

# Annual Postgraduate Research Symposium on Ferrous Metallurgy

Tuesday 27<sup>th</sup> February 2018

## PROGRAMME

10:00 - 10:20	Registration, Coffee and Networking	15:20 - 15:40	Tea, Networking and Poster Display
10:20 - 10:30	<b>Welcome and Introduction</b> <i>Chris McDonald (CEO, Materials Processing Institute)</i>	15:40 - 16:00	Awarding of Prizes for Best Paper and Best Exposition - Armourers and Brasiers' Materials Science Committee
10:30 - 11:50	<b>Session 1: New Materials Design</b> <i>Chair – Dr Richard Thackray (University of Sheffield)</i> 1. <i>Correlative study of static recrystallization, precipitation and recrystallized texture in cold rolled microalloyed steel. Ishwar Kapoor (University of Warwick)</i> 2. <i>Recrystallisation kinetics of plain carbon steels containing dilute niobium additions. Bhushan Rakshe (University of Sheffield)</i> 3. <i>In-situ time-lapse microscopy to elucidate the corrosion mechanism of Zn-4.8wt.%Al galvanising metallic coating; surface and cut-edge. Callum Gallagher (Swansea University)</i> 4. <i>Damage evolution during the plastic deformation of nanostructured steel. Gebriel EL Fallah (University of Cambridge)</i>	16:00 - 16:40	<b>Keynote Speaker</b> <b>Bimlendra Jha</b> (CEO, Tata Steel UK)
11:50 - 12:10	Coffee, Networking and Poster Display	16:40 - 16:50	Vote of Thanks Martin Brunnock (Technical Director, Tata Steel UK)
12:10 - 13:10	<b>Session 2: Materials Processing</b> <i>Chair – Prof Hongbiao Dong (University of Leicester)</i> 1. <i>Simulation of hydrogen removal in the vacuum arc degasser. Faris Karouni (University of Sheffield)</i> 2. <i>Novel techniques for controlling heat transfer in a continuous casting mould. Adam Hunt (Materials Processing Institute)</i> 3. <i>Simulating physical vapour deposition on steel substrate using the Direct Simulation Monte Carlo (DSMC) method. Samuel Minshell (Swansea University)</i>	16:50 - 18:30	Drinks Reception
13:10 - 14:00	Lunch, Networking and Poster Display		
14:00 - 15:20	<b>Session 3: Materials Performance</b> <i>Chair – Dr Steve Ooi (University of Cambridge)</i> 1. <i>Modelling microstructural alterations under rolling contact fatigue and design of fatigue resistant bearing steels. Hanwei Fu (Lancaster University)</i> 2. <i>SVET-TLI: a novel combination of scanning vibrating electrode technique and time-lapse imaging for studying the localised corrosion of sacrificial zinc coatings. Rebecca Bolton (Swansea University)</i> 3. <i>Non-destructive prediction of tensile strength by using an EM sensor. Mohsen Aghadavoudi Jolfaei (University of Warwick)</i> 4. <i>Effect of hydrogen charging on dislocation multiplication in super duplex stainless steel. Xingzhong Liang (University of Leicester)</i>		



### VENUE:

Armourers' Hall,  
Armourers & Brasiers' Company,  
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London EC2R 5BJ

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Organised by:

Armourers and Brasiers' Company, the Iron and Steel Society of IOM3,  
and the Materials Processing Institute.



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## DISPLAY EXPOSITION

### Students:

**Functionally graded components for nuclear applications.**  
*Emmanouil Stavroulakis (University of Manchester)*

**Inspection of As Cast Steel Slabs Using EMAT Arrays.**  
*Jozef Tkocz (University of Warwick)*

**Mitigation of High Temperature Hydrogen Attack.**  
*Mohammed Alshahrani (University of Cambridge)*

**The effects of coal particle swelling during blast furnace coal injection.** *Ian Moore, Materials Processing Institute*

**Welding of carbide free bainitic steels for the railway industry.**  
*Marta Muniz-Mangas (University of Sheffield)*

**Influence of Composition and Processing on Strain Ageing in High Strength Pearlitic Wires.**  
*Benjamin Jones (University of Sheffield)*



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