

Monday 11th July

9:00 Registration & Refreshments

9:30 Welcome – Gallery Room

Professor Dermot Brabazon, AMS CDT ROI Director, Dublin City University

Keynote

Professor Andrew Parnell, Maynooth University

‘Anomaly Detection and Other Machine Learning Tools in Industry 4.0’

10.20 Parallel Session 1

1A – Gallery Room

Advanced Processing and Characterisation

Chairs: Lucy Farquhar & Sam Lister

10:25 Development of Advanced High Modulus Steels for Automotive Applications

Sully Khan, The University of Sheffield

10:40 Additive Manufacturing for the Development of Microneedle Arrays as Minimally Invasive Drug Delivery Systems

Nikoletta Sargioti, Dublin City University

10:55 Order-Disorder Transformation Control in AlTiVCr-Based High Entropy Alloys

Panagiotis Stravroulakis, The University of Sheffield

11:20 Refreshment Break - Atrium

12.00 Parallel Session 2

2A - Gallery Room

Microstructural Design

Chairs: Joshua Collins & Ashley Scarlett

12:00 Spreading Area Measurements of Sn-Ag-Cu Lead Free Solder on Silver and Copper Substrates

Wunmi Olukoya, The University of Sheffield

12:20 The Evolution of Microstructure and Toughness in Multipass Welds that Contain Acicular Ferrite

Enn Veikesaar, The University of Manchester

12:40 Modelling the Microstructure Evolution of Titanium Alloys

Guy Bowker, The University of Manchester

1B - Blue Room

Corrosion and Surface Engineering

Chairs: Sakina Zaman & Huda Al-Jurani

Producing Precious Metal Doped Stainless Steels by Spark Plasma Sintering

Natasha Sweeney Fort, The University of Sheffield

Understanding the Effect of Strain on Microstructure Properties and Environmental Degradation of AGR Fuel Cladding

Alexander Hanson, The University of Manchester

The Use of Nanosecond Pulsed Laser Modification for the Increased Lifetime of a Commercially Used Pulsed Electric Field (PEF) System

Mark Swayne, Dublin City University

2B - Blue Room

Alloys & Brazing

Chairs: Sam Lister & Frances Livera

Tool Wear in CVD Coated Carbides when Machining Ni-based Superalloys

Henry Boyle, The University of Sheffield

In Situ Characterisation of the Thermomechanical Deformation Behaviour of Powder Processed Ni-based Superalloys

Frances Synnott, The University of Sheffield

Characterisation of Zirconium Alloys with Copper and Vanadium Additions for Nuclear Fuel Assembly Materials

Callum Andrew, The University of Manchester

13:00 Lunch and Poster Presentations - Atrium

14:30 Keynote – Gallery Room

Dr Nesma T. Aboulkhair, The University of Nottingham

‘Metal Additive Manufacturing: From Loose Powder to Complex 3D Structural and Functional’

12:00 Parallel Session 3

3A - Gallery Room

Demanding Environments & Energy

Chaired by Sakina Zaman & Kavi Sharma

3B - Blue Room

Machine Learning & Data Analysis

Chaired by Anesu Nyabdaza & Bryan Naab

15:25 Development of an Optical Fibre Mid-Wave Infrared Thermometer for Metal Machining Operations

Emilios Leonidas, The University of Sheffield

Measuring Image Quality of 3D X-Ray Computed Tomography

Jamie McGregor, The University of Manchester

15:40 Computational Study of Microstructurally Short Crack Propagation in AA7XXX Alloys

Cameron Grant, The University of Manchester

Design of HEA Hardmetals for Tooling Applications

Joshua Berry, The University of Sheffield

15:55 Modelling the Behaviour of Irradiation-Induced Defects in Nuclear Zirconium

Jake Larkin, The University of Manchester

Anti-Ice Fouling Surfaces by Fabrication Superficial Structures on Aluminium Alloys by Laser Machining

Abhijit Suhas Cholkar, Dublin City University

16:10 Refreshment Break - Atrium

16:40 Ultrashort Laser Sintering of Metallic Nanoparticle Inks on Heat Sensitive Substrates

Ayesha Sharif, National University of Ireland Galway

Molecular Dynamics (MD) Simulation of TWIP/TRIP Metals and Alloys

Mehran Bahramyan, Dublin City University

16:55 Effect of Microstructure on the Localised Corrosion of 15-5PH Stainless Steel

Alyshia Keogh, The University of Manchester

Microstructural Fingerprinting via Variational Autoencoders

Mike White, The University of Sheffield

17:15 Drinks Reception – Atrium

6pm Coach departs for transfer to Conference Dinner

Arlington Hotel, 23-25 Bachelors Walk, O'Connell Bridge, Dublin 1

7pm - 10.30pm Bus departs 10.30pm to Hotels and DCU



Tuesday 12th July

9.00 Refreshments & Posters - Atrium

9:30 Welcome – Gallery Room

Professor Russell Goodall, The University of Sheffield

Keynote

Professor Claire Davis, Warwick Manufacturing GP at The University of Warwick
'Rapid Alloy Development for Sustainable Steels'

Announcement Dr Richard Dawidek, Royce, University of Sheffield, 'Royce Equipment Access Scheme'

10.20 Parallel Session 4

4A - Gallery Room

Modelling and Simulation

Chairs: Guy Bowker & Mike White

10:25 An Investigation into the Effect of Microtextured Regions on the Fatigue Properties on Forged Titanium

Patrick Curran, The University of Manchester

10:50 The Development of a Rapid CCT Predictor for Low Alloy Steels

Joshua Collins, The University of Manchester

11:10 The Influence of Prior Deformation and Creep Asymmetry on Stress Relaxation and FE Modelling of Creep Age Forming AA2139 Plate
Kevin Tanswell, The University of Manchester

11:20 Refreshment Break - Atrium

12:00 Parallel Session 5

5A - Gallery Room

Modelling and Simulation

Chaired by Joshua Collins & Frances Livera

12:00 Coupling Component Diffusion with the Precipitation Kinetics of Ni-Based Superalloys
Sakina Rehman, The University of Manchester

12:15 Modelling the Effects of Texture on the Stress and Strain Localisation During Bending of Aluminium Alloy Sheet
Laura Gonzalez Duque, The University of Manchester

12:40 Closing Session with Keynote - Gallery

Declan Bourke, Product Development Manager, Fort Wayne Metals

'Nitinol Processing and Applications - Current State of Arts, Trends, and Challenges

Poster & Oral Presentation Prize Awards – Professor Russell Goodall

13:30 Lunch - Atrium (Conference closes at 3pm)

Session 4B - Blue Room

Additive Manufacturing & Sustainability

Chairs: Lucy Farquhar & Nikoletta Sargioti

3D Printing of Continuous Stainless Steel Fibre/Polymer Composites

Alison Clarke, University College Dublin

Methodologies Used in the European Countries for Critical Raw Material Assessment

Ahmar Murtaza, Dublin City University

Pulsed Laser Ablation in Liquid for the Fabrication of Magnesium and Carbon Nanoparticle Inks

Anesu Nyabdaza, Dublin City University

5B - Blue Room

Additive Manufacturing & Sustainability

Chaired by Vincent Kan & Josiah Chekotu

Influence of Solution Heat Treatment Temperature and Holding Time on the Microstructure, Texture, and Hardness of IN718 Produced by the L-PBF

Merve Nur Dogu, Dublin City University

Microstructural Influence on the Fatigue Behaviour of Additively Manufactured Ti64 Alloy

Bryan Naab, University College Dublin