DARE
DESIGNING ALLOYS for RESOURCE EFFICIENCY

"Alloy Design—A Resource Efficient Approach 3"

7&8 September 2017

Rolls-Royce Learning & Development Centre, Derby

Programme

Thursday 7th September

10.00 - 10.30 **Registration and coffee**

10.30 – 11.00 **Welcome & overview**

Professor Mark Rainforth

Professor of Materials Engineering, Department of Materials Science and Engineering, The University of Sheffield.

11.00 – 12.30 **Presentations**

"Designing magnesium alloys"
Dr Mark Turski,
Magnesium Elektron, UK

"On the role of twinning in determining crystallographic texture in magnesium alloys"
Dr Dikai Guan,
Department of Materials Science and Engineering, University of Sheffield

"Investigation of the mechanisms of twinning nucleation in magnesium alloys using crystal plasticity modelling"
Dr Zebang Zheng,
Department of Materials, Imperial College, London

12.30– 14.00 **Lunch and Posters**

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14.00 – 15.00 Presentations

"The challenges of materials selection and manufacturing for fusion"
Prof Brad Wynne,
Department of Materials Science, University of Sheffield

"Linear friction welding- an alternative route for titanium aerospace components"
Dr Steve Dodds
TWI Ltd

15.00 – 15.30 Tea and coffee

15.30 – 17.00 Presentations

"Modelling approaches in designing alloys for resource efficiency"
Prof Pedro Rivera
University of Lancaster

"Understanding carbon competing reactions in the design of AHSS"
Dr Bij-Na Kim Lee
TU Delft

"Design of RE-free Mg alloys: an atomistic approach"
Dr Lefteri Andritsos
Department of Physics, King's College, London

18.00 – 19:00 Poster session and drinks reception

Rolls-Royce Heritage Centre

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Friday 8th September

9.00 – 10.30 Presentations

"Correlating process parameters to material properties in additive manufacture"
Dr Sam Tammas-Williams
Department of Materials Science and Engineering, Sheffield University, UK

"Additive repair for aerospace applications"
Martyn Jones
Rolls-Royce PLC, Derby

"Industrial scale Titanium Alloy Research and Development."
Dr Matt Thomas
Timet, UK

10.30 – 11.00 Tea and coffee

"Designing new beta titanium alloys reinforced with superlattice intermetallic precipitates"
Dr Sandy Knowles
Department of Materials, Imperial College, UK

"FAST-forge of titanium alloys powders"
Emma Calvert
Department of Materials Science and Engineering, University of Sheffield, UK

"Low cost, small-scale testing to determine the machinability of titanium alloys"
Dr Oliver Hatt
Department of Materials Science and Engineering, University of Sheffield, UK

12.45– 13.45 LUNCH and close