

6th Postgraduate Research Symposium on Ferrous Metallurgy

Presentation of IOM3 Iron & Steel Awards

Sumitesh Das, R&D Director, Tata Steel UK

Dr Laura Baker, Head, Product Management & Development, Tata Steel UK

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Institute of Materials,
Minerals & Mining

#Metallurgy6

The logo consists of the letters 'I', 'M', and '3' in a bold, sans-serif font. A solid black dot is positioned between the 'I' and the 'M'. The background features a grey field with a red triangle on the left, an orange semi-circle on the right, and a yellow vertical bar on the far right.

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**Institute of Materials,
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Iron & Steel Awards 2023

Dr Laura Baker

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Dowding Medal and Prize

In recognition of professional contribution to the invention, development, design or technical operation of metallurgical plant, particularly rolling and finishing, leading to improved economy, yield or quality in metal production

Dowding Medal and Prize

Stuart Leflay

Primetals Technologies

- Technician apprentice at Fine Tubes in Plymouth in 1977, studying for an ONC and HNC in Engineering by day release.
- BSc degree in mechanical Engineering at Brunel University.
- Davy International initially as a graduate engineer before progressing to other roles.
- Principal Engineer position at Kvaerner Metals for three years.
- Product and Process Manager at VAI.
- Continued career at Siemens VAI and then to Primetals
- Key Expert for Aluminium Hot Mills at Primetals Technologies based in Sheffield.
- Responsibility for preparation of technical specifications, bid estimates and concept designs to clients worldwide
- Design and commissioning of a range of aluminium hot, cold and foil mills across globe



Stokowiec Medal and Prize

In recognition of distinguished work related to the technical, manufacturing, processing or engineering application of alloy steels, including stainless steels

Stokowiec Medal and Prize

Cathryn Bell

Project Manager (i-SPACE), Swansea University

- 30 years' experience in the steel industry predominantly as a Product Development Metallurgist in Engineering and Special Steels.
- Technician at Corus Swinden Technology Centre after completing her A-levels and gained a Materials degree at Sheffield Hallam University.
- Roles in Tata Steel/ Liberty Steel Engineering business working on application of low and high alloy steels, including stainless, for extremely demanding markets such as aerospace and power generation.
- Liberty Steel dealing with customer issues, process development and R&D and University links.
- Project Manager for i-SPACE (Innovative Steel Processing Accelerating the Circular Economy) at Swansea University developing the business case for a Pilot Plant designed to process end-of-life components and maximise the use of steel scrap.
- Outstanding example of development from a technician role via R&D to a senior management position within the steel industry
- Strong personal interest in coaching and development of young managers and aspiring metallurgists.



Tom Colclough Medal and Prize

In recognition of a learned contribution to the understanding of microstructure, mechanical properties, fabricability or in-service performance, production or engineering connected with the iron and steel industry

Tom Colclough Medal and Prize

Dr Philip Kirkwood

Micro-Met International

- Career dedicated to understanding the microalloying and subsequent weldability of high strength low alloy steels in linepipe for the oil and gas industry
- Joined Colvilles in Scotland working on large-scale Wide Plate Tests and the adoption of the COD (crack opening displacement) fracture mechanics test in conjunction with BISRA (British Iron and Steel Research Association).
- British Steel Teesside Labs involved in development of microalloying steels for linepipe applications and offshore structures, including their weldability, publishing in excess of 50 papers.
- Developed and patented, a range of new submerged arc welding wires based which are still in regular use today
- Technical management role at the British Gas Engineering Research Station at Killingworth, before becoming Director
- Consultant, notably with CBMM, and continues to publish papers and contribute to international conferences



Hadfield Medal and Prize

In recognition of distinguished work in relation to metallurgical practice, process development, product development, metallurgical understanding or design engineering application of all types of steel. This medal can also be awarded in recognition of an exceptional contribution to operational or business management within the steel industry and its value chain

Hadfield Medal and Prize

Dr Sara Hornby

Global Strategic Solutions

- Honours degree and PhD in Industrial Metallurgy from Sheffield Polytechnic (now Sheffield Hallam University)
- Development metallurgist at British Steel Corporation working on strip development
- Emigrated to Canada to become Business Development Manager for Air Liquide. Developed and patented the SPAL technology which utilises inert gas technology in steelmaking operations.
- Director of Operations and Steelmaking Technologies at Goodfellow.
- Midrex Direct Reduction Company, Linde Gas, Process Technology International and TMS International.
- Runs own consultancy advising clients worldwide. Focussed on supporting the decarbonisation of the global steel industry which has been recognised by 2020 Benjamin F Fairless Award from AIST for distinguished achievement in Iron and Steel Production and Ferrous Metallurgy.
- 5 worldwide process and equipment patents. Has authored, published/presented more than 120 technical papers.
- “A rarity in today’s steel industry, Sara is a person who any Director, Technical leader or steel shop manager can mail or phone with a problem and receive a discussion, exchange of views or direct help and support with honesty”



Bessemer Gold Medal

For outstanding services to the Steel Industry

Bessemer Gold Medal

Prof Rob Boom

Delft University of Technology

- Doctorate in physics from the University of Amsterdam
- Hoogovens Research in the Steelmaking, Metallurgy and Refractories department.
- Appointed director responsible for the total R&D program that included processes, products, and product applications of steel, aluminium, and new materials.
- After the Hoogovens-British Steel merger into Corus Group he became director R&D Strategy and Competence Development.
- Established multiple international collaborations among steelmaking companies in Europe and worldwide.
- Became professor Metals Production, Refining and Recycling at the department Materials Science & Engineering of Delft University of Technology
- Senior Scientific Advisor of the Dutch Materials innovation institute M2i, chairing the Programme Committee and the annual conference.
- Participated in many international committees and boards of institutes bridging the gap between industry and academia.
- Published close to 300 scientific papers and co-authored three text books.
- As professor emeritus is still active in process metallurgy



Sir Henry Bessemer Lecture 2023

Collaboration to boost evolution and revolution in ironmaking and steelmaking

Collaboration accelerates evolution as well as revolution in steel production technology, however it does not always deliver. Examples are replacement of coke by pulverized coal in blast furnace ironmaking (successful) and the world-wide attempts to direct steelmaking (failed). How to initiate, continue and finish collaboration is demonstrated by the development of sub-lance sensor technology for oxygen steelmaking control. The ultimate collaborative project to reach ultra-low CO₂ steelmaking (ULCOS) as organized by the EU research fund for coal and steel generated four feasible solutions. Two of them were further developed using CO₂ capture-and-storage (CCS). Change in public acceptance of CCS made these solutions obsolete. Hydrogen metallurgy is now considered the environmental solution, asking for strong collaboration again. Steelmakers should cherish their collaborative nature which is unique as compared to producers of other metals such as aluminium.



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+44(0)20 7451 7300
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