

VIRTUAL EVENT 4th Postgraduate Research Symposium on Ferrous Metallurgy

VIRTUAL PROGRAMME

Tuesday 23rd February 2021

09:45 - 10:00	Registration, Poster Exposition, Exhibition and Virtual Networking	15:35 - 16:00	Second Perambulation
10:00 - 10:10	Welcome and Introduction Chris McDonald, Chief Executive Officer, Materials Processing Institute		and Virtual Networking
10:10 - 11:30	Session 1: Process Optimisation Chaired by Dr Richard Thackray (University of Sheffield)	15:40 - 15:55	Virtual Tour of Armourers and Brasiers' Company
	10:10 - 10:15 Introduction by Session Chair		
	10:15 - 10:40 1. Improving cold spray additive manufacturing with a nozzle designed by the method of characteristics. Presenter: Florentina-Luiza Zavalan (University of Leicester)	16:00 - 16:40	Keynote Speaker Dr Alexander Fleischanderl,
	10:40 - 11:05 2. Advanced analytics of sinter plant operations to minimise particulate emissions. Presenter: Matthew Thomas (Swansea University)		Primetals Technologies Austria GmbH Technology Officer Upstream, Head of ECO Solutions
	11:05 - 11:30 3. Automated ladle pouring in the steel industry. Presenter: Ivan Popov (Swansea University)	C	PRIMETALS
11:30 - 11:50	First Perambulation Poster Exposition, Exhibition and Virtual Networking		TECHNOLOGIES
11:50 - 13:10	Session 2: Development of Product and Properties Chaired by Gill Thornton (Liberty Powder Metals Ltd)	16:40 - 16:50	Awarding of Prizes by the Armourers and Brasiers' Materials Science Committee
	11:50 - 11:55 Introduction by Session Chair		1. Millman Scholarship
	11:55 - 12:20 4. How low can you go? The medium manganese limbo. Presenter: Thomas Kwok (Imperial College London)		2. Best Poster Winner 3. Best Presentation Runner-up 4. Best Presentation Winner
	12:20 - 12:45 5. Investigating different rapid alloy prototyping approaches to develop alloys to allow for higher scrap steel content. Presenter: Caroline Norrish (Swansea University)	16:50 - 17:00	Closing remarks and thanks by Chris McDonald, Chair of the Symposium
	12:45 - 13:10 6. Understanding the effects of deep cryogenic treatment on precipitation behaviour in En31 bearing steel. Presenter: Kyle Nicholls (University of Leicester)		
13:10 - 13:50	Lunch Break Poster Exposition, Exhibition and Virtual Networking		
	13:15 - 13:35 Chris McDonald in conversation with Dr Alexander Fleischanderl, Primetals Technologies Austria GmbH.		
13:50 - 15:35	Session 3: Understanding Material Performance Chaired by Professor Cameron Pleydell-Pearce (Swansea University)		
	13:50 - 13:55 Introduction by Session Chair		
	13:55 - 14:20 7. Role of toughness in abrasion, and impact-abrasion wear. Presenter: Appa Rao Chintha (University of Cambridge)	The late	est academic thinking errous Metallurgy
	14:20 - 14:45 8. Effect of Ti microalloying and residual S content on the hot ductility of a boron steel. Presenter: Yaiza Montaña González (CEIT-Basque Research and Technology Alliance, Universidad de Navarra, Tecnun)	Tuesday 23 February 2021 #Metallurgy4	
	14:45 - 15:10 <i>9.</i> Multi-scale investigation of dislocation-assisted carbon migration in ferrite. <i>Presenter:</i> Tigany Zarrouk (King's College London)	Cont	act the organisers:
	15:10 - 15:35 10. Blistering formation in high strength steels (HSS) during hot rolling. Presenter: Rebecca Dewfall (University of Swansea)	Tel: email: ac	01642 382000 cademy@mpiuk.com

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POSTER EXPOSITION

1. Initial microstructure characterisation of some castable nanostructured alloys for fission and fusion applications.

James Lennard (University of Manchester)

2. Effect of environmentally friendly additives on Zn-Mn alloys morphology and structure. Dr Nouha Loukil (National School of Engineering of Sfax ENIS-Tunisia)

3. Steel susceptibility to hydrogen induced failure. *Helena Ferreira (Swansea University)*

4. Novel Coating solutions for the improvement of scale surface condition. James Grant (Swansea University)

5. The effect of coal volatile on top gas carbon. *John Lewis (Swansea University)*

6. The effect of steel microstructure on damage mechanisms at the wheel-rail interface. James Ayabina (The University of Sheffield)

7. A review of published models to predict the extent of surface oxidation. Nicola Beech (University of Warwick)

8. Numerical modelling of thermal-mechanical evolution during high heat input welding of marine steel. Jun Fu (University of Leicester)

9. Prediction of the mechanical properties of hot rolled steel plates using artificial neural network and statistical method. *Xiaoan Yang (University of Leicester)*

10. Exploring the effects of cryogenic treatment on coating-substrate systems. *Christian Chiadikobi (University of Leicester)* 11. Understanding of ductile fracture mechanisms in nuclear pressure vessel steels under different constraints. *Suleyman Karabal (The University of Manchester)*

12. The effect of processing variables on ZnMgAl alloy coating characteristics. *Daniel Britton (Swansea University)*

13. Development of improved formability advanced high strength steels. *Talal Said Abdullah (Swansea University)*

14. Development of new surface treatments for automotive utilising chemcoater. Jamie Williams (Swansea University)

15. The role of Chromium Oxide in suppressing filiform corrosion on Cr metal / Cr Oxide coatings for steel used in packaging applications. Ellen Bluett (Swansea University)

16. The adhesion of protective coatings to novel REACH compliant packaging steel substrates. Matthew Dodd (Swansea University)

17. Novel maraging steel damage tolerance study. *Antony Robinson (Swansea University)*



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