

# Radiochemistry – Underpinning Science for Nuclear Waste Management

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# Contents

- Welcome
- The Challenges
- Why are skills in Radiochemistry important
- The Opportunities
  - Elimination
  - Minimisation
  - Improve

# The Challenges

- 350,000 m<sup>3</sup> of ILW from Decommissioning in UK
- Technology mature – cement based
- High specification waste packages
- Cost of raw materials increasing significantly
- Time window for innovation limited

# Issues - Complexity



# Radiochemistry Skills

- Majority of Wastes require characterisation
- Limited interest in University Environment
- Increasing demand on the supply chain
- Step change from operational analysis
  - Problem solving
  - Not routine
  - Requires different skill sets
- Laboratory looks like something from 1960's

# Opportunities

- Elimination
  - Re-categorisation (better categorisation!!)
  - Decontamination
- Minimisation
  - Higher packing fractions
  - Step change technology (e.g. plasma)
- Improve
  - Development of better waste forms for disposal
  - Improved packaging materials

# Opportunities (2)

- 20 NDA sites – numerous common problems
- Non nuclear technology – proven solutions
- International solutions