

## THE INDIAN INSTITUTE OF METALS – DELHI CHAPTER

### ANNUAL REPORT FOR THE YEAR 2014-15

Gentlemen,

I take great pleasure in presenting to you the Annual Report of the IIM Delhi Chapter for the year 2014-15.

1.0 The 62<sup>nd</sup> Annual General Meeting of The Indian Institute of Metals – Delhi Chapter for the year 2013-14 was held on Saturday, 21<sup>st</sup> June 2014 at 11.30 AM at Jawahar Dhatu Bhawan, 39 Tughlakabad Institutional Area, M B Road, New Delhi-110 062, wherein the Annual Report and Accounts of the Chapter for the year 2013-14 were presented and approved.

2.0 The outgoing EC proposed the following slate of members for the next EC (2014-15) from the list of consenting members and the same was approved by the AGM at its meeting held on 21<sup>st</sup> June 2014.

- 1 Mr. B R Thukral
- 2 Mr. B D Jethra
- 3 Mr. Raj Tiwari
- 4 Mr. R K Gupta
- 5 Mr. Manoranjan Ram
- 6 Mr. M P Sharma
- 7 Mr. V K Tyagi
- 8 Mr. O P Gupta
- 9 Mr. P K Chatterjee
- 10 Mr. K L Mehrotra
- 11 Mr. G I S Chauhan
- 12 Dr. G N Mohanty
- 13 Mr. N Vijayan
- 14 Mr. V C Singhal
- 15 Mr. S C Suri
- 16 Mr. A C R Das
- 17 Mr. Navneet Singh Gill
- 18 Mr. Deepak Vaidya
- 19 Mr. Anil Gupta

- 20 Mr. Gajendra Panwar
- 21 Mr. Gautam Bhatia
- 22 Dr. Vipin Jain
- 23 Mr. R K Vijayavergia
- 24 Mr. S K Mazumdar

3.0 Subsequent to approval of the slate by the AGM, the positions of the members were decided unanimously by EC in its first meeting held on 21<sup>st</sup> June 2014. Details of the positions of office bearers, as decided by EC, is as under:

<b>Chairman</b>	Mr. S C Suri
<b>Vice Chairmen</b>	Mr. K L Mehrotra Mr. V C Singhal
<b>Hon. Secretary</b>	Mr. Deepak Vaidya
<b>Hon. Jt. Secretaries</b>	Mr. G I S Chauhan Mr. M P Sharma Dr. Vipin Jain
<b>Hon. Treasurer</b>	Mr. P K Chatterjee
<b>Hon. Jt. Treasurer</b>	Mr. N Vijayan
<b>Members</b>	Mr. R K Gupta Mr. Manoranjan Ram Mr. V K Tyagi Mr. Om Prakash Gupta Dr. G N Mohanty Mr. A C R Das Mr. Navneet Singh Gill Mr. Anil Gupta Mr. Gajendra Panwar Mr. Gautam Bhatia
<b>Advisors</b>	Mr. B R Thukral Mr. B D Jethra

Mr. Raj Tiwari

**Invitees**

Mr. R K Vijayavergia

Mr. S K Mazumdar

4.0 **Executive Committee Meetings**

During the year 2014-15, *twelve* EC meetings were held. Among other issues, important decisions related to MMMM 2014, activities and functioning of the Chapter, expenditure etc. were taken. Many new activities were initiated by the Technical Committee and industry around NCR also provided their support in one of the other way. The activities included Plant Visits, Quiz Contest, inviting industry stalwarts and honouring them. However, the mega activity during the year was successful execution of MMMM 2014 event.

The Chapter participated in the NMD-ATM event held at Pune from 12<sup>th</sup> to 14<sup>th</sup> November 2014.

The Chapter also attended the four National Council meetings held during 2014-15.

5.0 **ACTIVITIES DURING 2014-15**

5.1 **Plant Visits**

IIM Delhi Chapter regularly organises plant visits in and around NCR for the benefit of its members. During the year, teams of IIM DC members undertook the following plant visits on 8<sup>th</sup> November 2014 and 14<sup>th</sup> February 2015.

- M/s Mahavir Die Castings, Faridabad: 8<sup>th</sup> November 2014
- M/s Star Wire India Ltd, Faridabad: 14<sup>th</sup> February 2015

These visits provided excellent exposures to members on the operations of *Aluminium Die Casting and Steel Products*. Detailed reports of these visits are available on Chapter website.

5.2 **Quiz Contest**

An inter-school Quiz Contest (*Metallica 2014*) was organized on 1<sup>st</sup> August 2014. Eighteen schools participated in the contest. The Winning Team was sponsored for participation in the Brahm Prakash Memorial Material Quiz held on 13<sup>th</sup> September 2014 at Kalpakkam. A brief write-up on the contest is available at our website

### 5.3

#### **Technical Talks**

- (i) Technical talk on *Necessity of Induction Furnaces for Investment Casting and Precious Metal Melting Application* was held at our Chapter on 20.12.2014. Various aspects of induction melting systems in melting and pouring, heating and heat treating technologies, induction welding systems and vacuum and controlled atmosphere in induction melting furnaces were highlighted in the technical talk.
  
- (ii) Technical talk on *Risk Management in Capital Projects and its Mitigation in Public Sector Undertakings* was organized at our Chapter on 24.1.2015. Different kinds of risks in organizations were highlighted. Some of these risks are:
  - a. Project Risks
  - b. Management and Operations Risks
  - c. Credit Risk
  - d. Liquidity Risk
  - e. IT Systems risks
  - f. Market Risks
  - g. Legal Risks
  - h. Disaster Risks
  - i. Political Risks
  
- (iii) *Workshop on Aluminium Die-Casting* was held at our Chapter on 28.3.2015. The Workshop covered various issues like Foundry Chemicals and Die-release Agent in the Aluminium Industry, Automation aspects in the Aluminium Die-Casting Sector and Aluminium Alloying Elements.
  
- (iv) Our Chapter participated in the meeting convened by Ministry of Heavy Industries on *Equipment Manufacturing Facilities for Steel Plant* on 13.1.2015. Various issues of Equipment Manufacturing Facilities in India for Steel Sector were discussed in this meeting.

Detailed Reports on all the Technical Programmes are available on Chapter's Website

### 5.4

#### **Chapter Level NMD**

Chapter Level NMD Celebrations were held at our Chapter on 10<sup>th</sup> January 2015. On this occasion, the following members of Delhi Chapter were awarded for their "*Outstanding contributions to the cause of Metallurgy and Metallurgical Profession*":

- ❖ Dr. G N Mohanty
- ❖ Mr. P K Chatterjee
- ❖ Mr. R K Gupta
- ❖ Mr. A C R Das

Shri S S Mohanty, Director (Tech.) SAIL and Vice President, IIM was the Chief Guest of the Chapter Level NMD event. He made valuable remarks about Skills Development in Steel Sector.

#### 6.0 **Participation of IIM DC members in the following programmes:**

- (i) Participation in the *National Conference on Promoting Awareness & Usage of Steel Slag organised by FICCI* on 25<sup>th</sup> April 2014. The application of BOF and SMS slag and the need to identify more areas where SMS slag can be used were highlights of the Conference.
- (ii) Participation in the *6<sup>th</sup> India Coal Summit organised by ICC* on 23<sup>rd</sup> September 2014. A number of problems being faced on the coal production, availability, shortages and coal mining issues were deliberated in the Summit.
- (iii) Participation in the *India Steel 2015 Launch function, organised by FICCI & Ministry of Steel* on 8<sup>th</sup> October 2014. The challenges being faced by the steel sector and the issues relating to expansion of steel capacity of India were discussed in the event.
- (iv) Participation in the Programme on *Accelerating Economic Growth through speedy implementation of projects – Challenges for engineers and technologists organised by ECI* on 29<sup>th</sup> October 2014. The problems pertaining to project implementation were discussed in this programme.
- (v) Participation in the *8<sup>th</sup> India Energy Summit organised by ICC* on 11<sup>th</sup>/12<sup>th</sup> Nov. 2014. The objective of the Summit was to discuss issues of coal, energy management, new & renewable energy and energy security aspects.
- (vi) Participation in the *8<sup>th</sup> India Steel Summit organised by ASSOCHAM* on 13<sup>th</sup> November 2014. The Summit covered the problems being faced by Indian Steel Industry.
- (vii) Participation in the *6<sup>th</sup> Converging India Leadership Summit by FICCI* on 16<sup>th</sup> Dec 2014. The Theme of the summit was “Meeting the Aspirations of a one billion plus Economy: Issues Challenges and Way Forward”.
- (viii) Technical interaction with Prof Pradeep K Rohtagi, Distinguished Professor, University of Wisconsin, Milwaukee, USA, on *Metals Solidification Aspects and Composite Materials including development of advance materials* on 17<sup>th</sup> Jan 2015. This was quite interesting interaction. Prof. Rohtagi made a presentation on the development of metal composites for automobiles.

- (ix) Programme on *Non-Ferrous India 2015 organised by ICC* on 30<sup>th</sup> January 2015. Issues relating to MMDR Act, Aluminium & Zinc production and the status of specialty products of Nickel & Cobalt were touched upon in the programme.
- (x) Programme on *100 Smart Cities organised by ICC* on 10<sup>th</sup> February 2015. Issues like infrastructure, clean energy, roads, environment, health care, energy, digital development, transport, safety and security were discussed in the Programme.
- (xi) *Golden Jubilee Celebrations of Steel Furnace Association of India* on 20<sup>th</sup> February 2015. On this occasion a Conference on *Target 300 MT Crude Steel by 2025: Challenges of Raw Material Security, Infrastructural Constraints Issues relating to Land Acquisition and Environmental Constraints* was organised. Various constraints relating to achievement of the production of 300MT steel production by 2025 were deliberated upon in the programme.
- (xii) *Launching Workshop-Knowledge Platform for Energy Efficiency* organised By British High Commission, Institute for Industrial Productivity Council and Bureau of Energy Efficiency on 26<sup>th</sup> February 2015. Best practices employed by various organizations in energy consumption were presented in the Workshop.
- (xiii) *Interactive Session on 100 Years of Coke Oven Technology in India* held on 26<sup>th</sup> February 2015. Evolution of coke oven technologies were touched upon in the Session. A unique process developed by JSW on treatment of coke ovens effluents was also presented in the Session.
- (xiv) *India Corporate Governance & Sustainability Vision Summit organised by ICC* on 3<sup>rd</sup> March 2015. Issues relating to good governances and innovative approaches to meet the challenges of good governance were discussed in the Summit.
- (xv) *10<sup>th</sup> North East Summit held by ICC* on 13<sup>th</sup> & 14<sup>th</sup> March 2015. The need for creating public-private partnership for creation of infrastructure and various connectivity issues in the North-Eastern Region were raised in this platform.
- (xvi) *3<sup>rd</sup> Green Energy Summit organised by ICC* on 21<sup>st</sup> March 2015. The Theme of the Summit was “Renewable Energy: A Key Enabler for Sustained Growth”.
- (xvii) *Environment and Forest Clearances - Sustainable Development of Infrastructure was organized by ASSOCHAM* on 31<sup>st</sup> March 2015. Environmental issues relating to water resources project, challenges of multi-agency clearances for Mining and Environmental Clearances for Hydropower projects were discussed in the Programme.

## 7.0 **Metals, Minerals, Metallurgy & Materials (MMMM-2014)**

7.1 The 10<sup>th</sup> edition of Metals, Minerals, Metallurgy & Materials (MMMM - 2014) was organized by our Delhi Chapter jointly with the International Trade & Exhibition Events Pvt Ltd from 5<sup>th</sup> to 7<sup>th</sup> September 2014 at Pragati Maidan, New Delhi. The event consisted of an Industrial Exhibition

and concurrent International Conference on 'Emerging Trends in Metals & Minerals Sector'. 37 technical papers were presented in the International Conference.

- 7.2 The MMMM 2014 event consisting of Exhibition and concurrent Conference was inaugurated by Shri Narendra Singh Tomar, Hon'ble Minister for Steel & Mines on 4<sup>th</sup> September 2014.
- 7.3 189 leading Exhibitors from 31 countries participated in the Exhibition. The event received an outstanding response from the industry. As many as 8214 visitors from 18 countries visited the Exhibition.
- 7.4 As regards Conference, apart from Inaugural and Valedictory sessions, there were seven technical sessions in the Conference. In these Technical Sessions, 37 papers of International standards (20 from doyens of industry and the rest from Exhibitors highlighting the latest technological developments) were presented. Over 200 delegates from Indian and overseas companies participated in the Conference deliberations
- 7.5 The brief details of the technical sessions are given below

#### **Plenary Session**

**Dr. R. N. Patra**, President IIM and CMD Indian Rare Earth Ltd. Chaired the Session. **Professor B.K. Mishra**, Director, CSIR-Institute of Minerals and Materials Technology, Bhubaneswar delivered a talk on '*Problems in processing of different iron ores of India - some alternative techniques*'. He addressed the issues of large quantity of banded iron ores and other low-grade materials occurring in Indian iron ore mines, which are difficult to be beneficiated. He suggested the technological advances, such as, reduction roasting followed by magnetic separation or microwave heating for the beneficiation of these low-grade ores. Under the optimum conditions these technological advances were found to deliver quality magnetic concentrates assaying 63-65% Fe with 65-70% recovery. **Professor K.A. Natarajan**, Department of Materials Engineering, Indian Institute of Science, Bangalore delivered his presentation on '*Biotechnological innovations in gold extraction: Indian imperatives*'. He highlighted the innovations of biotechnology for the extraction and mining of gold with illustration of examples. He demonstrated development of a bioreactor technology at IISc Bangalore in the collaboration of Hutti Gold Mines, Karnataka State for the biooxidation of the refractory G.R. Halli concentrate. **Mr. Sushim Banerjee**, Director General, Institute for Steel Development & Growth (INSDAG), Kolkatta delivered his talk on '*Steel-market demand generation and new application areas*'.

#### **Session on Mining & Minerals Preparation Technology**

The session was chaired by **Mr. S. Ranade**, Executive Director, JSW Steel Ltd.. There were six speakers in this session. **Mr. Ujjal Chakraborty**, Chief Pellet Plant, Tata Steel Ltd., Jamshedpur delivered his talk on '*Problems and issues in production of pellets in India and Tata Steel's initiative thereof*'. Mr. Chakraborty presented a brief view of the Tata Steel's world's first integrated steel plant having 6 MTPA pellet production capacity and discussed the

issues pertaining to it. He pointed out that introduction of pellets enhances mine life by using lower grade ores. He also highlighted the innovative steps taken by his company in the process of production of pellets. **Mr. K K. Mehrotra**, Former CMD, MECON Ltd. delivered a presentation on *'Slurry pipeline: cost effective solution for India steel industry for transportation of iron ore for long distance'*. Mr. Mehrotra presented a brief review of iron ore scenario in India apart from need and advantages of slurry transportation system. He gave global and Indian scenario of slurry pipeline for iron ores and a cost benefit analysis of slurry pipeline vis-a vis transportation by Railways. **Mr. R. Prasad**, MECON Ltd., presented his talk on *'Enrichment of low grade iron ores by beneficiation'*. He indicated that in order to achieve the targeted steel production of 300 MTPA by 2025-26 in the country, iron ore requirement will be of the order of 500 MT. To achieve the said target, it is essential to evolve alternate beneficiation technologies for the effective utilization of low and sub grade iron ores, which are likely to be added to the National resource base of iron ores as per the guidelines of IBM. The speaker discussed the methods of enrichment of low grade iron ores to make suitable for sinter and pellet products in a techno economic and eco friendly manner. **Dr. S.K. Pan**, DGM & HoG (Mineral Engg.) Research & Development Center for Iron & Steel, SAIL, Ranchi delivered his talk on *'Recovery of rich fine iron mineral particles through beneficiation of slimes and low grade hematite ores of SAIL captive mines'*. Dr. Pan discussed the intense beneficiation techniques for recovery of iron mineral part to more than 95% from low grade ores. The implementation of innovative slime beneficiation systems at the SAIL R&D center in SAIL's two iron ore captive mines, viz., Dalli and Meghahatuburu and further expansion plans for the Bolani and Barsua mines were highlights of the presentation. **Mr. Sanjay Wadhwa**, GM Projects, Korus Engineering Solutions Pvt. Ltd. delivered a presentation on *'Iron ore pelletization-Technology and need'*. He addressed that about 70-75% of production of iron ores in India is of fines, which need be agglomerated for further processing. For the processing of low grade iron ore fines, pelletization is the highly profitable proposition since the fines should not be disposed at throw away prices and may be converted into pellets, which adds to value. **Mr. Hervinder Singh**, Business Head-Mining, Jindal Steel & Power Ltd., presented a talk on *'Emerging trends in the Mining Industry'*. He gave a brief overview of JSPL and presented the current challenges and opportunities in the mining industry focusing on the futuristic requirements of the steel industry.

### **Session on Iron and Steel Technologies**

The session having eight speakers was chaired by **Dr. B.N. Singh**, Chief Technologist, Uttam Group & Former CMD, RINL. **Mr. P.C. Mahapatra**, AVP JSW Steel Ltd. delivered talk on *'Innovations in iron and steel technologies at JSW steel Ltd.'*. The speaker discussed some of the initiatives taken at JSW steel to efficiently deal with the Indian raw material conditions



viz. handling of high manganese iron ore fines and its management, till steel making. The processing aspects of low grade iron ores at JSW were also discussed. The key highlights of the talk were installation and commissioning of Slime Recovery Plant, Micro-pellet plant and Briquetting plant as some of the key innovations undertaken at JSW Steel. **Mr. Sungkee Shin**, POSCO, Pohang, Korea delivered his presentation on '*Technological advances of FINEX iron making Process*'. He presented the comparative aspects of the FINEX process viz-a-viz conventional blast furnace process. The history of scaling up of FINEX process at POSCO upto 2.0 MT/Y was presented. The speaker emphasized the fact that the FINEX process could sharpen the competitive edge by continuous challenges of the improvement of operation and facility. **Mr. Luo Yang** (Robbie) Ramon Science & Technology Co. Ltd., Hunan, China presented a talk on '*A new vibration ladle slag detection system*'. The various aspects of the new vibration ladle slag system in terms of development of hardware and software parts were discussed. The new system is applied to several steel continuous casters and has achieved close to 95% alarm accuracy with the new algorithms. **Dr. Bala Paramanathan**, Danieli Corus presented a talk on '*High capacity iron making with large, modern blast furnaces*'. In view of the growing capacity of the steel making industry, the speaker presented upcoming expansion projects being encouraged by the Government of India which include traditional BF-BOF plants, since they are efficient and economic. Simultaneously, small and classical blast furnaces are replaced by the large and modern blast furnace plants, which was the highlight of the talk. **Mr. Jae-Ho-Lee**, POSCO and Engineering Center, Pohang, Korea delivered a presentation on '*Introduction of LBR revamping construction method*'. In this presentation, the speaker introduced the actual construction practices of POSCO E&C and its technological aspects; mainly, the features and benefits of the Large Block Ring method of Blast Furnace. **Mr. Takanori Iwakiri**, Nippon Steel & Sumikin Engg. Co. Ltd., Fukuoka, Japan delivered a talk on the '*Blast furnace equipment of Nippon steel and Sumikin Engineering*'. He discussed about the various equipment and technologies his company has improved and developed continuously for the blast furnaces. The systems, he discussed, included top charging system, solely BFG operation system for hot stove and multi-vessel electrostatic precipitator (MVEP). **Mr. Fuminori Otake**, Nippon Steel & Sumikin Engg. Co. Ltd., Fukuoka, Japan presented a talk on '*Establishment of the long-life technology of the BOF*'. He discussed about the steel-making plants which his company has been making and has various effective features, viz. long life BOF, Kanbara Reactor (KR) for desulfurization and Ruhrstahl Hausen (RH) equipment for achieving low-level carbon content. Specific emphasis was given on the newly introduced long-life BOF system. **Mr. Taro Sato**, Mitsubishi-Hitachi Metals Machinery Inc., Hiroshima, Japan delivered a talk on '*Introduction of technologies applied to # 2 Hot Strip Mill at JSW, Vijayanagar works*'. In his presentation, he discussed about the No. 2 hot strip mill at JSW Vijayanagar works being one of the most modern hot strip mills in India for which MH has

supplied the most advanced technologies including the Pair Cross system with the Mill Stabilizing Device.

### **Session on Innovations in Non-Ferrous technologies including rare earths**

**Mr. R.N. Parbat**, Past President, Indian Institute of Metals chaired this session. **Dr. B. D. Pandey**, Chief scientist and Head-Metal Extraction and Forming Division, National Metallurgical Laboratory (NML), Jamshedpur delivered his presentation on the '*Scenario of rare earths in India and extraction of rare earths from secondary resources*'. Dr. Pandey presented the current scenario of the primary resources of rare earths in India and elsewhere vis-à-vis their application and demand. Further, he highlighted the recent R&D work carried out at CSIR-NML on the hydrometallurgical extraction of rare earth metals, such as, yttrium and europium alongwith other metals, La, Ce and Tb from the phosphor powder of fluorescent lamps. **Professor Goutam Sutradhar**, Department of Mechanical Engineering, Jadavpur University, Kolkatta delivered a presentation on '*Metal matrix composites for the transportation systems to conserve energy*'. He addressed the challenges for the Automakers and manufacturing engineers in making light-weight vehicles and fuel efficient with low emission without sacrificing the reliability and efficiency. He presented the opportunities to manufacture low cost cylinder liners, pistons, bearing surfaces, cam shaft tappets, lifers, rockers, etc in Indian foundries, which he has developed in collaboration with Wisconsin-Milwaukee University in the USA. **Mr. Yuri Khakhanov**, Skolkovo Innovation Center delivered a talk on '*Supporting developments of MMMM Sector related innovative technologies*'. He introduced that Skolkovo is a strategic development institution established by the Russian Government that provides financial support to both Russian and international innovative projects. He discussed the cluster support system at his institution and also presented examples of projects in the MMMM sector. **Mr. Anup Mehra**, Director-Commercial MOIL presented a talk on '*Overall view of manganese ore in Indian steel sector-present and future*'. He anticipated that due to the targeted production capacity of 300 million tons of crude steel after 10-15 years, the gap between demand and supply of manganese ore will increase that will require higher imports. Since, the average grade of manganese ores produced in the country is low, high grade manganese ores will be required to be imported. He impressed upon the fact that there is a need for acquiring high/medium grade manganese ore properties abroad, to supplement the manganese ore requirement.

### **Session on Shaping of Metals**

The session having five speakers was chaired by **Dr. Sanak Mishra**, the Past President Indian Institute of Metals. **Mr. D.D. Kapur**, Joint Managing Director, Korus Engineering Solutions Pvt. Ltd., delivered a presentation on '*Philosophy of setting-up various rolling mills engineered by*

*Korus in past nine years*'. He gave a brief introduction of various projects handled by his company. He discussed about the various types of rolling mills engineering supplied by his company. He also presented the emerging trends of TMT rebar mills, wire rod mills, coil routes, heavy bar mills and structural mills, etc. **Mr. Shin Ozeni**, Mitsubishi Hitachi Metals Machinery Inc., Hiroshima, Japan delivered a presentation on *'Newly developed universal crown control mill HYPER UC-MILL for rolling of high hardness and thinner steel'*. He discussed that HYPER UCM-Mill enables rolling of higher strength materials than is possible with conventional mills and materials of the same strength can be rolled to thinner thicknesses. He also discussed the methods to decrease the investment in TCM mills for the benefits to the steel makers. **Mr. Hiroki Maegawa**, Nippon Steel & Sumikin Engineering Co. Ltd., Fukuoka, Japan presented a talk on *'Advanced internal quality control technologies for top quality of special bar quality'*. He discussed that Nippon steel has been working on the innovative technological development for CC machines of blooms and billets to meet the strong demand for those quality required by Nippon steel and Sumitomo Metal Corporation and other main Japanese special steel manufacturers. He also highlighted that his company assures the quality of special steel by steady operation in constant casting temperature with the state-of-the-art technologies. **Mr. Pankaj Puri**, DGM, Rail & Structural Mill, Bhilai Steel Plant delivered a talk on *'New rail technologies and prospects for Indian railways logistics'*. He addressed that SAIL with its rail manufacturing facilities at Bhilai has been a partner in progress and development of Railway infrastructure since past five decades. He discussed the upcoming URM facilities being installed at Bhilai being the most sophisticated technologies from across the world and would be an asset for the SAIL to remain a world class long rail producer. **Mr. Matthias KNABL**, Vice President, INTECO Special Melting Technologies, GmbH, Austria delivered a talk on *'Production of heavy forging ingots upto 250 tons via the ESR process'*. The presentation focused on the operational experiences of large sized ESR plants especially with the challenge of a well-controlled starting and hot topping process as well as the electrode change procedure. The results of attainable quality of ESR ingots produced in a 250-tons static mold as well as a 145 tons short collar mold ESR plant were also presented.

### **Session on Advanced Materials and Materials Handling**

**Mr. B.R. Thukral**, Former ED, Hindustan Zinc Ltd. and Past Chairman IIM Delhi Chapter chaired this session. **Dr. S. Narahari Prasad**, DGM, MIDHANI presented a talk on *'Advanced materials for the Strategic Sector'*. He addressed the major challenges for the processing of critical materials at MIDHANI and its contributions to the strategic sectors of the country viz. Defence, Space and Atomic energy sectors. An overview of the alloy and product development programs was presented and futuristic materials, such as, Graphene, refractory metal alloys, powder metallurgy superalloys, etc were also discussed. **Mr. Avtar Singh**, Head, Product

Application Group, Flat Product Technology Group, Tata Steel Ltd., Jamshedpur presented a talk on '*Challenges in development of Automotive steel*'. He gave a brief overview of Tata Steel and its activities. He presented the challenging opportunities towards the development of automotive steel aiming to meet the requirements of the present scenario. **Mr. Deepak Viadya**, Outokumpu delivered his presentation on '*Innovation in stainless steel: responding to global megatrends*'. He focused on the recent developments at his company on the materials and technologies in the area of stainless steel responding with the global trends. He discussed recent innovations with the duplex, ferritic and austenitic steel family for the components developments for the processing industries, refineries, power generation, bridges and temples, etc. **Dr. A.K. Kapoor**, DRDO, Hyderabad delivered a presentation on '*Materials science for missiles*'. He briefly discussed the materials being used for the missiles and various products developed by the DRDO in this area. **Mr. Jagannathan Rajagopalan**, Managing Director Pesmell South Africa presented a talk on '*Case study on JSW CRM #2 logistics: Merits of automated YMS & ASRS*'. He presented their state-of-the-art Cold Rolling Mill 2 (CRM 2) JSW Bellary that has adopted a total automatic yard management system and ASRS wherein coil products are handled as much as possible with extreme care without damage to the sides or layers insuring the receipt of the coils to the customer as were produced with extreme care and advanced technology.

### **Session on Energy and Environment**

**Dr. Ajay Mathur**, Director General, Bureau of Energy Efficiency chaired this session. **Dr. Amit Chakraborty**, GM, JSW steel Ltd., delivered his talk on '*Waste management at JSW Steel Ltd.*'. He highlighted JSW steel's innovative approach towards identifying measures to maximize utilization of generated wastes and achieve the zero status. He addressed the JSW's adoption of waste management technologies; such as, micro-pellet plant, mill scale briquetting plant, slime recovery plant and utilization of granulated blast furnace slag and LD slag as aggregates for roads towards the maximum utilization of the generated wastes. **Mr. Prabhas Kumar**, Research & Development Center for Iron and Steel SAIL, Ranchi delivered a presentation on '*Efforts towards reduction in energy consumption and GHG emission in SAIL plants*'. He highlighted that RDCIS has been playing a lead role in identifying energy conservation schemes for the reduction in energy consumption in SAIL plants and has contributed significantly towards energy conservation and greenhouse gas reduction by implementation of innovative ideas including in-house developed energy efficient combustion systems and optimization of thermal engines. **Mr. Manu Bhargava**, Exxon Mobil Lubricants Pvt. Ltd. presented a talk on '*Energy efficiency in Mining operations*'. He presented a global energy outlook for 2040 and sustainable technologies having the investment opportunities. He discussed the extensive applications and Mobil industrial lubricants in mining sector. He also

discussed the top mining challenges and correlated with energy efficiency in the mining operations. **Mr. Steve Steranka**, Radcomm Systems Corp delivered a presentation on '*Radioactivity in the metals industry*'. He discussed the radioactive hazards and accidents occurred due to the unsafe practices in the metal industry. The effects of such accidents were presented with reference to the actual incidents happened. The technological advances in the metals sector to prevent such incidents were also elaborated. **Mr. K. Shanmuganathan**, Project Assistance (Tech) UNDP-Aus AID-MoS Steel Upscaling project delivered a talk on '*Energy efficiency in steel Re-rolling Mills in India*'. He discussed that the energy efficiency intervention made in steel rerolling mills (SRRMs) showcased reduction of energy consumption by 30%. He also presented an update of energy efficient interventions made, the results achieved and the follow up actions taken up to upscale energy efficiency in small scale steel industrial units in India. **Mr. Anand Kumar Jha**, MECON Ltd. delivered a talk on '*Alternate energy options for bulk production of DRI under Indian context - A green technology initiative*'. He emphasized that the use of alternate fuel options, viz. Corex export gas, Coke oven gas, Syn gas from coal gasification, underground coal gasification, shale gas for DRI production, etc provide a good opportunity to meet the growing energy demand in the country. He discussed that as a futuristic scenario, Shale gas, UCG and CBM can provide options for use in gas based DRI, once significant breakthrough is achieved in its bulk discovery through appropriate technology interventions and the policies of the Government of India.

- 7.6 The Valedictory Session of the Conference was presided over by Shri Vishnu Deo Sai, Hon'ble Minister of State for Steel & Mines. The Hon'ble Minister addressed the audience and appreciated industrious efforts of the organizers of the MMMM 2014 exhibition and the international conference to make it a successful and memorable event.
- 7.7 The Exhibition Summary was given by Mr. B.D. Jethra, Former Advisor Planning Commission of India and Member-Advisory Committee, IIM Delhi Chapter. It was followed with the distribution of awards for the exhibitors by Honorable Minister of State for Steel & Mines and Ms. Kim Willis, CEO, ITEI. The Session and the International Conference concluded with a formal Vote of thanks proposed by Mr. Deepak Vaidya, Honorary Secretary, IIM Delhi Chapter.
- 7.8 Post Conference, a *Consolidated Event Report* containing summary of the Conference and its Recommendations emanating from the Conference was compiled and got printed. Copies of the same were sent to important PSUs and also to the economic ministries of Govt. of India, National Council Members and also to other Chapters of IIM. A Copy is available on Chapter Website.

7.9 The feedback of the Conference was very encouraging. The contents of the technical papers and organization of the Conference were appreciated by various quarters. Most of the technical presentations, made during the International Conference, are available for reference purposes on MMMM Conferences Website, being maintained by the Chapter

## 8.0 **Conferment of IIM Awards**

### IIM Platinum Medal

Mr. L. Pugazhenthay, Past President, IIM (2008-09) & Executive Director, ILZDA received the "PLATINUM MEDAL" at the NMD Award function at Pune on 14 November 2014 for his significant and outstanding contributions to the nonferrous metals sector.

### IIM Fellowship

IIM Fellowship was bestowed to the following members of the Delhi Chapter for their outstanding contribution in the metallurgical sector. Three awards were given during the NMD/ATM meeting held at Pune on 14<sup>th</sup> November 2014.

- Mr. Anil Gupta
- Dr. Arvind Bharti
- Dr. A K Srivastava

## 9.0 **Holi Milan Get-together**

The Delhi Chapter of IIM organised Holi Milan luncheon get together on 8<sup>th</sup> March 2015 at our Chapter.

Members of IIM DC along with their families participated in the get-together. The Chairman IIM DC welcomed the members and their families to the function. Holi-Milan greetings were exchanged among the members and their families. It was an enjoyable event with recitation of jokes / anecdotes and poems by the guests present. The function was attended by about 60 members including their families and very well appreciated by all the guests.

## 10.0 **News Letter**

A News Letter is being published regularly by the IIM DC. The technical contributions in the newsletter have become a regular feature. Technical & Publication committee headed by Mr. K L Mehrotra has taken active interest and the technical articles and other contents are well appreciated by members associated with the Delhi Chapter. Soft copies of the current issues as well as old issues of the News Letter are also available on IIM-DC website. The contents of the monthly Newsletter are receiving good responses and appreciation.

## 11.0 **Library Facilities**

IIM DC has more than 800 books and journals in the library.

The following journals are being received in our library.

- ❖ JPC Bulletin on Iron & Steel
- ❖ Steel Tech
- ❖ Minerals & Metals Review
- ❖ Metals World
- ❖ Metal News
- ❖ Steel 360
- ❖ Steel Insights

## 12.0 **Membership Development**

The Chapter has added eighteen new members during 2014-15. Our total membership strength as on 31<sup>st</sup> March 2015 is 350.

## 13.0 **Web-sites**

The web-site of IIM Delhi Chapter ([www.iim-delhi.com](http://www.iim-delhi.com)) is being regularly updated by detailed posting information on various activities being undertaken by Chapter. In order to consolidate complete information related to all MMMM Conferences, the Chapter has also created a separate website ([www.mmmmconferences.com](http://www.mmmmconferences.com)). Information related to all the MMMM Conferences held so far are being posted on the website.

## 14.0 **AMIIM Examinations**

The AMIIM Examinations were held in the Chapter premises in June & December 2014. Mr. O P Gupta was the Officer-in-Charge for both the sessions.

## 15.0 **Acknowledgements**

The Executive Committee of the Chapter expresses its gratitude and sincere thanks to all the members associated with the Delhi chapter for their full cooperation to the office bearers and the Executive Committee. Cooperation received from the Head Office is also gratefully acknowledged. The chapter would like to extend thanks to auditors M/s Nath & Hari for advising in the preparation of accounts and finally auditing the same.



Deepak Vaidya (Hony. Secretary)