

## IRON AND STEEL SOCIETY (ISS) ANNUAL REPORT FOR 2017

### 1. Board membership

At the end of 2017, the membership of the ISS Board comprised 22 persons:

Name	Organisation
Prof. Martin Brunnock (Chairman)	Tata Steel Strip UK
Dr. David Price (Board Secretary)	Independent
Dr. Laura Baker	Tata Steel Strip UK
John Beeley	Outokumpu Stainless
Prof. Dr. Rob Boom (Journal editor)	Delft University of Technology, NL
Dr Dean Cartwright	Tata Steel Strip UK
John Dale	British Steel
Prof. Claire Davis	Warwick Manufacturing Group
Andy Dunsmore	Swansea University
Brian Edy	Swansea University
Dr. Geoff Hale	Independent Materials Consultant (IOM <sup>3</sup> )
Joe Lee	Primetals Technologies
Chris McDonald	Materials Processing Institute
Dr. Norrie McPherson (Journal editor)	Independent
Dr. Chris Melvin	Tata Steel Strip UK
Dr. Peter Morris	Beta Technology
Dr. Cameron Pleydell-Pearce	Swansea University
Dr. Ken Ridal	Consultant
Bob Ruddlestone	Materials Processing Institute
James Taylor	Younger member rep (nominated by CIE)
Dr. Richard Thackray	University of Sheffield
Ian Warrington	IOM <sup>3</sup> Society Coordinator
<b>Occasional attendance as required</b>	
Melanie Boyce	IOM <sup>3</sup>
Dr. Emma Leighton	Taylor and Francis

#### **Changes to Board membership:**

Regrettably, in December 2017, Mick Steeper resigned as Chair for personal reasons. Martin Brunnock was unanimously elected as his replacement and a Vice-chair will be nominated in 2018.

Ian Warrington has taken over many of Geoff Hale`s duties at IOM<sup>3</sup> and has joined the Board. Geoff continues to be a Board member. David Price replaced Geoff as Board Secretary at the beginning of 2017. Andy Dunsmore, John Beeley, Laura Baker, Cameron Pleydell-Pearce and Dean Cartwright joined the Board.

Andrew Kirton-Vaughan, Andy Backhouse and Martin Smith resigned.

All ISS Board members are members of IOM<sup>3</sup>.

## 2. Board meetings

Five board meetings were held in 2017:

- 8 February at 297 Euston Road – 9 attended plus 3 via telecon
- 26 April at Warwick University – 12 attended
- 29 June at 297 Euston Road, London – 13 attended plus 3 by telecon
- 13 September at Swansea University – 8 attended plus 4 by telecon
- 9 November at Sheffield University – 17 attended

## 3. Activities during 2017

### 3.1. Technical programme (see also Appendix)

- **Steel Strategy Seminars:** No seminars were held in 2017, however, following Andy Dunsmore's appointment as organising committee chair, these will recommence in 2018 starting with two on 'Industry 4.0', followed by the 'Circular Economy'.
- **PhD/Eng Doc:** Work by members and others in various UK universities identified that there were 176 PhD/Eng Doc post graduate students working on steel and steel-related subjects – a tremendous number, illustrating that steel-related research is still going strong despite the travails of the UK steel industry in recent years. Approximately 50% are Tata Steel-sponsored. The Board agreed that there needed to be an event whereby students could interact and outline their work to industrialists and academia. The event will take place in London on 27 February 2018, with support from MPI and the Armourers and Brasiers.
- **Residuals in steel conferences:** Significant progress was made in scoping these conferences. The topic is considered particularly apt at this time of significant change in the structure of the UK steel industry. The first is scheduled for November 2018.
- **Bessemer Day:** Incorporating the Bessemer Master Class and awards ceremony Bessemer Day was successfully held at the Cutlers' Hall in Sheffield on November 10th. The event was strongly supported with over 250 attendees. Professor John Speer, Colorado School of Mines, USA was the recipient of the Bessemer Gold Medal, giving a fantastic lecture of the progression of steel metallurgy and previous noble winners of the award. IOM<sup>3</sup> president Martin Cox attended to present the ISS awards to all recipients. The event was kindly sponsored by British Steel, Liberty Speciality Steels, Tata Steel and Primetals Technologies.
- **International conferences:** The ISSI granted IOM<sup>3</sup> a European conference for 2020 (Electric Steelmaking). This is a highly prized event, in view of the increasing importance of recycling for a sustainable global industry. At longer range, IOM<sup>3</sup> is also offered the SteelsIM (on simulation and modelling of steel processing and applications) conference for 2024, European Coke and Iron conference in 2023 and a possibility in 2024 of the Thermomechanical Processing conference.

### 3.2. Web-site developments

Chris Melvin volunteered to be the Webmaster for the ISS Board and we have been able to develop our on-line presence to a greater extent during 2017. David Price now produces a newsletter after each Board meeting with a summary of key topics.

### **3.3. Engagement with technical community and/or local societies**

Liaison with VDEh has continued, with Mick Steeper attending a meeting via telecom (as did all ISSI members) in November 2017. The main topic was conferences and their allocation. The Board also contributed to the discussions on the proposal by AIST in the USA to open a European Chapter.

Local societies (notably the SMEA, CIE, SWMA, LISI and NDMS) remain active in steel and all continue to deliver well-supported lecture programmes.

### **3.3 IOM<sup>3</sup> house journals**

Three active members of the ISS Board have direct roles in the delivery of the Ironmaking and Steelmaking journal. Norrie McPherson and Rob Boom are joint editors, with Norrie also looking after the two Steel World issues per year. Emma Leighton Publisher of the Materials Science list at Taylor and Francis is responsible for publication.

### **3.4. Iron and Steel Society Medals**

Significant effort by the Board went into reviewing, clarifying and streamlining the awards selection criteria, nomination system, review and decision-making system. A set of guidelines was produced, ratified by IOM<sup>3</sup> and instigated for the 2018 awards process. Specifically the Stokoweic medal will now be solely under the purview of ISS and the Grunfeld medal has reverted to the IOM<sup>3</sup> awards committee.

### **3.5 EPSRC**

Laura Baker was nominated by Tata Steel and joined the EPSRC Research Council's strategic advisory team. Mick Steeper attended an EPSRC meeting relating to business representation for Doctoral research. A Tata Steel proposal was quite well received but an insistence on broader UK steel industry support is likely if any full application is invited.

## **4. Strategy and Objectives for 2018**

### **4.1. Opportunities and constraints**

The new Divisional strategy addresses a number of opportunities and constraints facing steel. Particularly important among these is the issue of an aging profession. The ISS will continue to focus on attracting young members, and on refreshing the image of industrial metallurgy as a career. Some specific examples are the Board appointment of two `young members`, the appointment of a number of Board members employed in the steel and related activities, the PhD/Eng Doc seminar and the emphasis on education and a steel legacy as key themes of the 2019 anniversary year.

### **4.2. Specific targets for 2018**

During 2018, the ISS will continue the Steel Strategy Seminars series and will also identify new conference themes, canvass our peer community to prioritise them and initiate the delivery of the sought-after ones. Planning activities for the 2019 anniversary will intensify- see below.

### **4.3. Specific targets for the 3 years beyond 2018**

**Iron and Steel Institute** 2019 marks the 150<sup>th</sup> anniversary of the Iron and Steel Institute, the founding Institute of IOM<sup>3</sup>. Scoping and planning of a series of events to

celebrate this significant milestone (led by Mick Steeper) has taken place. The key events/activities have been identified and agreed with B. Rickinson:

- **Alloy Development Conference** the key technical event over two days which will stress benefits to society, industry and consumers of steel, and compare steel development sector by sector.
- **Characterisation Conference** which will identify how steel development has been affected by characterisation techniques used and how the techniques have been affected by steel developments
- **Photo Competition** – to reconnect the public with steel. This will commence in 2018 so that winning entries can be used to help publicize the 150<sup>th</sup> anniversary in 2019
- **Exhibition** – This will start at IOM<sup>3</sup> London and travel subsequently around the country. The emphasis will be on electronic links to steel-related physical exhibits. To ensure an ongoing legacy periodic updates, such as from local societies is planned.
- **Education Program** Based on the theme of `A world without steel` this will comprise two `Materials Matter` events aimed at students in year 12 to take place in March and November 2019, a one day conference for 20+ teachers and a poster competition for pupils aged 11 to 16.
- **Journals/Publications** Work is progressing well for a special journal issue based on invited papers dealing with process, product and applications. A review of selected `industry-changing` papers will be included and reference details of selected papers from the last 50 years will be provided.
- **Bessemer Day** A special 2019 event is being worked on, but no specific details available at present.

### Appendix: Planned Technical Programme as of January 2018

Date	Title	Location	Organiser	Financial Underwriter	Target No's
27 Feb 2018	Symposium for post graduate research in ferrous metallurgy	Armourers' Hall London	Materials Processing Institute	Materials Processing Institute	50
Autumn 2018	Steel Strategy Seminar Series 4, Seminar #1 Industry 4.0 -strategic	London	ISS	IOM3	80
Nov 2018	Residuals in Steel #1	Warwick Uni	ISS	IOM3	100
Spring 2019	Steel Strategy Seminar Series 4, Seminar #2 Industry 4.0 - specific	S. Wales or Scunthorpe	ISS	IOM3	80
Autumn 2018	Bessemer Day, including Masterclass and Lecture	S. Wales	ISS/ Tata	IOM3	M/class 24, Lecture 200
2018	SSTT (Steel Testing)	Swansea Uni	ISSI	IOM3/ Tata Steel/ Swansea Uni	?
Autumn 2019	Steel Strategy Seminar Series 4, Seminar #3 Circular Economy	TBC	ISS	?	80
2020	European Electric Steelmaking Conference	UK, possibly Sheffield	ISS	IOM3	400 (series norm)
2023	SteelSIM Simulation techniques in steel industry	TBC	ISSI	?	?
2024	European Coke+Iron conference		ECIC	?	?
2024	Thermomechanical Processing	UK <u>or</u> Austria	ISSI	?	?