



# **Providing A nuclear fuel Cycle In the UK For Implementing Carbon reduction (PACIFIC)**

Nuclear Academics Discussion Meeting  
University of Liverpool  
3<sup>rd</sup> September 2018



# Providing A nuclear fuel Cycle In the uk For Implementing Carbon reduction (PACIFIC)

- Funded by EPSRC and Industry - £3.75M
- Start 31<sup>st</sup> May 2014, End 31<sup>st</sup> January 2019
- Principle Investigators:
  - Prof. Tim Abram (University of Manchester) – Fuels
  - Prof. Bruce Hanson (University of Leeds) - Separations





Fuels Theme

In-Reactor Damage  
Effects in Advanced  
Ceramic Fuels and  
Coatings  
T Abram

A mechanistic study of  
pellet cladding  
interaction  
M Preuss

Fuel Modelling  
R Grimes

Thin Film and Fuel Pellet Sample  
Manufacture  
T Scott

Advanced TRISO Coated Fuel  
Particles  
P Xiao

Materials Characterisation and  
Irradiation  
T Abram

Separations  
Theme

Minor Actinide  
Separations  
C Boxall

Direct Monitoring of Speciation  
in Minor Actinide Separations  
S Faulkner

Optimising Interfacial Transfer  
Kinetics during Minor Actinide  
Sep  
C Boxall

Actinide Behaviour and  
Radiolysis Effects of  
Complexants in Minor Actinide  
Separations  
C Sharrad

Ligand Structure-Activity  
Relationship Development  
L Harwood

Advanced separations  
technology  
P Angeli

Develop a better understanding  
of conventional solvent  
extraction technology  
B Hanson

Intensified mixing using  
impinging liquid jets  
P Angeli

Development of high efficiency  
coalescers and settlers  
B Hanson

Modelling of intensified  
separations  
E Fraga

Continuous Chromatographic  
Separation of Actinides and  
Fission Products  
G Bond

Product conversion to  
fuel  
A Mount

Establishment and optimisation  
of the process for direct  
reduction of spent fuel  
A Mount

Decontamination and  
immobilisation of  
pyroprocessing wastes  
N Hyatt

Integration of fuel manufacture with recycle

Outreach & Public Engagement

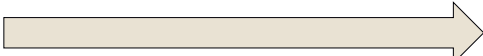


## PACIFIC - outcomes

### View of the project team

- The programme has been a definite cross discipline team effort; Chemists, Physicists, Material Scientists, Mathematicians and Engineers, have worked closely on all the projects
- PhD and Early Career Researchers engaged with experts to discuss their work in a constructive and informal environment.

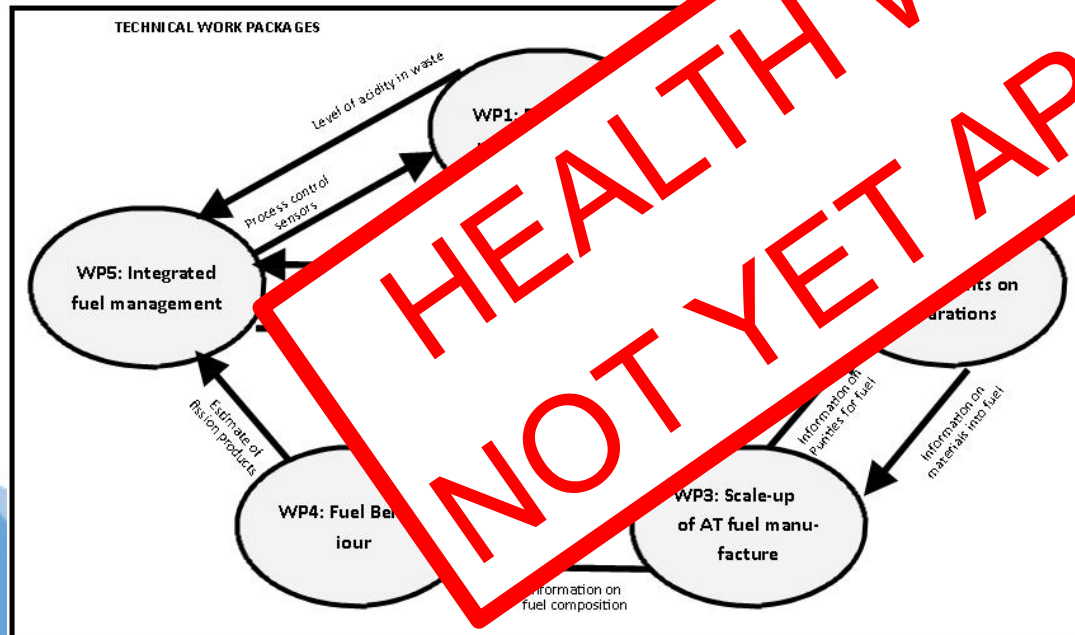
Publications	23
Collaborations & Partnerships	11
Further Funding	12
Next Destination	2
Engagement Activities	11
Influence on Policy, Practice, Patients & the Public	3

**Follow on call**  **ATLANTIC**



# Accident ToLerANT fuels In reCycling (ATLANTIC)

- Funding by EPSRC - £2.5M (£3.125M full)
- Principle Investigators:
  - Prof. Bruce Hanson (University of Leeds)
  - Prof. Tim Abram (University of Manchester)



HEALTH WARNING  
NOT YET APPROVED



The University of Sheffield

UNIVERSITY OF LEEDS

UNIVERSITY OF OXFORD

UCL



# International Nuclear Engineering Conference

4–5 October 2018  
Manchester, UK