

# Keeping the Nuclear Option Open

## First Meeting

G.20, Department of Materials, Imperial College London

### Agenda

Friday 22<sup>nd</sup> September

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#### Morning

- 9:00 Introduction and welcome – Robin Grimes
- 9:10 Housekeeping – Mark Levy
- 9:15 Session 1: Work Package 1**  
Fuel, thermal hydraulics and reactor systems
- 9:15 Introduction to WP1 – Simon Walker
- 9:30 Thermal hydraulics and turbulence modeling for Gen. IV nuclear reactor design and licensing procedures – Mark Cotton
- 9:50 Chris Pain
- 10:10 Water reactor safety – Geoff Hewitt and Simon Walker
- 10:30 Coffee (G.01)
- 11:00 Session 2: Work Package 2**  
Materials performance and monitoring reactor conditions
- 11:00 Introduction to Materials Issues within KNOO – Andrew Sherry
- 11:05 Microstructural, mechanics and electrochemical factors on corrosion – Andrew Sherry, Tony Cook, Abdulla Al-Shater
- 11:15 Intelligent, miniaturised, encapsulated monitoring systems – David Smith
- 11:30 Remote structural interrogation and monitoring tools – Chris Scruby
- 11:45 Materials performance in Gen. III and Gen IV systems – Lyndon Edwards
- 12:00 Irradiation induced aging in nuclear graphite – Barry Marsden
- 12:15 Lunch (G.01)

## Afternoon

### 13:30 Session 3: Work Package 3

An integrated approach to waste immobilization & management

- 13:30 Interface science and particle waste immobilisation – Simon Biggs
- 13:45 Colloidal Ternary Systems in Nuclear Waste Systems – Nick Bryan
- 14:00 Karl Travis
- 14:15 Atomic simulations for wasteform – Robin Grimes,
- 14:30 Divalent ion substitution in calcium apatite – Emily Michie

14:45 Tea (G.01)

### 15:15 Session 4: Work Package 4

Safety and performance for a new generation of reactor designs

- 15:15 Background to WP4 – Tony Goddard
- Coupled transient fault studies for Gen. IV systems – Chris Pain, Jefferson Gomes, Brendan Tollit
- 15:30 CFD studies of HT for innovative fuel element surfaces – Mark Cotton, Yacine Addad
- 15:40 Metallic Materials issues for Gen. IV – Lyndon Edwards
- 15:50 Graphite materials issues for Gen. IV – Barry Marsden
- 16:00 Molecular dynamics simulations of fission gasses in UO<sub>2</sub> – David Parfitt
- 16:10 Hydrogen generation in the context of Gen. IV – Ray Allen

16:25 Close – Robin Grimes

16:35 Housekeeping – Mark Levy

16:45 Management Committee Meeting

18:30 Pre-dinner drink

19:00 Dinner (Ognisko Polish Club)