

DISTINCTIVE – 2nd Annual Meeting

**Decommissioning, Immobilisation and Storage Solutions for
Nuclear Waste Inventories**

**At-Bristol, Bristol
19th-20th April 2016**

**Introduction and
Housekeeping**

Michael Fairweather
University of Leeds



House-Keeping

- No scheduled fire alarms
- WiFi is open access and free to use
(At-Bristol-Events / Password Max-hertZ!WE11)
- All speakers please upload presentations prior to session
- All presentations will be uploaded to our website:
www.distinctiveconsortium.org
 - Please inform Abby Ward if you do not want your presentation to appear online
- Industry-members to vote for PhD prizes (see delegate pack)

Acknowledgements

The DISTINCTIVE University Consortium gratefully acknowledges funding from the EPSRC as part of the Research Councils UK Energy programme

The Energy Programme is a Research Councils UK cross council initiative led by EPSRC and contributed to by ESRC, NERC, BBSRC and STFC

Code: EP/L014041/1



We also gratefully acknowledge funding from our key project partners



Sponsorship

The DISTINCTIVE University Consortium would like to say a special thank you to our event sponsors:

- NNL – Evening drinks reception and dinner
- NDA – PhD Student Awards



Drinks Reception and Evening Dinner

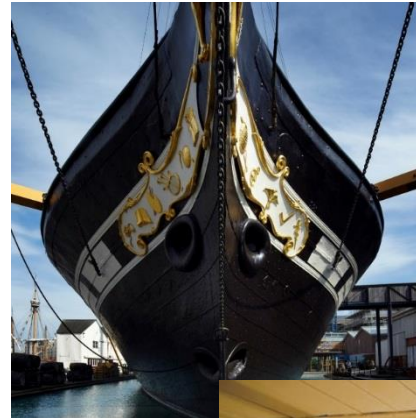
Brunel's ss Great Britain

(Recommended route – walk)

6:30-7:15 PM – Drinks reception on Promenade Deck

7:15 PM – Call to dinner and brief history of ship

7:30 PM – Dinner in First Class Dining Saloon



Background

- EPSRC Nuclear Decommissioning, Immobilisation and Waste meeting, Sheffield, 1st May 2013
- Project started 10th February 2014 to 9th February 2018, although no-cost extension granted to 9th November 2018
- £4.91M EPSRC → total £6.13M, plus £2.23M from industry = £8.36M
- World-class University network:

Imperial College
London

Lancaster
University

Loughborough
University

UNIVERSITY OF
BIRMINGHAM

University of
BRISTOL

UCL

UNIVERSITY OF LEEDS

MANCHESTER
1824
The University of Manchester

The
University
Of
Sheffield.

University of
Strathclyde
Glasgow

- Key project partners:

NATIONAL NUCLEAR
LABORATORY

NDA
Nuclear
Decommissioning
Authority

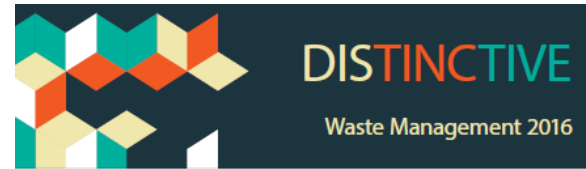
Sellafield Ltd

Research Councils UK
Energy
For a Low Carbon Future

DISTINCTIVE

Waste Management Conference (WM2016)

- 6th-10th March 2016, Phoenix Conference Centre
- Dedicated session:
 - Programme overview
 - Industrial perspective on collaborative research
 - Project specific presentations from Themes 1-3
- Over 40 attendees – new contacts for IAG and future collaborations
- Sponsored social (thank you to Longenecker and Associates – Laurie Judd)



092 EPSRC DISTINCTIVE Research Programme - Wednesday 9th March
13:30 - 17:00 - 106C

DISTINCTIVE is a multi-disciplinary collaboration of 10 universities and three key industry partners from across the UK's civil nuclear sector. Our world-class research programme focuses on the area of nuclear decommissioning and waste management.

Session Structure:

- Collaborative Research Programme in Decommissioning, Immobilisation and Storage Solutions for Nuclear Waste Inventories (DISTINCTIVE) (16466)
- Building Effective Collaborations to Bring Innovation into Waste Management and Decommissioning (16477)
- Novel Approaches for the Study of Corrosion and Ageing of Spent Nuclear Fuel (16467)
- Behaviour of Alpha Emitters in Cement (16139)
- Water Interactions with Actinide Oxides from First Principles: A Computational Study (16470)
- The Consolidation of Glass-Ceramic Wasteforms by Hot Isostatic Pressing: Sample Optimisation (16581)
- Is Glass Degradation only a Surface Effect: What Other Forms of Glass Degradation can Influence the Safety of Vitrified Nuclear Waste Disposal? (16474)
- A Novel Technology for Complex Rheological Measurements (16471)

More information about the programme can be found on our website: www.distinctiveconsortium.org

You are invited to a social in Room 106C immediately after the session to meet the team, to discuss the research presented and to build new collaborations.

The social has kindly been sponsored by



Other DISTINCTIVE-associated presentations:

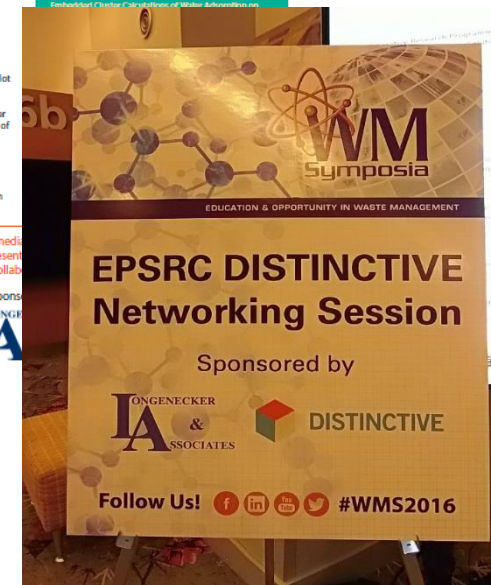
Modelling the Interaction of Corroded Magnesium Surfaces with Nuclear Waste Products (16464)
Poster - Monday - Session 031 - Mr. Esther Malkes - University College London

In-situ Analysis of Legacy Pond Sludge using Raman Spectroscopy (16465)
Poster - Monday - Session 031 - Mr. Kate Wyness - University of Bristol

Gas Retention and Release from Nuclear Legacy Waste (16466)
Poster - Monday - Session 030 - Mr. Michael Johnson - University of Leeds

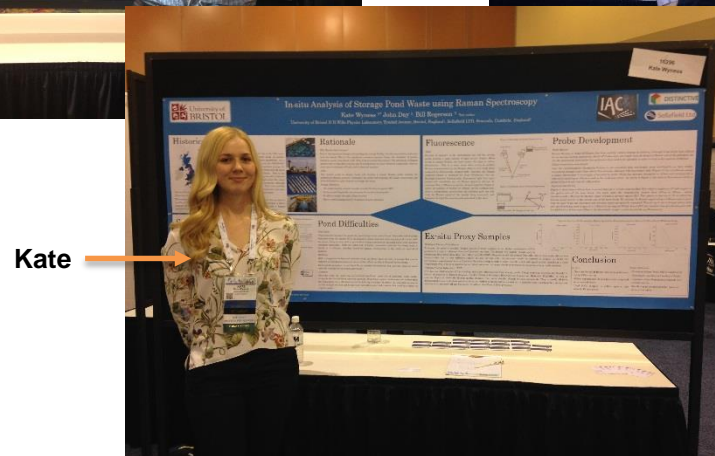
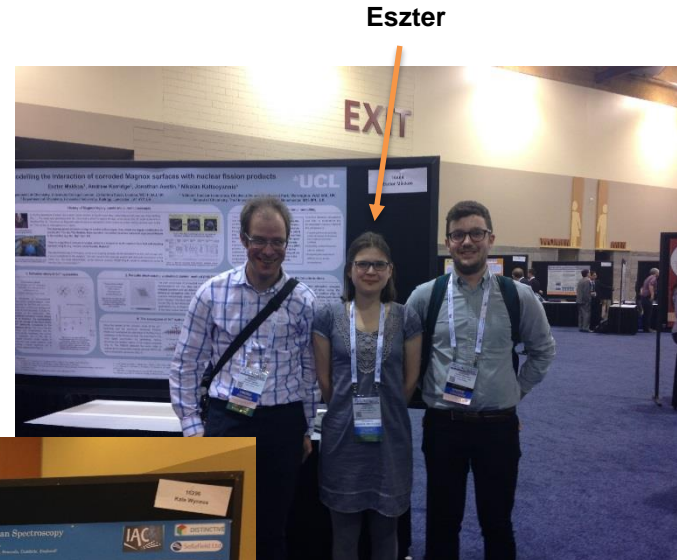
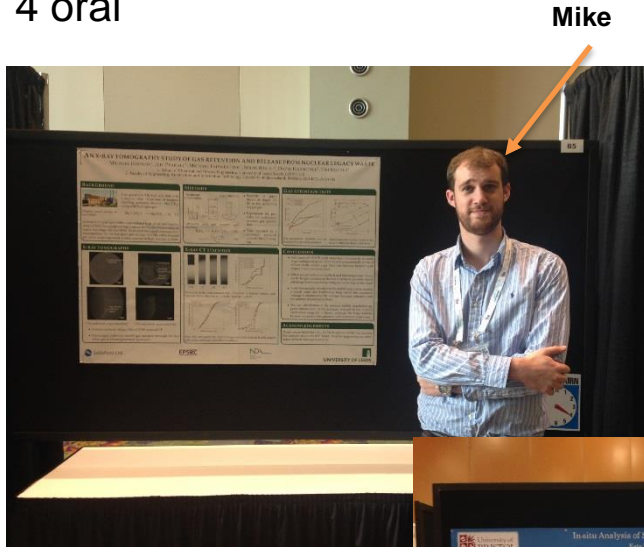
Choosing Your Nuclear Fuel Cycle: A Life Cycle Assessment Perspective (16425)
Oral - Tuesday - Session 035 - Mr. Andrea Pautlo - University College London

Embedding Circular Economy into Waste Management



Waste Management Conference

- 7 additional papers presented by DISTINCTIVE researchers:
 - 3 posters
 - 4 oral

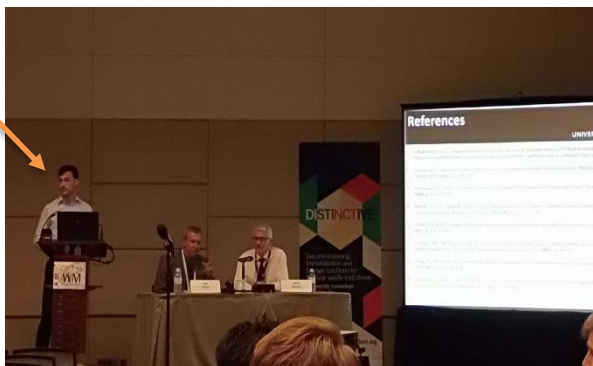


Waste Management Conference

- Five awards presented:
 - Stephanie Thornber, Luke Boast (Sheffield) and Dimitri Pletser (Imperial) – Roy G. Post Foundation Scholarship
 - Luke Boast (Sheffield) – UK Featured Nation
 - Andre Botha (Leeds) – NNL Bursary



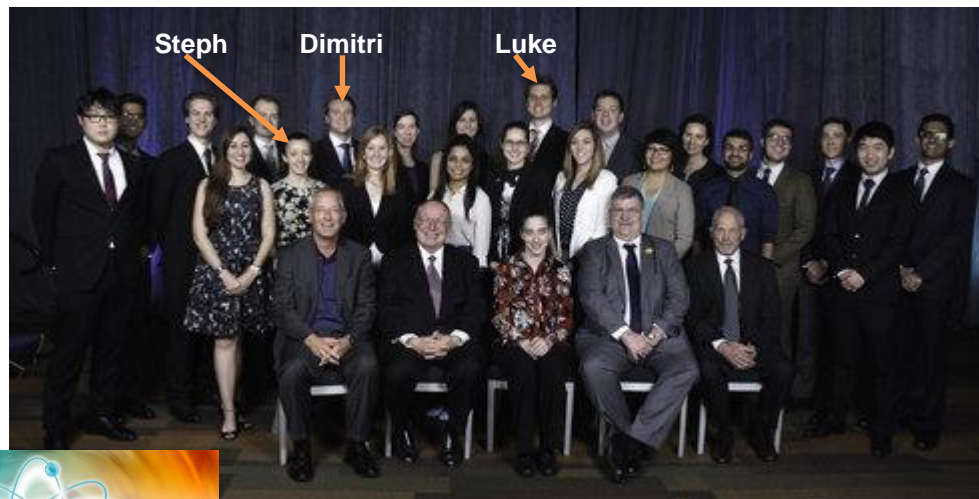
Andre



Steph

Dimitri

Luke



DISTINCTIVE

Active Research Fund

- At the time of submitting the proposal to the EPSRC, a number of PDRA projects indicated a potential need for active research facilities
- A detailed understanding of facility needs and the duration of work was unable to be defined
- As a result, the Active Research Fund (ARF) was requested

Initial Budget	£288k fEC (inc. VAT)
Number of Calls	3 to date
Number of Funded Sub-projects Awarded	8
Budget Awarded	~ £188k fEC (inc. VAT)
Remaining Budget	~ £100k fEC (inc. VAT)

Active Research Fund

Sub-projects funded:

- Investigation of Silica Grout-radionuclide Interactions: Impact on Radionuclide Mobility and Silica Gelation – **Dr. Matteo Pedrotti, Strathclyde**
- The Corrosion of Spent Nuclear Fuel – **Dr. Leila Costelle, Bristol**
- An Investigation of Wasteform Evolution During Wet-recovery and Drying of SNF – **Dr. James Darnbrough, Bristol**
- Building a Portable Ultra-high Vacuum (UHV) Chamber for Active Samples – **Dr. Leila Costelle, Bristol**
- Fission Product Effects on Spent Fuel Corrosion – **Dr. James Darnbrough, Bristol**
- Building and Commissioning a Vacuum Sampling System for PuO₂ Glovebox Experiments – **Dr. Luke Jones, Manchester**
- A Hot Isostatic Press Upgrade for Processing of Radioactive Materials – **Dr. Shi-Kuan Sun, Sheffield**
- Hard X-ray Absorption Spectroscopy Studies at the Photon Factory – Japan – **Dr. Shi-Kuan Sun, Sheffield**

2nd Annual Meeting: Agenda

- 22 oral presentations across 5 sessions:
 - 17 DISTINCTIVE researchers (9 PDRAs/8 PhD students)
 - 1 academic Co-I, 1 industry partner
 - 3 international invited speakers from complementary research areas
- 4 Q&A/discussion sessions led by IAG and academic Co-Is
- 48 poster presentations will be available for viewing during the breaks
- NNL/NDA/SL exhibiting in Annex
- Two PhD awards (oral/poster presentations) will be presented at the end of Wednesday. Don't forget to vote!

2nd Annual Meeting: Objectives

- Facilitate knowledge transfer, enabling our researchers to share advances made, and to engage with industry experts and potential employers
- Provide networking opportunities between academia, industry, government and regulatory authorities
- Promote the uptake of DISTINCTIVE research into the nuclear waste management and decommissioning industry
- Generate new collaborative research ideas

I hope that you enjoy the meeting

