DISTINCTIVE – Current Status

Abby Ward
University of Leeds

Theme 3 – Silo Ponds and Legacy Wastes
17th November 2015
University of Birmingham

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Background

- Project started 10th February 2014 to 9th February 2018, although no-cost extension granted to 9th November 2018 (21 months)
- £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

Queen's University Belfast

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

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Theme 3 - Projects

- All researchers recruited
- 11 original projects (three PDRA, eight PhDs) & 11 associated PhDs
- Industrial engagement is key to a success outcome → encourage industrial support where possible

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Theme 3 - Projects

LEGACY PONDS AND SILO WASTES

DISTINCTIVE is a multi-disciplinary
3 key industry partners from across

UNIVERSITY OF BIRMINGHAM

Novel Ion Exchange Materials

PhD/PDRA – PDRA

Academic Lead – Joe Hriljac

Researcher: Evin (Tzu-Yu) Chen

University – University of Birmingham

The ion exchange material used in SIXEP to remove Sr and Cs from Sellafield effluent is the natural zeolite clinoptilolite changing nature of the effluent due to factors such as accelerating legacy pond clean-up and finite lifetime of the curre supply of clinoptilolite justifies research for new and improved materials that might either replace or supplement the clinoptilolite in future operations. The focus of this project would be to investigate other families of porous silicates, fo example some related to the CST in IONSIV, as new ion exchangers not only for Sr and Cs but other relevant cations that may require removal from effluent such as actinides or other metals. These materials could find use more widely, both the UK and internationally. The project would be experimentally led (materials discovery and optimisation, characterisa and exchange testing with both non-active and then active solutions) but incorporate an element of computer modelli (atomistic simulation to predict ion exchange sites, framework response to exchange, and potential migration pathwa during exchange) to assist mechanistic understanding and materials performance optimisation.

Please keep your project details/descriptions up-to-date.

Send any changes to A.M.E.Ward@leeds.ac.uk

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Theme 3 - Publications

Publications	Further Information
Makkos E., Kerridge A., & Kaltsoyannis N., The importance of second shell effects in the simulation of hydrated Sr2+ hydroxide complexes. Dalton Transactions, vol. 44, pp. 11572-11581.2015. DOI: 10.1039/c5dt01110h	

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Upcoming Events

Theme Meetings

Theme 1 – AGR, Magnox and Exotic Spent Fuels
Wednesday 21st October, University of Bristol, Tom Scott (t.b.scott@bristol.ac.uk)

Theme 2 – PuO_2 and Fuel Residues
Thursday 12th November, Lancaster University, Colin Boxall (c.boxall@lancaster.ac.uk)

Theme 3 – Legacy Ponds and Silo Wastes
Tuesday 17th November, University of Birmingham, Joseph Hriljac (j.a.hriljac@bham.ac.uk)

Theme 4 – Structural Integrity
Monday 23rd November, University of Strathclyde, Andrea Hamilton (andrea.hamilton@strath.ac.uk)

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Upcoming Events

WM2016 – Dedicated DISTINCTIVE Session

Session: 092 - ESPRC DISTINCTIVE Research Programme
Date: Wednesday, March 09, 2016
Time: 1:30 PM - 5:00 PM

Creativity@Home – Public, Media & Government Engagement School

- June 2016 (likely to be 22nd – 24th)
- Three-day event
- Sheffield (led by Neil Hyatt and Claire Corkhill)

Proposed activities: media training, public engagement, scientific writing and getting published

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Upcoming Events

2nd Annual Meeting

- @Bristol and ssGB
- Researcher/industry/keynote presentations (oral and poster)
- Industry sponsorship opportunities

Welcome suggestions on format

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Any questions?

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