

NLS Project:

A proposal for a New Light Source Facility in the UK

Jon Marangos, Imperial College Project Leader

John Womersley, STFC Project Sponsor

Mike Dunne, STFC, Project Customer

Frances Quinn, STFC, Project Manager

Richard Walker, DLS, Manager, Facility Design

NLS is a working title a real name will need to be devised

What is NLS?

- It will be a set of facilities potentially including both state of the art conventional lasers (high field/ultra-short pulse) and **at its core a short wavelength free electron laser**
- The facility is anticipated to have unique capabilities compared to other projects under construction around the world
- A key objective of the facility is anticipated to be measurement of the structural dynamics of systems of interest across the sciences

Anticipated Timetable

- Project Launch April 2008 (Launch meeting April 11th, Royal Society London)
- Phase 1 April – October 2008
 - Establishing key science drivers - start on different premise from 4GLS
 - STFC Review October 2008
- Phase 2 October 2008 – October 2009
 - Sufficiently far advanced design for costing
- Proposal to be considered for funding 2010

Build on work of 4GLS, ERLP/ALICE also other UK projects such as Artemis (HHG source at RAL), DLS, LFS (Lasers for Science)

Subsequent phases are subject to the outcome of the review

Phase 1: Establishing Key Science Drivers and Outline Specifications

- Town Meeting 11th April
- Science Workshops (April /May 2008)
 - a. Life Sciences (Dame Louise Johnson FRS)
 - b. Condensed Matter (Andrea Cavalleri)
 - c. Chemical Science (Jonathan Underwood)
 - d. High Density Plasma Science (Justin Wark)
 - e. Electron Dynamics/Attosecond Science (Jon Marangos)
 - f. Photon Sources (Richard Walker)

Scientific co-ordinators – Peter Weightman, Wendy Flavell

Input will be used to inform both the NLS project science drivers and the broader UK Photon Sciences strategy

Phase 1: Establishing Key Science Drivers and Outline Specifications

Working Groups and Conveners:

- a. Life Sciences (Dame Louise Johnson FRS)
- b. Condensed Matter (Andrea Cavalleri)
- c. Chemical Science (Jonathan Underwood)
- d. High Density Plasma Science (Justin Wark)
- e. Electron Dynamics/Attosecond Science (Jon Marangos)
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