



THE INDIAN INSTITUTE OF METALS  
Platinum Jubilee Celebrations 2021-22

# IIM Honours & Awards

IIM Awards Ceremony  
&  
75<sup>th</sup> Annual Technical Meeting

*Organised by*



**IIM**  
Metallurgy  
Materials Engineering

## The Indian Institute of Metals



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## CONGRATULATIONS!

At the 75<sup>th</sup> year of the Institute's presence, we would like to congratulate all the **IIM Awards 2021 Recipients** for their exemplary contributions to the profession, industry, research & development, academics etc., and setting the highest standards for many aspirants and future members of the Institute.

Determining the recipient of such prestigious honours is always a difficult decision, and is based on various factors. We would like to appreciate the efforts of all applicants across categories. The candidates who couldn't be considered for this year's Award by a very narrow margin, & couldn't qualify for the respective Award Category may continue to apply for suitable Honours & Awards categories based on call for IIM Awards application published in IIM's website.

We truly believe that, 'Excellence deserves recognition', and we are here at **The Indian Institute of Metals** always do encourage exceptional and diverse talents who have made it big this year.

-----Instituted by **The Indian Institute of Metals**-----

**The Indian Institute of Metals**



**IIM**  
Metallurgy  
Materials Engineering

## IIM AWARDS 2021

### IIM National Sustainability Awards

The Ferrous Division of the Indian Institute of Metals has been organizing the National Quality Competition since 1991 to encourage and recognize Quality Assurance aspects in the Steel Sector. The award has been re-named as National Sustainability Award from 2007. The Awards are in the categories of (a) Integrated Steel Plants, (b) Secondary Steel and Alloy Steel Plants and (c) DRI Plants / Pig Iron Plants / Major Re-rolling Units.

*The Awards for the year 2021 are presented to:*

#### **Category I: Integrated Steel Plants**

##### **Joint Winners**

Tata Steel Ltd., Jamshedpur  
&  
JSW Steel Ltd., Bellary, Vidyanagar

#### **Category II: Secondary Steel and Alloy Steel Plants**

JSW Steel Ltd., Salem Works

#### **Category III: Forging Units/ DRI Plants**

Tata Steel BSL Ltd., Angul, Odisha



## IIM AWARDS 2021

### IIM Non-Ferrous Best Performance Awards

The Non-Ferrous Division of the Indian Institute of Metals has been organizing the National Quality Competition since 2002 to encourage and recognize Quality Control aspects in the Non – Ferrous sector. The Awards are in the categories of (a) Units / Plants of large integrated production organization, (b) Secondary processing / fabrication plants of Non-Ferrous product, (c) Units engaged in Casting and Forging of Non-Ferrous Metals & its Alloys.

*The Awards for the year 2021 are presented to:*

#### **Category I: Large Integrated Production Organizations**

##### **Joint Winners**

NALCO, Angul

&

Aditya Aluminium, Hindalco, Sambalpur

#### **Category II: Secondary Processing/Fabrication Plants of Non- Ferrous Products**

MIDHANI, Hyderabad

## IIM AWARDS 2021

### IIM Honorary Membership

The Honorary Membership of IIM is conferred on

**Dr. Amol A Gokhale**

*Former President, IIM [2020-21]*



*Professor, Mechanical Engg. Dept., IITB*

Dr Amol A Gokhale did his B Tech in Metallurgical Engineering from IIT Bombay in 1978, and MS and Ph D in Metallurgical Engineering from University of Pittsburgh, USA in 1980 and 1985, respectively. He served in DRDO for 30 years, retiring as Distinguished Scientist and Director, Defence Metallurgical Research Laboratory, Hyderabad in July 2015. At DMRL, he led research on aluminium lithium alloys for aerospace applications, aluminium alloy components for torpedoes, crash resistant aluminium foams, additive manufacturing of Ni based superalloys, and other very high temperature materials for hypersonic vehicles. In August 2015, he was re-employed as Professor in the Department of Mechanical Engineering in IIT Bombay, where he teaches courses on “Processing of Aerospace Materials” and “Structural Materials”. He is pursuing research in processing and oxidation behaviour of high temperature niobium alloys for rocket applications; studies on shock loaded foams, honeycombs and sandwich structures; damage assisted machining of Ni base superalloys, etc.

He has been a Life Member of IIM from 1993 and has taken part in the organisation of many IIM events at the Chapter level and at the national level. He was a member of the examination committee for 4 years in the 1990s. He was the Convener of NMD ATM 2011 held at Hyderabad. He was Vice Chairman and Chairman of IIM Hyderabad Chapter for four and two years, respectively. He was the Chairman of the International Symposium on Light Weighting held at BITS Goa as part of NMD ATM 2017 and edited a book on the same subject published by Springer Publishers. Leading a team of six, he played a crucial role in the creation of a package of 10 short term courses to be offered by the Institute. Dr. Gokhale is sought after, mostly amongst his peers and students’ community due to his simplicity and affability. As President of the IIM during 2020-21, Dr. Gokhale has put commendable efforts and driven many initiatives in achieving greater heights. Under his leadership, the fraternity witnessed the first ever virtually held 74<sup>th</sup> National Metallurgists Day of the Institute. During unprecedented times due to the outbreak of Covid-19, the monumental success of the flagship event has raised the bar for the future Organizers.

He has been the recipient of several awards from the University of Pittsburgh, DRDO, National Research and Development Corporation and the Indian Institute of Metals, and is a Fellow of the Indian National Academy of Engineering. He has been serving on the NITI Aayog committee on Rare Earth Permanent Magnets (where the recommendations were recently accepted for indigenisation of rare earth metals technology), Ministry of Defence committee on Strategic Materials Policy, Science and Engineering Research Board, various committees of Indian National Academy of Engineering, and Board of Governors of National Institute for Foundry and Forge Technology etc. He is the Chairman of the Research Council of National Metallurgical Laboratory Jamshedpur and the Chairman of the Steering Committee of Aeronautical Research and Development Board, DRDO since January 2017.

## IIM AWARDS 2021

### IIM Honorary Membership

The Honorary Membership of IIM is conferred on

**Dr. Vinod Nowal**

*Deputy Managing Director, JSW Steel Ltd.*

As the Deputy Managing Director of JSW Steel Limited, Dr. Nowal heads the Steel vertical across the three major manufacturing sites viz., Vijayanagar (India's largest integrated Steel Plant), Dolvi, and Salem. These units cumulatively have a capacity of 14.3 MTPA and are on track to achieve 18 MTPA by the end of this calendar year. As in-charge of these 3 units, the CEOs of these units report to him. As a Wholtime Director of the JSW Steel Board, Dr. Nowal is responsible for the development and execution of JSW Steel's long term growth strategy.

Dr. Nowal headed the Acquisitions of Bhushan Power & Steel Ltd., Asian Colour Coated Ltd., PCMD Division of Welspun Corp., Vallabh Tinplate; Iron ore mines in Odisha and Karnataka having reserves of 1.20BnT. He led the expansion on JSW Steel, Dolvi from 5 MTPA to 10 MTPA. Under his supervision increased usage of iron ores from JSW captive mines from 15% (2019-20) to 35% (2020-21) was achieved.

At JSW, Dr. Nowal has been instrumental in attaining a record of 33% rise in export (from 21% in 2019-20 to 28% in 2020-21), an enhanced share of value-added products, a 52% of total sales in 2020-21, an increase in operating EBITDA to Rs. 20,141 Crs (70% rise from 2019-20), initiating Five Collaborative Research Projects with Premier academic institutions and National Research Centers Commissioning of Pellet Plant-3, Wire Rod Mill#2, Continuous Pickling Line#2, Continuous Galvanizing Line#2, Zero Power Furnace (SMS#3), Oxygen Plant, Hot Metal Granulation Plant, Coke Oven Battery. JSW Steel is the flagship company of the JSW group, a USD 11 Billion conglomerate with interests in steel, energy, ports, cement, information technology, and professional football. JSW Steel is a global steel maker with a total Income of over USD 7.3 Billion and is spread over six locations in India and has a global footprint that extends to the US, Europe, South America, Africa and South East Asia. JSW Steel is India's largest steel maker in terms of annual sales revenue. It was adjudged by the Prime Minister's Trophy as the 'Best Integrated Steel Plant' in India. JSW Steel Vijayanagar was ranked 6th Best Steel plant globally by World SteelDynamics.

Dr. Vinod Nowal is currently the Chairman of the IIM Vijayanagar Chapter since 2010 and has contributed immensely for the growth of the Chapter. Under his mentorship & guidance, Shri OP Jindal Memorial Lecture series was started in 2018.

## IIM AWARDS 2021

### IIM Honorary Membership

The Honorary Membership of IIM is conferred on

**Mr. K K Mehrotra**

*Formerly CMD, MECON Ltd. & Presently Chairman, IIM Delhi Chapter*

Mr. K K Mehrotra's significant contributions in advising Andhra Pradesh Government in selection of best process route & capacity as well as evaluation of offer submitted by investors for installation of 3.0 Mt capacity green field integrated steel plant in A.P have been noteworthy. Being the chairman of Metallurgical & Material Engineering Division of The Institution of Engineers (India ), Mr. Mehrotra has been seamlessly organising National Conventions/ Seminars /webinars on contemporary themes in last one year; advising small /medium steel industries on their technology / operation related issues; sharing knowledge through technical talk on technology/ process selection, energy audit /environment ,slurry pipeline transportation related to steel sector / Mining / power sector.

Mr. Mehrotra has been a very active member of The Indian Institute of Metals since 1990 & associated for organizing many seminars at Ranchi. Being the chairman of IIM, Delhi Chapter, he is currently working on further enhancing the visibility & activities through several steps such as associating small & medium scale industries in & around NCR for conducting webinars / seminars. Under his guidance, IIM Delhi Chapter is bringing out the booklet on IIM, Delhi on the occasion of Platinum Jubilee year. The booklet will have the history of IIM Delhi chapter, highlighting its activities since inception, details of its members to have better interaction among themselves & other interesting details. He introduced e-version of the Chapter's in-house magazine "Met Info" which has not only been appreciated by Chapter members for its content & look; but by many Council members & other IIM Chapters too.

Under his able leadership, few measures have been taken by the Institute's Chapter to manage costs effectively by reduction of expenditures involved in printing cost, office expenses & working towards paperless office.

In spite of the outbreak of COVID-19 pandemic, the Chapter continued hosting technical activities & organized 8 webinars / technical talks including Platinum Jubilee webinar by eminent speakers during last couple of years. The Members of the Chapters include veterans and qualified professionals from diversified backgrounds.

## IIM AWARDS 2021

### IIM Platinum Medal

*The IIM Platinum Medal was established in 1966 to honour outstanding contributions to the metallurgical profession and to create an incentive by the recognition of such contribution.*

The IIM Platinum Medal for the year 2021 is awarded to

#### **Dr. Uthandi Kamachi Mudali**

*[FNAE, FIIM, FNASc., FIChE, FNACE, FASM, FAPAM, FIE,  
HFECSE, HMUDCTAA, HMIIM, FASch, FICS]*

*Vice Chancellor, VIT Bhopal University and  
Former President, The Indian Institute of Metals*

Currently the Vice Chancellor of VIT Bhopal University Dr. U. Kamachi Mudali is formerly the Distinguished Scientist of Department of Atomic Energy, and Chief Executive & Chairman of Heavy Water Board, a flagship industrial unit of DAE. As an accomplished team leader, he has always been a source of motivation for everyone, displaying excellent leadership in managing seven plants located at different parts of country, for the production of heavy water and specialty materials. Dr. Mudali has made pioneering individual contributions to advanced materials & coating technology development; corrosion science, engineering and technology; materials, process and equipment development for reprocessing applications; failure analysis, consultancy and societal contributions; for more than three decades during his service at DAE. Dr. U. Kamachi Mudali is an internationally recognized scientist and technologist with outstanding contributions in advanced materials, corrosion science and engineering and coating technologies, and has put in remarkable efforts for implementing many R&D projects of immense value to the country. The hallmarks of his work are high level of originality, focus and innovation, and direct application for field and industry. Dr. Mudali's R&D contributions in the areas of advanced & specialty materials, coatings and corrosion science and technology have been widely cited by peers and other scientists which can be seen with high citations (~8900) and h-index (43).

During his tenure of 33 years at the Indira Gandhi Centre for Atomic Research, Kalpakkam during 1984 – 2017, he has nurtured and built a strong and dedicated scientific team of international reputation. At IGCAR, Kalpakkam, Dr. Mudali was Director of Materials Chemistry & Metal Fuel Cycle, and Associate Director of Corrosion Science and Technology Group, Associate Director of Materials, Process and Equipment Development Group, and Head, IGCAR Patents & Technology Transfer Cell. Dr. Mudali is one of the highly cited researchers with 465 Journal publications, 5 patents, and 8910 citations with a h-index of 43 and i-10 index of 245. He is also recognised in the World's Top 2% scientists from India in the field of Materials. He is the President of Electrochemical Society of India, IISc Bangalore; Chairman of NACE International India Section; Chairman, Indian Institute of Chemical Engineers, Mumbai Regional Centre (IICChE-MRC); Past Chair of East Asia Pacific Area of NACE International, USA, and ASM International, Chennai Chapter; and Former President of The Indian Institute of Metals.

Dr. Mudali is an Adjunct Faculty of Institute of Chemical Technology (University), Mumbai, and PSG Institute of Advanced Studies, Coimbatore; and was Professor & Senior Professor of HBNI University, DAE during 2006-2017, teaching regularly 5 different courses for Engineering and Chemical Sciences disciplines. Dr. Mudali was Member, Board of Studies, Engineering Sciences of HBNI, Mumbai for organising and conducting courses at various units of DAE (2007-2014); Chairman, Chemical Sciences (2014-2017) and Member of Coordination Committee of both Chemical Sciences & Engineering Sciences of HBNI, Kalpakkam (2007-2017). During his tenure at IGCAR, Kalpakkam, Dr. Mudali was Member, Board of Studies of: PSG College of Technology, Coimbatore for Science and Humanities; Lady Doak College, Madurai for Chemical Sciences; KSR College of Engineering & Technology for Mechanical Engineering. He was also Coordinator for Memorandum of Understanding for interactions and R&D projects between IGCAR and: (i) Vellore Institute of Technology, Vellore; (ii) PSG College of Technology, Coimbatore; (iii) National Chemical Laboratory, Pune; and (iv) Institute of Chemical Technology (ICT), Mumbai. He has also guided/coordinated 162 students for their UG/PG/PhD project work, including 12 PhD students of HBNI University, DAE.

Dr. Mudali has been decorated with several distinguished recognitions from India and abroad including: Distinguished Alumnus Award from IIT Bombay where he did M.Tech. Corrosion Engineering in 1984; and, Distinguished Alumnus Award from PSG College of Technology, Coimbatore where he did MSc (Materials Science) in 1982; Best Scientist Award from the Tamilnadu State Council for Science and Technology, Madras; MASCOT National Award from the Electrochemical Society of India, Bangalore; ONGC Corrosion Awareness Award from NACE India; VASVIK Award from VASVIK Foundation, Mumbai; 15th NIGIS Meritorious Contribution Award from NACE, USA (India Section), Mumbai; Vocational Excellence Award from the Rotary Club of Chennai Port City, Chennai; Outstanding & Distinguished Achievement Award from ASM International Chennai Chapter; Homi Bhabha Science and Technology Award of Department of Atomic Energy, Mumbai; National Metallurgists Day Award from Ministry of Steel, Government of India & GD Birla Gold Medal from the Indian Institute of Metals; Indian Nuclear Society Medal from Indian Nuclear Society, Mumbai; Meritorious Award for excellent contributions to corrosion science and technology from National Corrosion Council of India, Karaikudi; DAE Group Achievement Award as Leader & Member (5 times); Fellow & Frank Newman Speller Award of NACE International, USA, the highest recognition and first Indian to get in the field of corrosion.

In view of his academic credentials the Homi Bhabha National Institute (University) of DAE honoured him with “Distinguished Faculty Award” in 2015. Dr. Mudali is a Fellow of 12 national/international bodies including, American Society for Metals, USA; NACE International, USA; Asia Pacific Academy of Materials, China; Indian National Academy of Engineering; National Academy of Sciences India; Indian Institute of Metals; Indian Institute of Chemical Engineers; Academy of Science, Chennai; Institution of Engineers (India); Indian Chemical Society; Honorary Fellow of Electrochemical Society of India; and a Honorary Member of both UDCT Alumni Association, ICT Mumbai, and The Indian Institute of Metals, Kolkata.

Dr. Mudali was Chairman, Advisory Committee of DAE-ICT Centre, Mumbai, and Committee on Strengthening Recycling of E-waste, NITI Aayog, New Delhi; and, currently Chairman of Corrosion

Protection and Finishes Sectional Committee, MTD 24 of BIS, New Delhi; Research Advisory Board of PSG Institute of Advanced Studies, Coimbatore; CII-Corrosion Management Committee, Chandigarh. He was a Member of Board of Nuclear Fuel Complex, Hyderabad; Nuclear Recycle Board of BARC, Mumbai; Governing Council of Atomic Energy Education Society, Mumbai; and presently, Member of Governing Council of Indian National Academy of Engineering, New Delhi; Research Advisory Board, VIT University, Vellore; and, Expert Advisory Committee of ONGC Energy Centre, New Delhi.

Dr. Mudali was a Visiting Scientist at Max-Planck Institute for Iron Research, Dusseldorf, Germany (1994, 2012); Muroran Institute of Technology, Japan (1995); National Institute of Materials Science, Japan (1998); University of Northumbria, Newcastle upon Tyne, UK (2000); Institute for Metallic Materials (IFW), Dresden, Germany (2003-04); University of Tel Aviv, Israel (2003); Institute of Metal Science, Bulgarian Academy of Sciences, Bulgaria (2007); Laser Combustion and Detonation Laboratory, ENSMA, France (2008, 2012); and has also visited leading Institutions in USA, China, Russia, Singapore, and Malaysia. Dr. Mudali has co-edited 20 Books/Proceedings, and is Editor-in Chief of IIM-Springer Book Series & CII-CMC Booklet Series, Associate Editor of Journal of Electrochemical Society of India, and a Member of Editorial Board of five Journals.

Dr. Mudali is a Member of IIM since 1984 and has been Chairman of IIM Kalpakkam Chapter and IIM National Council Member, and made significant contributions to the growth of IIM at Chapter and national level. He is the Founder-Convener of Prof. Brahm Prakash Memorial Materials Quiz at IIM Kalpakkam, and has organized many national and international conference/symposia of high relevance to advanced materials, coatings and processes under IIM Kalpakkam Chapter. He is also the Fonder-Convener and presently Chairman of and has contributed to its growth in conducting various programmes. He was member-secretary and co-editor in Chief of IIM-Universities Press Book Series, and presently Chairman of the Technical Books Editorial Advisory Board. Dr. Mudali is the Former President of IIM and had a successful presidentship during 2019-20.

## IIM AWARDS 2021

### IIM Tata Gold Medal

*The Tata Gold Medal, established in 1980 by the House of Tatas, is awarded to honour a distinguished personality actively connected with the Metallurgical Industries or shall have helped substantially to advance the art and science relating to the Metallurgical Industries/ Metallurgical Science.*

The IIM Tata Gold Medal for the year 2021 is awarded to

#### **Dr. Debashish Bhattacharjee**

*Vice President Technology & New Materials Business, Tata Steel Ltd., Kolkata*

Dr. Debashish Bhattacharjee, currently the Vice President in Technology & New Materials Business with Tata Steel Ltd., is a technocrat having more than 35 years of experience working with one of the largest conglomerates in the world. During his current tenure, Dr. Bhattacharjee established technology roadmap for Tata Steel to achieve technology leadership in specific areas and associated capabilities, identifying Seven Technology Leadership Areas (TLAs), including CO<sub>2</sub> capture & utilization (CCU), green hydrogen generation, low grade raw materials utilization, future mobility, water, coatings, AI in process control. For monetization of intellectual Venture was created; Innoventure was initiated to engage with start-up ecosystem. Under his supervision, alliances were established for institutional collaboration with academia, Government and industry. Dr. Bhattacharjee's commendable contributions helped in setting up the Tata Steel Industrial Consultancy to monetize knowledge; New Materials Business has grown significantly to 150 Crs in the last three years and Medical Materials and Devices has been added; The Ventures commercialized one IP "yellow gypsum" – a modified version of steelmaking slag; Necessary certification for this has been received for use as soil conditioner, Currently, 500 tons produced and is being test-marketed. His recent accomplishments also include CCU pilot plant being installed at Tata Steel's Jamshedpur and Kalinganagar plants, for the first time in India.

The sterling contributions last year which has merited his Award nomination can be attributed to the following:

#### **Steel value chain**

- 1) Established pilot plant for carbon capture and utilization at Jamshedpur plant.
- 2) Initiated pilot plant for generation of green hydrogen and syngas using biomass and municipal waste at Kalinganagar plant.
- 3) Implementation of technology for replacement of expensive hard coking coal with non-coking coal, leading to savings of Rs 200cr.
- 4) Launched "yellow gypsum" a modified version of steelmaking slag as soil conditioner.

#### **New Materials value chain**

- 1) Growing market for polymer matrix composites – Achieved revenue Rs 120cr exit FY20-21.
- 2) Growing Graphene Market-Achieved revenue Rs 70cr exit FY 20-21. Established world's largest Graphene plant (100 TPA)

#### **Professional contributions [In association with IIM]**

##### **As IIM Council Member**

- a. Organized Dara P Antia Memorial Lecture by Professor Donald Sadoway.
- b. Organising Handbook of Steel – a publication for IIM on the occasion of Platinum Jubilee
- c. Co- convener (national organizing committee NMD ATM 2021)
- d. Chairman, Intl Conference Committee

## IIM AWARDS 2021

### IIM GD Birla Gold Medal

*The G D Birla Gold Medal, established in 1985 by Hindalco Industries Ltd., Renukoot, is awarded to honour a distinguished research worker for his/her continuing and outstanding research work in the field of Material Science and Technology.*

The IIM G D Birla Gold Medal for the year 2021 is awarded to

**Prof. Rahul Mitra**

*Professor (HAG) and Head,*

*Department of Metallurgical & Materials Engineering, IIT Kharagpur*

Prof. Rahul Mitra's research has contributed significantly to understanding the structure-property relations of high temperature materials including Mo or Nb-Silicide based multicomponent alloys, ZrB<sub>2</sub>-based ultra-high temperature ceramic composites, Ni-based superalloys and Cf-SiC composites. A major achievement includes development of Nb-silicide based refractory intermetallic alloys with desirable fracture toughness, high temperature strength and oxidation resistance, for use beyond the limit of Ni-based superalloys through alloying. Novel contributions also include pressure-less sintering for near-net shaping, and understanding mechanisms of densification, creep, oxidation and ablation behavior of UHTCs, along with study of oxidation mechanisms of multiphase Mo-Si-B alloys in dry/moist air, and strategies for improving high temperature performance. Furthermore, Al-based composites with refined microstructure and superior mechanical properties have been developed by mushy-state rolling. Additionally, he has contributed to development of nanocomposite thin films with superior mechanical and corrosion properties, along with understanding of processing-microstructure-property relations, mechanisms of deformation and amorphous-nanocrystalline transition.

Prof. Mitra is presently the Chairman of the IIM Kharagpur Chapter, and Convenor of Swarna Jayanti Endowment Fellowship. Earlier, he has served as member of the Editorial Board of Transactions of IIM. He has so far 180 journal publications, 8 book chapters, and two patents. Furthermore, he has authored a book, "Structural Intermetallics and Intermetallic Matrix Composites" (CRC Press), and edited another with title, "Intermetallic Matrix Composites: Properties and Applications," (Woodhead Publishers - Elsevier).

## IIM AWARDS 2021

### IIM – Hindustan Zinc Gold Medal

*The medal established in 1991 by Hindustan Zinc Ltd., is awarded to a distinguished personality for significant contributions to Non-Ferrous Metallurgical Industries and to advance the art and science relating to Non-Ferrous Metallurgical Industries.*

The IIM Hindustan Zinc Gold Medal for the year 2021 is awarded to

#### **Dr. Vilas Tathavadkar**

*Senior Vice President & Function Head Technology (Metals & Mining),  
Aditya Birla Science & Technology Pvt. Ltd.*

As a Head of Metals & Mining Technology Function at Corporate R&D centre of Aditya Birla Group (ABSTC), Dr. Tathavadkar leads the strategic Research & Development programs for Metals & Mining businesses of Aditya Birla Group. Main focus areas are raw material sustainability, reduction in specific energy consumption, new product development & quality improvement, and environment sustainability. Successful development & implementation of technology solutions at various production plants of Hindalco was acknowledged at Aditya Birla Group level. Dr. Tathavadkar was felicitated with the prestigious Innovation Award “Leader in Action - Smart and Sustainable Manufacturing” in the Bizlab-Digital and AI Conclave of Aditya Birla Group, 2021.

**His major achievements for which he was nominated for this Award are enumerated herewith:**

#### **Aluminium Smelting:**

- Novel CuCB technology developed at ABSTC & being implemented in various smelters, helped Hindalco in saving specific energy consumption of about 250 – 300 kWh/ton of Al along with gain in current efficiency to aid extra metal production, which is equivalent to potential savings of ~Rs 86 Cr/yr.
- New magnetically compensated busbar design improved the magneto-hydrodynamic (MHD) stability of pot & facilitated energy reduction in 85 & 235 KA pot lines of Hirakud smelter. These designs reduced specific energy consumption by ~400 kWh/t & ~125 kWh/t in 85 kA & 235 KA pots respectively, which will provide saving of Rs 28 Cr/yr to Hirakud smelter. It's implementation in 360 KA pot lines at Mahan & Aditya smelters will save ~ Rs 35 Cr/yr additionally.
- Digital twin of Smelter Pot is developed at ABSTC for early prediction of Current Efficiency (productivity) and pot life. This will provide plant operators to take corrective actions. Plant trials are in progress at Mahan smelter.

### Copper Smelting:

- Developed technical expertise & CFD models for various unit operations of copper smelters. Models were used to improve design of Waste Heat Boiler (WHB) which was implemented in Dec 2020 shutdown. Modified design helped to increase the feed rate from 66 TPH to 75 TPH. The soft sensors & process models were also implemented at Dahej smelter to facilitate smooth operations. The process modifications at electro-refinery helped to reduce silver losses in cathodes and at Flash smelter helped to reduce the copper losses to < 0.7% in discarded slag. Implementation of these technology solutions has benefit potential of ~Rs 38 Cr/yr out of which Rs 8.9 Cr were realised from partial implementation in FY21.

### Bauxite & Alumina:

- Developed dry beneficiation process for upgradation of low-grade bauxite ores for Hindalco mines. Novel simultaneous grinding and screening set up was designed & developed, which will selective separate silicate clays with lower alumina losses. The patent is filed for this new set-up. The beneficiation of bauxite will increase mine life by 4 years & reduce red mud generation by 10% with better throughput of Bayer process.
- Detailed CFD modelling study helped to improve the process conditions to produce alumina with < 0.25% soda. The process solution is accepted for implementation at Belagavi refinery.
- New processes developed for production of High purity alumina (99.99%) using  $\text{AlCl}_3$  and  $\text{Al}(\text{OH})_3$  feedstock.

### Sustainability:

- Developed technology road map for sustainable management of red mud based on 4R strategy (Reduce, Design, Recycle & Recover). Hindalco sustainability team has integrated this roadmap in their red mud management program.
- Implemented novel process for reduction of phosphorus content in Ferro-Vanadium at Nobel Ferro Alloy Plant of Essel Mines & Industries Ltd. Patent is filed for this process. Implementation of process generated benefit of ~Rs 7 Cr/yr by higher premium and increased share in export market.

## IIM AWARDS 2021

### IIM TSL New Millennium Award

*The IIM TSL New Millennium Iron Award, established in 2014, is awarded to recognise original contributions in the area of blast furnace-based Iron making including process improvements, raw materials selection, preparation, agglomeration, improvements in operating practices, alternative iron making processes.*

The IIM TSL New Millennium Award for the year 2021 is awarded to

**Mr. AVR P Dasu**

*Associate Vice President (AVP), JSW, Vidyanagar*

The incumbent with his strong Technical, Operational and Managerial Expertise have made significant and outstanding contribution in the growth story of JSW Steel Ltd. His innovative approach, Global understanding of process requirement, excellent statistical and conceptual skills have contributed in Standardisation and Optimisation of Corex technology at JSW Steel and the achievement of high productivity levels in Blast Furnace Iron Making.

#### Some of his exemplary major achievements are:

1. Stabilisation of New Iron Making technology in Corex (C-2000) with modification in dust recycling system, usage of iron ore fines, oxygen distribution inside melter-gasifier.
2. Selection of non-coking coal and gunniting of Melter-gasifier; Corex (C-2000) has achieved highest yearly production of 0.763 MT at a high slag rate of > 450 Kg/thm;
3. Achieved High PCI rate 210 & 208 kg/thm in BF#3&4 (UV 4019 m3) at high slag rate (~395 kg/thm), without compromising on productivity – first of its kind in the world;
4. Achieved highest PCI rate year average of 189 kg/thm at slag rate of 397 kg/thm. This unique operation is first of its kind in the world.
5. Best Ever PCI and Coke rates achieved for JSW Vijayanagar BF average 189 and 351 kg/thm at 397 kg/thm of slag rate for FY 20;
6. Achieved Hot Metal production of 11.20 MT in FY 20 at VJNR Works, continuous 4th year of achieving > 11.0 MTPA.

## IIM AWARDS 2021

### IIM MECON Award

*The MECON Award was established from 1984 by Metallurgical & Engineering Consultants [India] Pvt. Ltd to commemorate its silver jubilee celebrations to recognize an individual who has made outstanding work in the development of process, engineering/equipment and system design.*

**The IIM Mecon Award** for the year 2021 is awarded to

**Mr. Ravindra Sangwai**

*Chief, Steel Making & LCP, TATA Steel Kalinganagar*

Amongst Mr. Sangwai's exemplary work it is worth mentioning that, he has reengineered CASOB (Composition Adjustment by Sealed argon bubbling –Oxygen Blowing) operation A Success- Cost Effective Steel Making for range of value-added steel. With his contribution as steelmaking team lead, Tata Steel Kalinganagar has achieved the fastest ramp up in production with rated capacity of 3MT in a short span which is new benchmark in the country.

**In the last 5 years, he has contributed in commissioning and operation of the steel making and continuous casting. Some of major contributions are -**

1. CASOB process have been successfully redesigned and stabilized by him for low Sulphur grades with higher alloying recovery and he made an indispensable unit of the Kalinganagar plant.
2. Designed and commercially established an innovative alternate Si based chemical heating process in CASOB.
3. Demonstrated successful modifications in twin strand slab casting process with advanced technological features of Dynamic soft reduction & dynamic secondary cooling.
4. Optimization of bottom tuyers in large size BOF converters and ladle bottom stirring efficiency for Steel ladles to improve operating efficiency.
5. Implemented crane modification for process safety while handling liquid steel at various steel making units to abort accidents
6. Developed high strength steel grades at TATA Steel Kalinganagar for import substitution
7. Published and presented several technical papers at the various national and international journals & conferences including "The best paper award" in ANQ (Asian Network of Quality)-2019 held at Bangkok

Mr R. Sangwai, is an active member of IIM Kalinganagar Chapter and has contributed immensely towards the development of the chapter. He has written articles and attended NMD conferences. He has organized IIM events of Kalinganagar Chapter for IIM Activities.

## IIM AWARDS 2021

### IIM –NALCO Gold Medal

*The NALCO Gold Medal, established in 2009, is to honour an outstanding professional for his distinguished contributions to the Aluminium Industry, based on Research / Production in the fields of Bauxite, Alumina, Aluminium and its products in India.*

The IIM NALCO Gold Medal for the year 2021 is awarded to

**Mr. Bijay Kumar Das**

*Director[Production] & Director [Commercial], Additional Charge, NALCO*

Mr. Das has 36 years of experience working with NALCO in various capacities. Amongst his laudable contributions, the following are worth mentioning:

- contributed significantly in execution of various projects including diversification & opening of new vista in Renewable Energy Projects (Wind Energy & Solar)
- Conceptualisation & optimal sizing of 4x350MW super critical thermal power plant for brownfield expansion of Nalco.
- Finalisation of 0.6 Million Ton Brownfield Expansion programme at Nalco Smelter with due financial appraisal & DPR.
- Steering addition of Aluminium Alloy Wire Rod Mill of 40000MT/Y to existing Value-added products portfolio of Nalco
- Prepared a long-term goal for Nalco through a Corporate Plan (2017-2032) including improvements in functional efficiency.
- Development and implementation of online automated MIS Dashboard including capital expenditure monitoring system
- Providing strategic inputs for Management and Ministry decisions.
- Steered production & productivity through strategic planning of raw materials, manpower, marketing initiatives, cost optimizations, which enabled Nalco to excel in FY20-21.
- Despite pandemic challenges, Nalco could achieve Highest-ever Bauxite production of 73.65Lakh MT, Highest-ever metal export of 1.92Lakh MT in FY20-21.
- Net Profit for FY2020-21 has jumped by 840% to Rs.1299.53 crore compared to Rs.138 crore in 2019-20
- Lowest cost producer of Alumina and Bauxite in the World in 2020 (Wood Mackenzie Report) xii)
- Commissioning of much delayed Lean Slurry Project (LSP) at CPP for 100% ash utilisation.
- Successful completion of AP2XN Cell Technology with RTA in reducing DC Energy by 150KW/MT.
- A member of JWG in finalising JV with CIL for 0.5 Million Tonne Smelter & 1400MW Power plant.
- Sustainable Development Reporting based on GRI international guidelines ix)
- Graphitization of pots replacing semi-graphitized pots as part of process improvement
- Being Trustee of Nalco Foundation, steered many CSR projects in peripheral villages of Nalco.

IIM-Angul Chapter from strength of 30 members has grown to Large Chapter with present strength of 308 members from different disciplines. Mr. Das was associated with the Chapter from formative days and associated with many deliberations through Seminars, Technical & non-technical lectures and Conferences over the years.

## IIM AWARDS 2021

### IIM ESSAR Gold Medal

*The ESSAR Gold Medal was instituted by Essar Steel Ltd. In 1996 in the golden jubilee year of the Institute's existence, to honour a distinguished metallurgist for outstanding contributions to the Metallurgical Industries in general and in the field of Secondary Steel Making, Electrometallurgy in particular.*

The IIM Essar Gold Medal 2021 is awarded to

**Mr. Sokkuraj Kanakanand**

*President & Unit Head, Hindalco, Birla Copper*

Mr. Kanakanand has an exceptional contribution of 30+ years in manufacturing with his last 10 years in the field of non-ferrous metal. He is a Production Engineer and spent his earlier years with Hindustan Unilever. He joined the Aditya Birla Group in 2009 and has handled important portfolios like Unit Head- Alumina-Muri, Smelter Head- Mahan, CPP Head- Mahan and currently Unit Head- Birla Copper. He is known for his technical know-how, meticulously getting into details, great managerial expertise and a focused leader for Quality, Safety and Sustainability.

His achievements and contributions in the field of metallurgy have been exemplary which includes project like Usage of Low Density AlF<sub>3</sub> for cost reduction, Copper Insert Cu Cathode for Energy Reduction, Throughput improvement in Copper Smelter, Redesign of ESP for better heat utilisation, Redesign of Shaft Furnace and anode furnace#5 refractory for better life, coke blending facility at Mahan etc. He is also spearheading the digitization drive for a Smart Birla Copper.

He led many important projects of Hindalco, including the brown field alumina plant expansion at Muri, the latest technology 360kt Aluminium Smelter in Mahan and the Contirod SMS Rod plant at Birla copper. He brought a paradigm shift in the sustainability philosophy of the metal industry across Aluminium and Copper, which resulted in Customer Centricity and Improved reliability of plants.



## IIM AWARDS 2021

### IIM Distinguished Service Award

*Instituted in 2017, the Distinguished Service Award has been designed to honor individuals who have given continuous and dedicated services to The Indian Institute of Metals in various functionalities and areas of operations.*

The IIM Distinguished Service Award 2021 is awarded to

**Mr. Viswanath MNV**

*Scientific Officer 'G' (retd.), NFC, Hyderabad*

Mr. Viswanath's prolonged and dedicated services to the Institute, and IIM Hyderabad Chapter in particular: initiatives taken in organizing seminars, workshops, and technical lectures, disseminate and update the metallurgical fraternity have been praiseworthy. He served in various capacities, as Secretary, Treasurer and Joint Secretary of the Institute's Chapter, and immensely contributed towards the betterment of the Chapter, in all aspects, since the last 25 years.

## IIM AWARDS 2021

### IIM Certificate of Honor

*Introduced in 2008, the 'Certificate of Honor' is presented to a Chapter representative for his/her commendable work in membership development, interaction with students/ colleges, coordination with IIM Head Quarters and the office bearers.*

The IIM Certificate of Honor Award 2021 is awarded to

**Dr. Chiradeep Ghosh**

*Principal Researcher, Tata Steel Ltd.*



*Secretary, IIM Jamshedpur Chapter*

Dr. Chiradeep Ghosh graduated from IEST, Shibpur (Formerly known as B.E. College, Shibpur) in the year 2001 and subsequently obtained his M.Tech from IIT, Kanpur in 2003. Then he joined the R&D Division of Tata Steel, India and worked there for 7 years. In 2010, he went to McGill University, Montreal, Canada for pursuing his Ph.D. degree. In 2013 after completing his Ph.D. he came back and joined the same department of Tata Steel. In all these years, his areas of research broadly include thermomechanical controlled processes, phase transformation and related phenomenon. Till date he has published more than 50 scientific papers in international peer reviewed journals which include Progress in Materials Science, International Materials Review, Metallurgical and Materials Transactions A, Acta Materialia, Scripta Materialia, ISIJ International etc. According to 'Google Scholar' his current h-index is 17. He has also 9 granted patents to his credit. He was the recipient of 'Leon and Suzanne Fattal' Graduate Fellowships in McGill University for carrying out Ph.D. research. This is awarded annually by the Faculty of Engineering to recruit outstanding students into the faculty's graduate degree programs. He is also the recipient of the '2018 ASM-IIM Visiting Lecturer' from an industrial R&D in India.

## IIM AWARDS 2021

### IIM Certificate of Honor

*Introduced in 2008, the 'Certificate of Honor' is presented to a Chapter representative for his/her commendable work in membership development, interaction with students/ colleges, coordination with IIM Head Quarters and the office bearers.*

The IIM Certificate of Honor Award 2021 is awarded to

**Mr. Lohitendu Badu**

*GM [RCL], MSM & Mills, Durgapur Steel Plant*

*&*

*Secretary, IIM Durgapur Chapter*

An alumnus from NIT Rourkela in Metallurgical Engg in the year 1992 and life member of IIM since 2001, Mr. Badu started his career in research RRL, CSIR at Bhubaneswar and subsequently joined Ispat Alloys Ltd Balasore for hands-on production experience in the ferro alloy industry. In 1993 he joined SAIL DSP at Durgapur unit as Management Trainee (Technical) and worked in sinter making, iron making and raw material handling. He served as technical advisor to Executive Director (works) and gradually moved up the corporate ladder and currently designated as the General Manager overseeing the Quality aspects of the rolling mills areas of Durgapur Steel Plant.

**Mr. Badu's contributions as a Chapter Secretary may be summarized as below:**

- Organized many National Seminars, technical talks and symposiums at Durgapur
- Created and maintained website for the chapter on regular basis
- Initiated lot of synergy with Head Quarter for growth and development IIM and chapter and also for solving various issues.
- First time organized an awareness training programme on steel plant technology for about 500 workers and staff aspiring to be junior officer in the steel plant. It was an unprecedented success.
- Started student chapter at NIT Durgapur for the first time with about 50 student members and played pivotal role for it.
- Increased membership strength with addition of about 70 members including many student members and life members.
- Played instrumental role in roping in another educational institute (DIATM Durgapur) and its students to get involved in the chapter activities and membership development
- Student representatives were included in the executive council of the chapter



## IIM AWARDS 2021

### IIM Dr. A K Bose Gold Medal

*The Dr. A. K. Bose Gold Medal, established in 1972 to perpetuate the memory of Late Dr. A. K. Bose, is awarded to honour a student whose ME Thesis is adjudged as the best.*

The IIM Dr. A K Bose Gold Medal for the 2021 is awarded to

**Mr Raineesh Babu KP**

*Dept of Metallurgy Engineering and Materials Science,  
IIT Indore*

In recognition of his ME Thesis on '**UNDERSTANDING DEFORMATION  
BEHAVIOR OF MAGNESIUM UNDER NANOINDENTATION**',  
submitted and defended during the year 2020-21.

## IIM AWARDS 2021

### IIM Vidya Bharathi Prize

*The Vidya Bharathi Prize established in 1978, is presented to a student for securing highest grade in order of merit in the final B.Tech./B.E./B.Sc. (Met. Engineering) Examinations held in the last academic session among all Indian Institutes of Technologies and Institutes of Technology.*

The IIM Vidya Bharathi Prize for the year 2021 is awarded to

**Mr. Aneesh Amarendra Namjoshi**

*Dept of Metallurgical Engineering,  
IIT, BHU*

For securing the highest grade in order of merit in the final B Tech examination during 2020-21 academic session, among Indian Institutes of Technologies in India.

## IIM AWARDS 2021

### IIM Students' Prize

*IIM Students' Prize, established in 2001, is presented to three students for securing highest marks in order of merit in the final B.Tech./B.E./B.Sc. (Met. Engineering) Examination during 2019-2021 academic session among all National Institutes of Technologies / Indian Universities / Engineering Colleges.*

The IIM Students' Prize for the year 2021 is awarded to

**Ms Swathilakshmi**

*NIT Surathkal*

**Ms Poojitha Durgamahanti**

*VNIT Nagpur*

**Mr Vinayak Gawande**

*VNIT Nagpur*

For jointly securing the highest marks in order of merit in the final B Tech examination during 2020-21 academic session among all National Institutes of Technology / Indian Universities/ Engineering colleges

**Miss Atchutanna Vidyaadhari**

*VNIT Nagpur*

For securing the second highest marks in order of merit in the final B Tech examination during 2020-21 academic session among all National Institutes of Technology / Indian Universities/ Engineering colleges

**Ms Archita Sajjan**

*NIT Surathkal*

For securing the third highest marks in order of merit in the final B Tech examination during 2020-21 academic session among all National Institutes of Technology / Indian Universities/ Engineering colleges

## IIM AWARDS 2021

### IIM Best Chapter Award

*The Best Chapter Award Plaques are awarded to encourage Chapters for overall performance*

The following Chapters in various categories are felicitated  
with the IIM Best Chapter Award[s]:

#### Category: Large Chapters

Winners

Jamshedpur  
&  
Kalpakkam



## IIM AWARDS 2021

### Prof. Brahm Prakash Memorial Quiz Award

*The Prof. Brahm Prakash Memorial Quiz is aimed to create awareness among school students and to motivate them to choose their career in Materials Science and Engineering.*

Was deferred due to n-COVID 19 Pandemic  
[Essay & Elocution Contests were held this year]



## IIM AWARDS 2021

## FELLOWSHIP

*The Fellowship is conferred on members in recognition of their services to the Institute and to the Metallurgy Profession.*

The 2021 IIM Fellowship is conferred on

**Mr. Sudhansu Pathak**

*Vice President, Steel Manufacturing, Tata Steel Ltd.*

**Dr. M Vasudevan**

*SO/H, Head, Materials Development & Technology Division, IGCAR, Kalpakkam*

**Dr. Uday Chakkingal**

*Professor [HAG], IIT Madras*

**Dr. G Appa Rao**

*Scientist 'G', DMRL, Hyderabad*

&

**Dr. Raghavendra Bhat**

*Addl. General Manager (Lab & Qr), Central Mat & Proc Lab.,  
Foundry & Forge Divn. Hindustan Aeronautics Ltd.*