



ISA-4: Bhilai, India

The International Steel Academy Review

The fourth [AIST International Steel Academy \(ISA\)](#) was held 16–21 January 2015 at the Human Resources Training Center, Steel Authority of India Ltd. (SAIL) Bhilai Steel Plant, Bhilai, India. One hundred and sixty-four delegates from Essar Steel, National Mineral Development Corp. (NMDC), Jindal Steel and Power Ltd. (JSPL), Harsco, Rashtriya Ispat Nigam Ltd. (RINL) and SAIL; delegates from Germany, Turkey and Thailand; and students from National Institute of Technology, Warangal attended this year's academy.



सेल SAIL
A Maharatna Company



“The International Steel Academy is a unique confluence of academics, shop floor engineers, research scientists and engineering students. The instructors — Dr.-Ing. Jürgen Cappel and Dr. Ir. B.C. De Cooman — are stalwarts in the arena of steelmaking. The classroom sessions and discussions were highly engaging and extremely enriching. I think it’s an excellent platform for learning and networking with eminent steelmakers across the globe.”

Preeti Bhatnagar, AGM, Bhilai Steel Plant, SAIL

The ISA was designed to bring world-class steel education directly to regions experiencing accelerated growth. The course provides a broad and deep understanding of the steel manufacturing process. Two separate courses, The Making, Shaping and Treating of Steel (MSTS) 201: Steelmaking and MSTS 202: Steel Shaping and Treating, bring together decades of internationally recognized efforts acquired in industry and academia, reflecting the vitality and global nature of steel manufacturing innovation. Held concurrently over four and one-half days of intense education, the individual courses are subdivided into the major elements required to produce quality steel products in today’s economy.

Mr. S.S. Mohanty, managing director, SAIL Technology, and AIST India Member Chapter chair, invited AIST to hold the 2015 ISA in Bhilai to showcase the modernization and growth of the SAIL steelmaking operations and support AIST’s global growth initiative to evolve industry collaboration in steelmaking regions around the world.



Shri S.S. Mohanty, Shri C.S. Verma and special invited dignitaries lighting the ceremonial lamp.

On the evening of 16 January 2015, Shri C.S. Verma, chairman, SAIL, inaugurated the International Steel Academy. Children from a local primary school greeted the delegates with a welcome song. The academy was officially inaugurated by the lighting of the ceremonial lamp. Shri S.S. Mohanty; Shri T.S. Suresh, director, Projects & Business Planning, SAIL; Shri S. Chandrasekaran, CEO, Bhilai Steel Plant, SAIL; and Mr. Ronald Ashburn, executive director, AIST, were all present at the ceremony. After the ceremonial lamp lighting, Shri Verma presented a comprehensive



MSTS 201 Class: Group 1 of attendees



Dr.-Ing. Jürgen Cappel

Dr. Cappel holds a doctoral degree in ferrous metallurgical engineering from RWTH Aachen in Aachen, Germany. Dr. Cappel has more than 20 years of experience working in iron- and steel-making facilities. His responsibilities included management of the blast furnace process, the BOF and secondary treatment processes, raw material procurement, steelmaking research and development and overall steelmaking production. Throughout his career, he has been an active proponent for fundamental education of individuals in the steel industry. He has provided instruction to many of his employees while in steel production. Currently, as a consultant in the steel industry, one of the primary benefits to his customers is the education of their employees in producing steel efficiently in a safe, sustainable environment.



overview of the Indian steel industry to the academy delegates. In turn, dignitaries of SAIL and AIST expressed a few words of gratitude and encouragement for those in attendance to pursue knowledge for the future enhancement of themselves, their employer and for greater good of the global industry. Following the inaugural session, a high tea reception was held on the lawn of the Bhilai Niwas Center.

MSTS 201: Steelmaking was delivered by Dr.-Ing. Jürgen Cappel. While many courses focus on steel as a material, the MSTS 201 curriculum broadens the scope to include the ancillary, supporting technologies critical to steelmaking, such as environmental aspects, equipment technology, production scheduling and control systems. The course begins with the history of iron- and steelmaking from the earliest smelters of wrought iron to the modern, technological wonders in steelmaking. Today's steel technology has advanced due to a focus on sustainability and environmental awareness. Dr. Cappel described the acquisition and beneficiation of the necessary raw materials for iron- and steelmaking and gave detailed descriptions of iron production, with a focus on the utilization of lower-Fe-containing iron ore and steel production. He also described the latest technology used in continuous casting.



MSTS 202 Class



MSTS 202: Steel Shaping and Treating was delivered by Dr. Ir. Bruno De Cooman. This course, first and foremost, is an introduction to the processing of steel products for industry professionals. The course brings together decades of internationally recognized efforts acquired in the industry and at academic institutions and reflects the vitality and global nature of steel product and processing innovation. MSTS 202 merges advanced steel metallurgy concepts and principles of state-of-the-art steel processing technologies, focusing on topics that play an essential role in current steel processing and product

“I had a profound learning experience in the MSTS 202: Steel Shaping and Treating course, which is a valuable addition to the steel industry. The course module has been designed to cover nearly every possible fact and facet of steel shaping and treating in practically every kind of mill around the world. I sincerely appreciate AIST facilitating the ISA program and Prof. Dr. Ir. B.C. De Cooman for his inexorable lecture.”

Ms. Neeru Singh, manager, EA to director projects,
Essar Steel India Ltd.

Prof. Dr. Ir. B.C. De Cooman

Dr. De Cooman started his academic career in ferrous metallurgy research as director of the Laboratory for Iron and Steelmaking at Ghent University in Belgium. His research interests include the solid-state physics of ferrous alloys, materials microanalysis and ferrous products development. In the Graduate Institute of Ferrous Technology at the Pohang University of Technology and Science (POSTECH) in Korea, he leads the Materials Design Laboratory and is involved in the development of advanced automotive, electrical, engineering and constructional steels. The lab combines processing research expertise in the areas of casting, hot rolling, cold rolling, and continuous annealing and galvanizing with analysis of materials performance to develop new steel concepts for industrial applications. Dr. De Cooman earned his Ph.D. from Cornell University.



MSTS 201 Class: Group 2 of attendees

development. With the strong attendance and support from JSPL, Dr. De Cooman added extra emphasis on the production of quality long products, such as rail and structurals, and the different types of automation and statistical process control used in the industry.

Many opportunities were provided to delegates throughout the four days of classroom training to ask questions, network and meet new colleagues from India as well as Middle Eastern, Asian and European countries.

A valediction ceremony was held on 19 January 2015 to honor the attendees and conclude the course. Each delegate was presented with a certificate acknowledging his/her course completion, and various dignitaries expressed their gratitude to SAIL, AIST and the instructors for their execution of the event. The valediction concluded with a number of attendees representing various regions of the world expressing their gratitude for the experience of attending the ISA and

the opportunity to meet and network with many like-minded individuals in the steel industry. The event concluded with a dinner and entertainment on the back lawn of the Bhilai Niwas Center.

AIST extends its sincere gratitude to the many sponsors of the event, including Harsco, Jindal Steel and Power Ltd., and Tata Steel, and wishes to recognize the overall event sponsor, Steel Authority of India Ltd., for its significant contribution to the success of AIST's program in India. This event would not have been possible without their generous support and tireless efforts to ensure each and every attendee had a pleasant experience. ◆

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“ISA 2015 is one of the best workshops that I have ever participated in. At the beginning, we were a little bit confused, because we did not have any idea about AIST or Bhilai. There is no doubt that during the time we stayed there, besides meeting the most hospitable people, we received better training than during our university classes. Dr. Cappel is one of the most experienced metallurgists I have ever met; he can answer your questions before you finish asking them. It was a pleasure to meet all of our colleagues and the AIST crew. Our warmest thanks and appreciation to ERDEMİR for giving this opportunity to us, and to AIST and BSP for their great hospitality. Hope to see you all again!”

Isa Keskin, project manager/researcher, steelmaking and casting technologies, Ereğli Iron and Steel Works Co. (ERDEMİR)