

Centre for Doctoral Training
Nuclear Energy

3rd September 2014



www.imperial.ac.uk/nuclearcdt



Nuclear Energy

Imperial . Cambridge . Open

CDT → MSc + PhD

CDT (4 years) = MSc (1 year at Imperial) + PhD (3 years at either Imperial, Cambridge or Open)

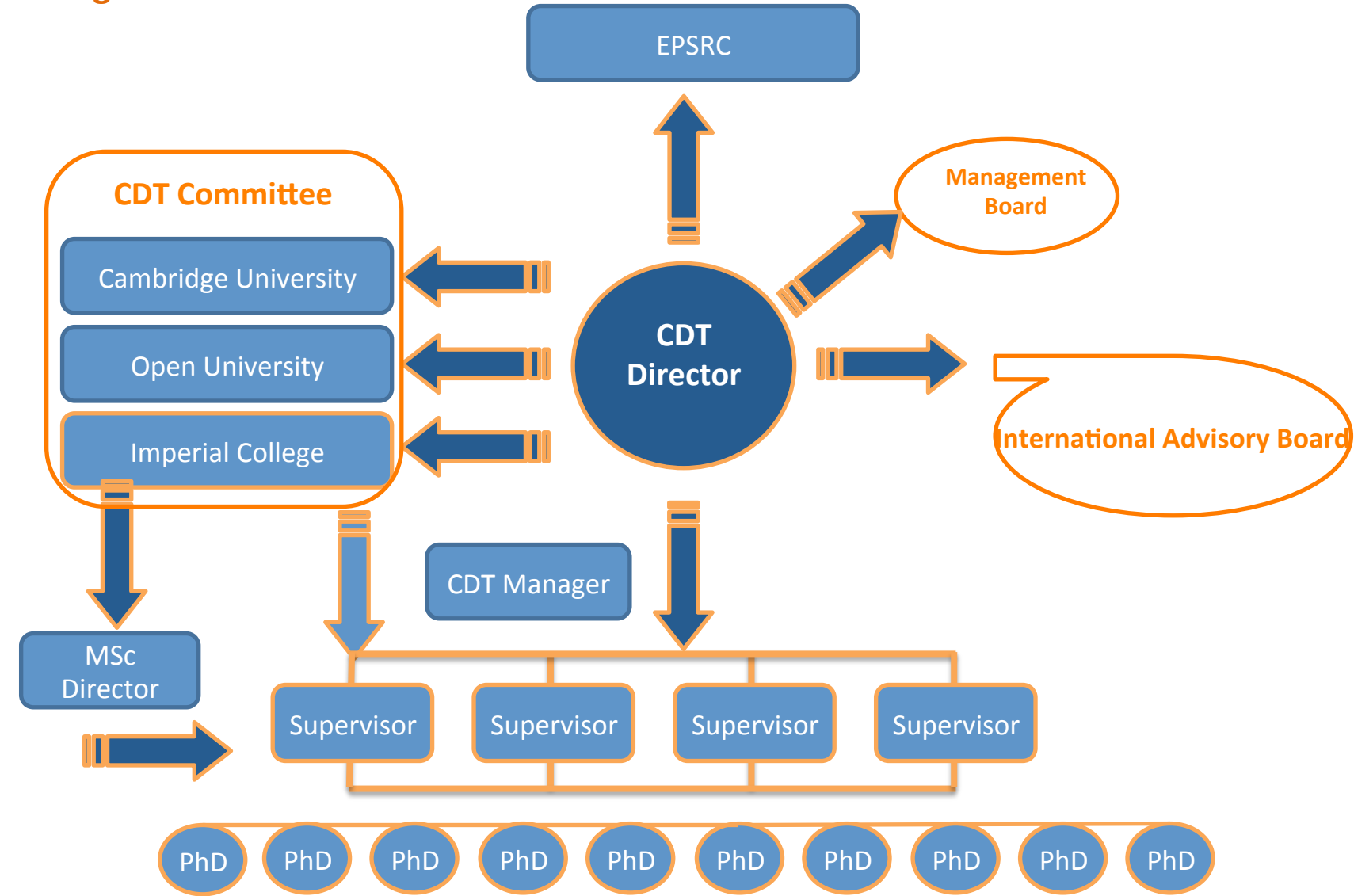
£4M funding from EPSRC (led by Imperial College)

Training 62 PhD students in 5 cohorts

Fully supported by nuclear industry and international partners

<http://www.imperial.ac.uk/nuclearcdt>

Management Structure



CDT Committee

Members

Bill Lee - CDT Director (Chair)

Mike Bluck - CDT Deputy Director

Moji Moatamedi - CDT Technical Manager

Ben Britton - Nuclear Engineering MSc Director

Ian Farnan - CDT Co-Director Cambridge

Bill Nuttall - CDT Co-Director The Open University

Emma Warriss - CNE Project Manager

PhD representative

Purpose

Day-to-day CDT business

Meets: Monthly

CDT Management Board / International Advisory Board

Management Board

Comprises CDT Committee and representatives from industry partners including Rolls-Royce, EdF Energy and AWE.

Stakeholders will hear reports on progress and plans, and be able to offer guidance.

Meets: Every six months

International Advisory Board (Joint with NGN Manchester)

Members drawn from key global players such as Westinghouse, EdF, CEA, Massachusetts Institute of Technology and ANSTO

Meets: Annually in line with Manchester led Next Generation Nuclear CDT

Project Selection Process

Project Selection

- Academics discuss potential projects with industry partners
- Agreed projects advertised on ICO CDT website
- Candidates apply for MSc in Nuclear Engineering and choose three PhD projects from projects on website

Admission Process

- Candidates assessed against entry requirements for MSc in Nuclear Engineering at Imperial
- Once accepted for MSc applicants are assessed for PhD studies by interviews with potential industrial and academic supervisors based on candidates' project selections
- If accepted Imperial will issue the final acceptance letter to the candidates

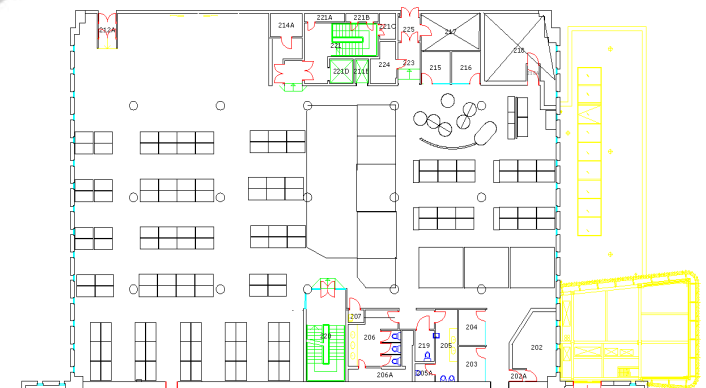
Projects, Students and Supervisors

2014 Entry: 9 Students

1. Immobilisation Process for High Dose Spent Absorbent from Fukushima
 - **Bhaswati Guha** (Bill Lee – ICL)
2. The Effect of Hydrogen on the Mechanical Properties in Steel
 - **William White** (Ben Britton – ICL)
3. Atomic Scale Simulation of Fuel-Cladding Interaction
 - **Alexandros Kenich** (Robin Grimes – ICL)
4. Multi-objective Optimization of PWR Reload Cores by Tabu Search
 - **Mark Mawdsley** (Geoff Parks – Cambridge University)
5. Use of Thorium-fuelled LWRs to Manage the UK's Plutonium Stockpile
 - **Sophie Morrison** (Eugene Schwagareus – Cambridge University)
6. Development of a Multi-objective Optimization Capability for Heterogeneous LWR Fuel Assemblies
 - **Alan Charles** (Geoff Parks – Cambridge University)
7. Process Heat Applications of Fusion Energy
 - **Richard Pearson** (Bill Nuttall/Bartek Glowacki – The Open University)
8. Residual Stresses in Next Generation Nuclear Power Plant
 - **Johannes Brokx** (John Bouchard – The Open University)
9. Future Nuclear Fission Energy Systems and Hydrogen Production
 - **Andrew Wilson** (Bill Nuttall/Bartek Glowacki – The Open University)

CDT Space

Imperial College Dedicated Space for all first year CDT students



Cohort Building / Selection of Planned Visits

Institute for Nuclear Research - Romania

The Institute for Nuclear Research Pitesti was founded in 1971 as a unit of strategic importance, having as field of activity the scientific research, design, technological development and scientific and technical responsibility for the development of nuclear energy in Romania.



The Halden Reactor - Norway

The Halden Reactor is a 25MW nuclear reactor located in Halden, Norway and dedicated for research. The reactor became operative in 1958, and is operated by the Institute for Energy Technology.



ICO CDT Launch Plan

October/November 2014

The launch of ICO CDT will be synchronised with the first Management Board planned for Autumn 2014.

