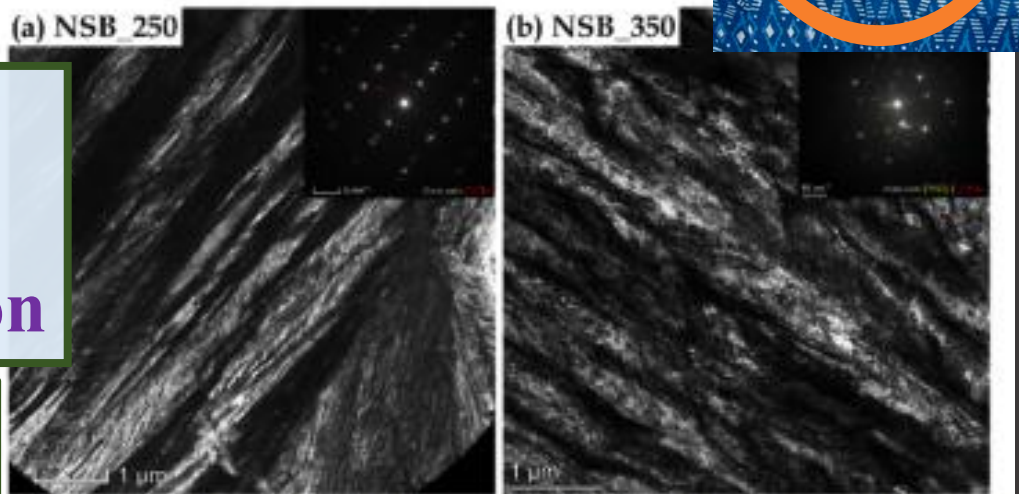


## Innovative Findings

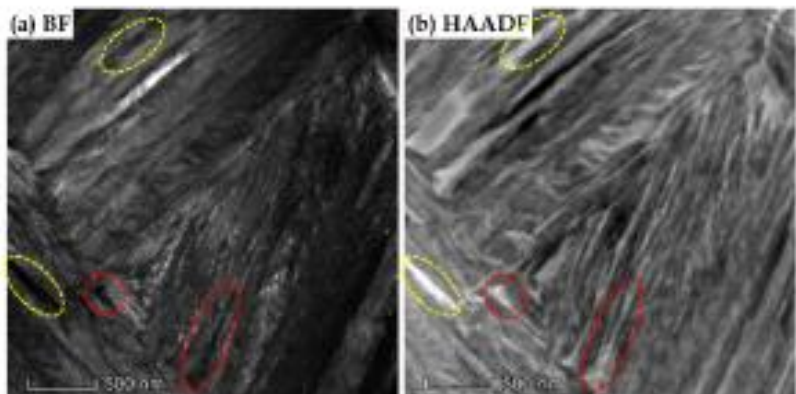


## Major Scientific Contribution

This study investigated microstructural evolution close to the cracked surface when the crack growth was in Paris law regime



micrographs captured in bright field imaging mode for (a) NSB\_250 and (b) NSB\_350



### Prof. Avanish Kumar's journal publication:

Bhawesh Chhajed, Sudharm Rathore, **Avanish Kumar**, Aparna Singh: *Investigation of microstructural evolution in nano-structured bainite during Paris law regime of fatigue crack growth*. European Conference on Fracture 2024, Procedia Structural Integrity, 68 (2025), 708-714. <https://doi.org/10.1016/j.prostr.2025.06.119>





# Dayananda Sagar College of Engineering

Bengaluru 560111

(An Autonomous Institute Affiliated to VTU, Belagavi. Approved by AICTE & UGC & NAAC with grade ISO 9001:2015 Certified Institution)

## Department of Medical Electronics Engineering

(Accredited by NBA Tier 1: 2023-2026)

Cordially invites you for the inaugural function of

One-Week Faculty Development Program  
On

## "Biomaterials & Nanomaterials in Biomedical and Clinical Applications"

(Hybrid Mode)

14<sup>th</sup> - 19<sup>th</sup>, July 2025

Scholarly

Talk

Prof. Kasturi Sala was an invited speaker in this FDP. The Title of presentation was "Processing and Characterization of Nanomaterials"

## Department of Medical Electronics Engineering (Accredited by NBA Tier 1: 2023-2026)

### LETTER OF APPRECIATION

July 21<sup>st</sup>, 2025

To  
Dr. Kasturi S,  
Fuel, Minerals and Metallurgical Engineering,  
Assistant Professor, IIT Dhanbad.

Greetings from the Department of Medical Electronics Engineering!

On behalf of the Department of Medical Electronics Engineering, I am writing to express our heartfelt appreciation for your invaluable contribution and delivering knowledge as an invited speaker during Faculty Development Programme on "Biomaterials & Nanomaterials in Biomedical and Clinical Applications" on 15<sup>th</sup> July, 2025. The presentation was highly informative and excellent and was appreciated by all the participants.

Your presence and expertise significantly enhanced the success of the event, and we are truly grateful for your time, dedication and commitment to making it a memorable occasion. We look forward for your continued support in this regard.

With warm regards and deepest appreciation.

Thank you,

Dr. N. Sriraam N

Dean R&D, Professor and HoD

Department of Medical Electronics Engineering

Dr. N. SRIRAAM

Professor & Head  
Dept. of Medical Electronics Engineering  
Dayananda Sagar College of Engineering  
Bangalore - 560 111

Zoom Workplace Meeting

Prof. Kasturi S's screen

Dr. Krishnan Ba... Prof. Kasturi S Mahadev... Sudha Kamath

Dr. Krishnan Bandyop... Prof. Kasturi S Mahadev... Sudha Kamath Priyanka M

Faculty development program on

**"BIOMATERIALS & NANOMATERIALS IN BIOMEDICAL AND CLINICAL APPLICATIONS"**

**Principal Investigator: Dr. Kasturi Sala**  
Assistant Professor, Fuel, Minerals and Metallurgical Engineering, IIT (ISM) Dhanbad, (Sept 2024 – present)

**Post Doctoral Research Fellow, SCNU,**  
South Korea (Sept 2022- Feb 2024),  
Advisor – Prof. Shi-Hoon Choi

**Department of Materials Engg., IISc**  
Bangalore (Oct 2021- July 2022),  
Advisor – Prof. Satyam Suwas

**PhD–Department of metallurgical and materials Engg., (IIT) Kharagpur,**  
(Jul 2015- Aug 2021)  
Supervisor – Prof. Rahul Mitra

Peer reviewed journals: 9; H-index: 7; I10-index: 6  
Conference proceedings: 1  
Book chapter: 1  
International conferences: 4

Expertise: Processing and characterization of Advanced Materials, Advanced Welding Techniques, Hot corrosion, Alloy development

**R&D Projects as PI:**

1. Developing Metal membranes (56.4 Lakhs, Funded by ANRF – PMICRO)
2. Developing TRC for Al alloys (49.3 Lakhs, Funded by TEXMIN)
3. Seed Grant (50 Lakhs, IIT ISM Dhanbad)
4. Ramamujan Faculty Fellowship – (~120 Lakhs Funded by SERB)

**IIT ISM INDIAN INSTITUTE OF TECHNOLOGY**  
Dhanbad

**Jul 18, 2025**



# Industrial Outreach



**Industrial visit: Wire Arc additive Manufacturing (WAAM) facilities (Nextgen Plasma Pvt. Ltd)**

**Prof. Vivek Kumar Sahu**, Assistant Professor in the Fuel, Mineral, and Metallurgy Department of IIT (ISM) Dhanbad, visited Nextgen Plasma Pvt. Ltd, Kolkata, West Bengal, and interacted with welding and additive manufacturing experts for potential collaborations on the deposition of titanium alloys using wire arc additive manufacturing facilities.





Welcome



JNARDDC  
NAGPUR

## Scientific Delivery



As part of the project review process organized by the Ministry of Mines, Prof. Kasturi Sala and Prof. Raj Kumar Dishwar along with the industry partner, TEXMiN, IIT (ISM) Dhanbad, visited JNARDDC, Nagpur to present their research proposal.



JNARDDC





National Conference  
on



# Critical Metals

(Recycling, Innovation, Separation & Processing)

## CRISP-2025

13-15 OCTOBER 2025

Organized by

Department of  
Fuel, Minerals & Metallurgical Engineering  
IIT(ISM) Dhanbad

In collaboration with



**Upcoming Event!!!**  
**Register soon---**





# EDITORIAL BODY

## Editor-in-Chief

**Prof. Shatrughan Soren**

Head of the Department

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Assistant Professor

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