

EPSRC Prosperity Partnership

Delivering Enhanced Through-Life Nuclear Asset Management

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News >

Partnerships for a Prosperous Nation - EPSRC announces £138 million investment in research-business partnerships

Issue date: 13 July 2017

Tag: Press Release

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Two major investments in research partnerships that will strengthen the links between the UK's research base, industry and business partners will be announced today (Thursday 13 July 2017), by Jo Johnson, Minister for Universities and Science.

Both investments show the pivotal importance of engineering and the physical sciences to the country's continued development as a global research and innovation leader.

The first investment is a new initiative, a set of Prosperity Partnerships, which will receive £31 million of government funding from the Engineering and Physical Sciences Research Council (EPSRC) and the Industrial Strategy Challenge Fund (ISCF). This will be matched by a further £36 million from partner organisations in cash or in-kind contributions, and £11 million from universities' funds, resulting in a £78 million investment.

These will be launched at 18.00 hrs at a special event at BT's HQ, 81 Newgate Street, London EC1A 7AJ. News and picture editors are invited to send a reporter/photographer. For further information and accreditation contact the EPSRC Press Office via the "Contacts" information below.

Ten universities will lead on 11 projects that range from the future networks for digital infrastructure to offshore wind and they will partner with businesses operating in key areas of the innovation landscape. These include household names such as Siemens, BP and Unilever and also firms like M Squared Lasers that are leading in areas such as advanced photonics.



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Prosperity Partnership: Fundamental Advances in Key Challenge Areas

Theme 1: Advanced Through-Life Inspection Solutions

Theme 2: Biotechnology for Treatment and Repair of Concrete Nuclear Infrastructure

Theme 3: Operational Intelligence: Novel Data Science and Distributed Intelligence



EPSRC Prosperity Partnership

Delivering Enhanced Through-Life Nuclear Asset Management



£4.5M total programme: November 2017 – October 2022

£2.1M of EPSRC funding secured from Prosperity Partnership

£1.9M of industry funds still available to transfer low TRL research into impact

Academic Partners

Theme 1: Advanced Through-Life Inspection Solutions

Prof Tony Gachagan, Prof Gareth Pierce, Dr Gordon Dobie (Strathclyde)

Prof. Stewart Williams (Cranfield University)

Theme 2: Biotechnology for Treatment and Repair of Concrete Nuclear Infrastructure

Prof Becky Lunn, Dr Jo Renshaw, Dr Andrea Hamilton (Strathclyde)

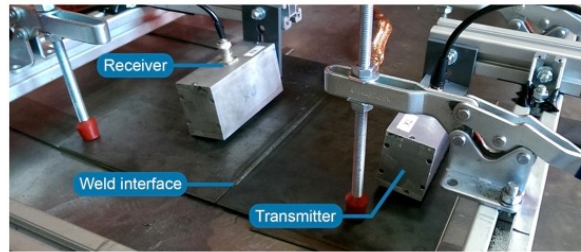
Prof. David Read (NPL)

Theme 3: Operational Intelligence: Novel Data Science and Distributed Intelligence

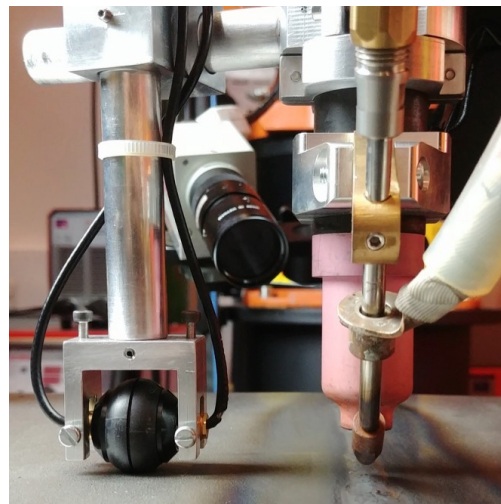
Prof Stephen McArthur, Dr Graeme West, Dr Craig Michie (Strathclyde)

Prof Mark Girolami, Dr Andrew Duncan, Dr Darren Grey (Turing Institute)

Theme 1 – Advanced Through-Life Inspection Solutions



Projects	In-Process Weld Inspection	Zero Assumption NDE
Industrial Drivers	<ul style="list-style-type: none"> • Reduced Re-work – Financial & Time Savings • Defect Free Fabrications – Safety & Lifetime Enhancements • Reduced Downtime – Particularly in Asset Outage Situations • Increased Throughput • Rapid Complex Weld Inspection 	<ul style="list-style-type: none"> • Improved plant uptime, revenue increase. • Cost saving, simplifying outage planning and organisation.
Key Technology Challenges	<ul style="list-style-type: none"> • Acoustic propagation in complex materials and harsh environment (Temperature & EM Interference) • Deployment and defect sensitivity 	<ul style="list-style-type: none"> • Novel ultrasonic inspections • Robotic deployment



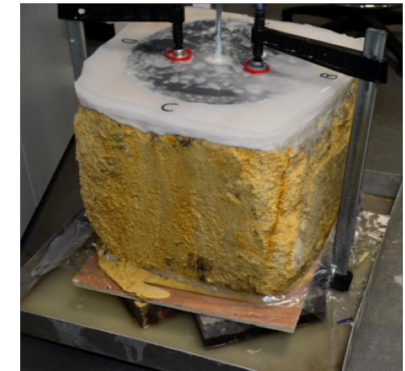
Theme 2 - Biotechnology for Treatment and Repair of Concrete Nuclear Infrastructure



Biotechnology-based concrete repair

Prof Rebecca Lunn, Civil & Environmental Engineering

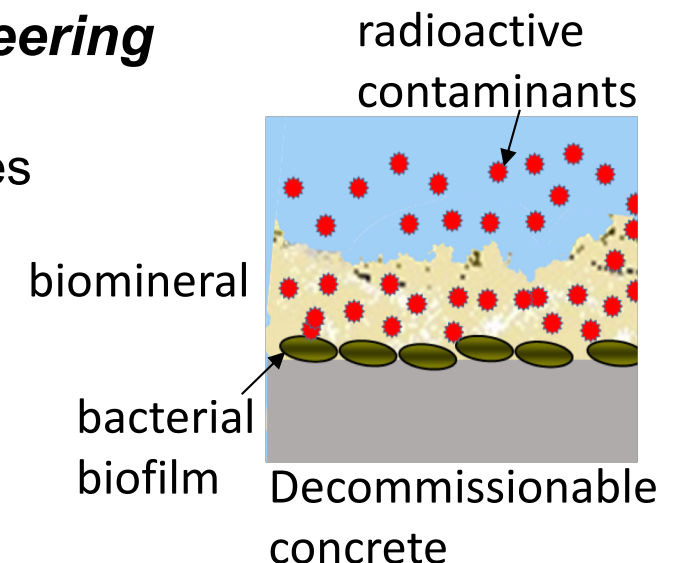
- Microbially Induced Calcite Precipitation (MICP) TRL 2-4
- Extensive research at lab scale
- Next stage: up-scaling to field applications
repairing full range of degradation issues
- PDRA starts 5/9/18



Concrete bio-treatment for nuclear decommissioning

Dr Joanna Renshaw, Civil & Environmental Engineering

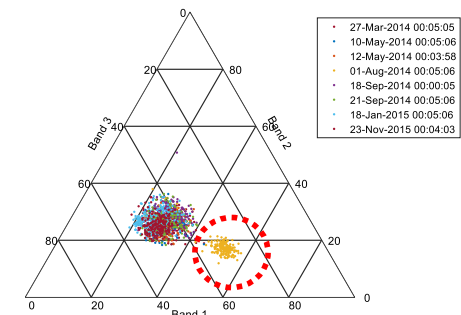
- Removable Bio-Apatite surface layer to trap radionuclides
- New concept – TRL 1-2
- Next stages: optimize apatite deposition
test apatite layer properties
develop method for removal
- PDRA started 21/7/18



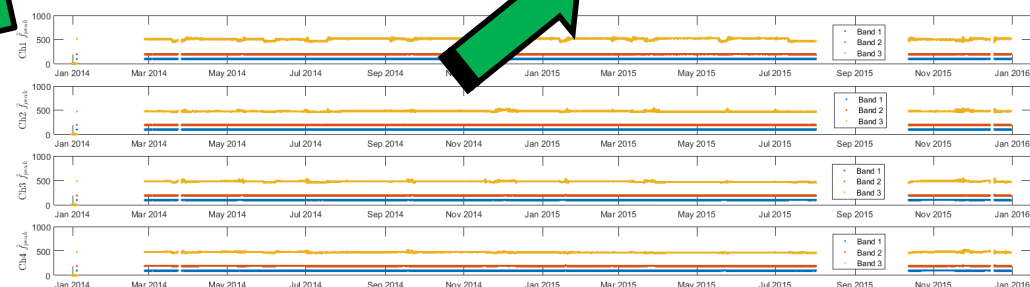
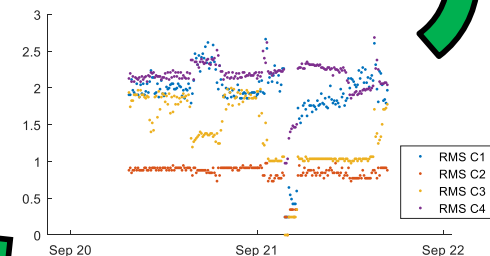
Theme 3 – Operational Intelligence

Improved Feed Pump Performance through Predictive Analytics

- Encoding engineering expertise into plant operation analytics
 - Automate identification of performance changes
 - Support maintenance and planning decisions
- Complexity of operational behaviours necessitates both multivariate and time series analysis of monitoring data



Gearbox Bearing
Vibration



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