

IMMW20

International Magnetic Measurement Workshop

4th – 9th June 2017, Diamond Light Source



Welcome

Richard Walker, Technical Director,
Diamond Light Source

Harwell Campus

200 organisations
5000 employees

ISIS - neutrons

Medical Research Council

Central
Laser
Facility

PHE

Research
Complex

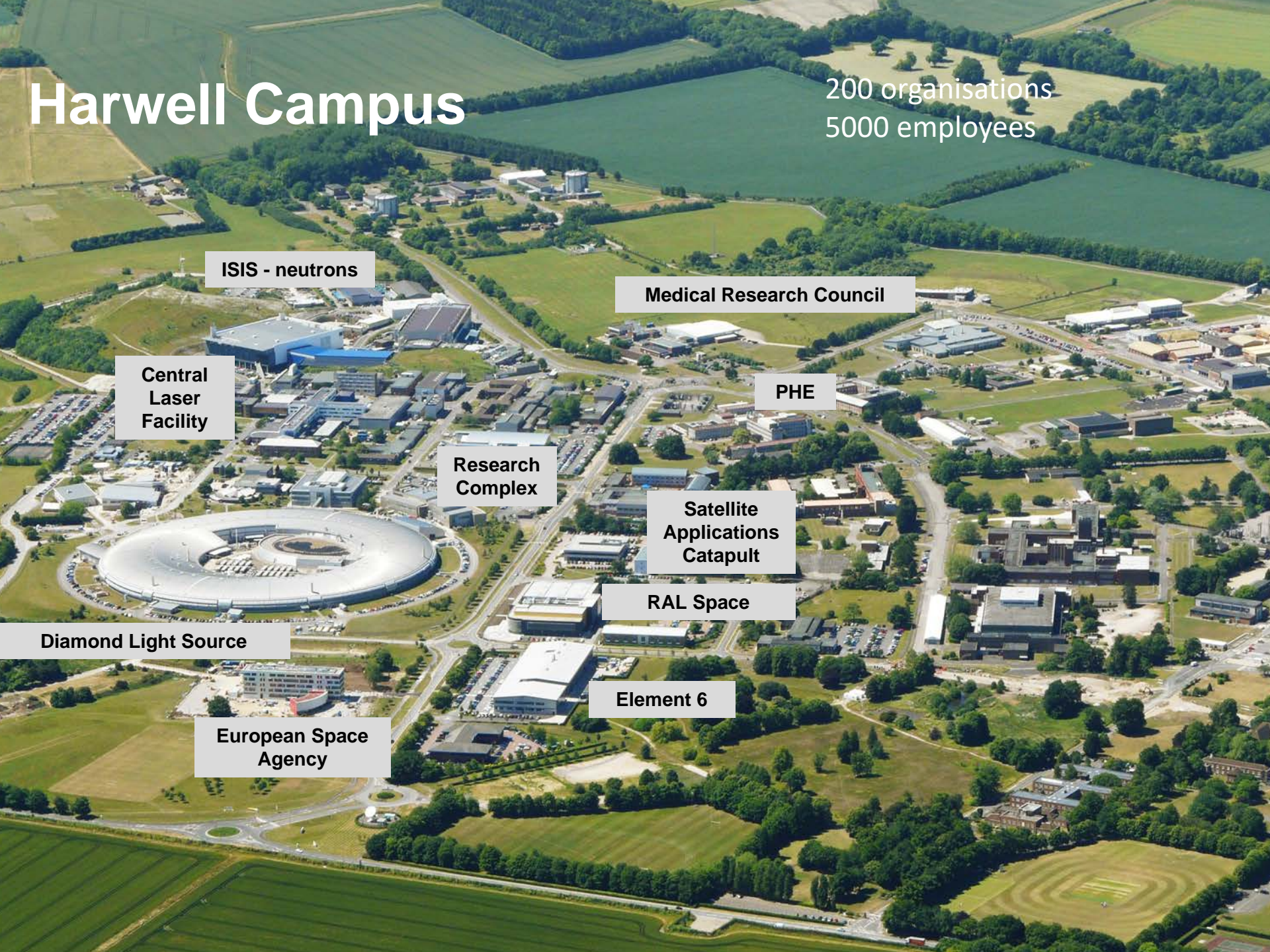
Satellite
Applications
Catapult

Diamond Light Source

RAL Space

European Space
Agency

Element 6



Diamond Light Source

- The largest scientific facility to be built in the UK for over 40 years
- A private company formed as a joint venture between the UK Government (86%) and The Wellcome Trust (14%)
- Started operations in Jan. 2007



Celebrating Diamond's
15th anniversary and 10 years
of research and innovation

Diamond Main Parameters

Circumference 561.6 m

Energy 3 GeV

Lattice 24-cell, DBA

Current 300 mA

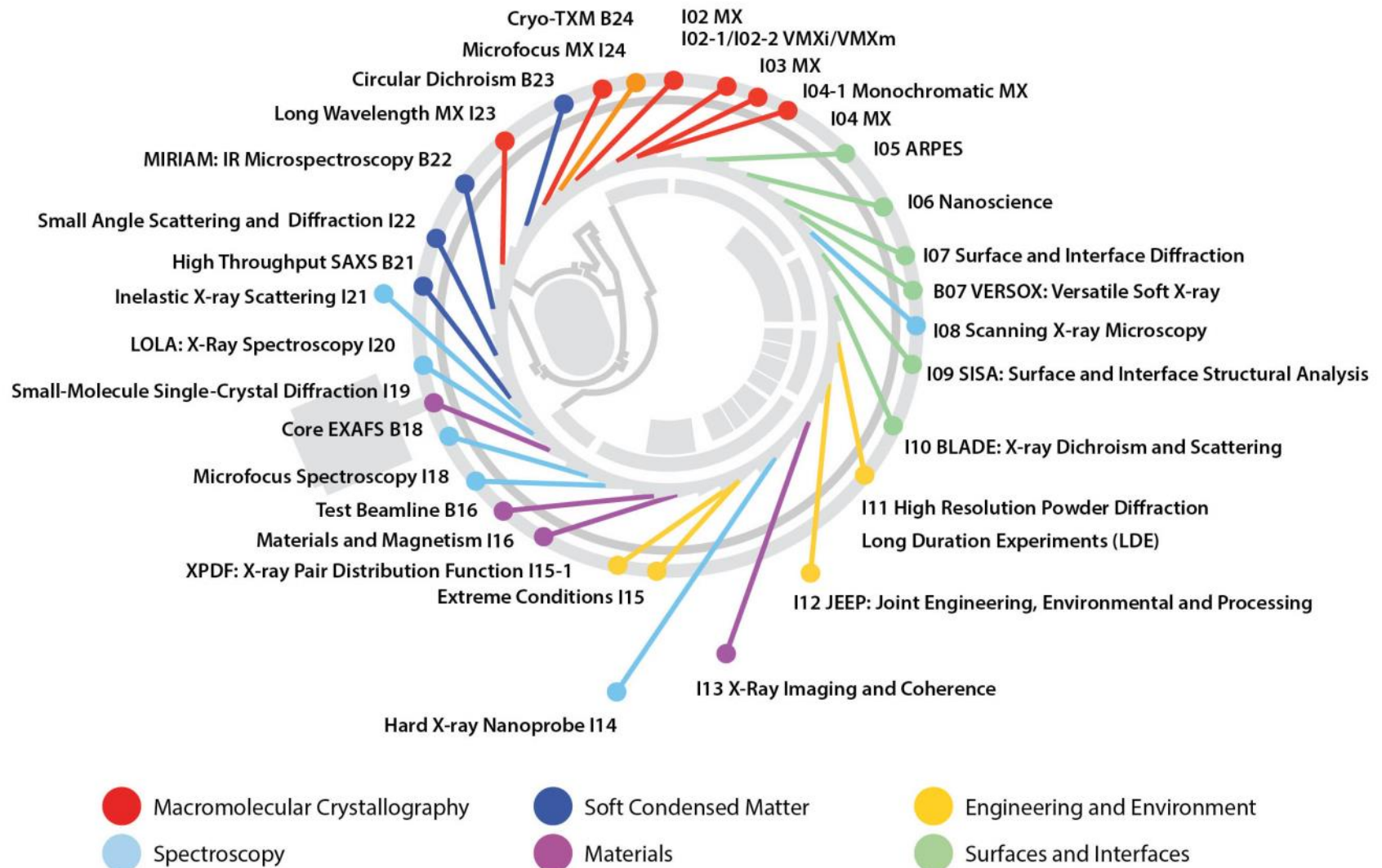
Emittance

- horizontal 2.7 nm

- vertical 8 pm

Min. ID gap 5 mm

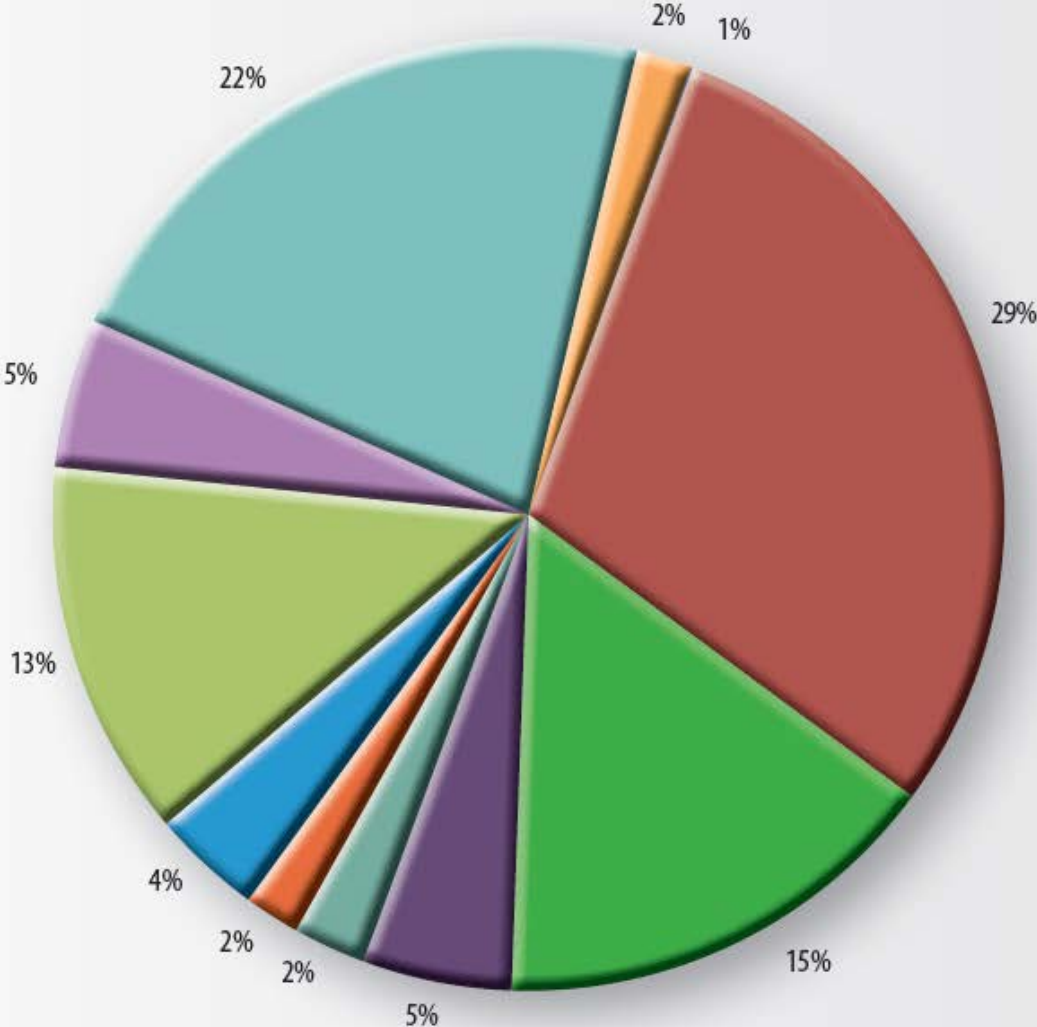
28 beamlines, 5 more to come



Proposals by discipline and research theme

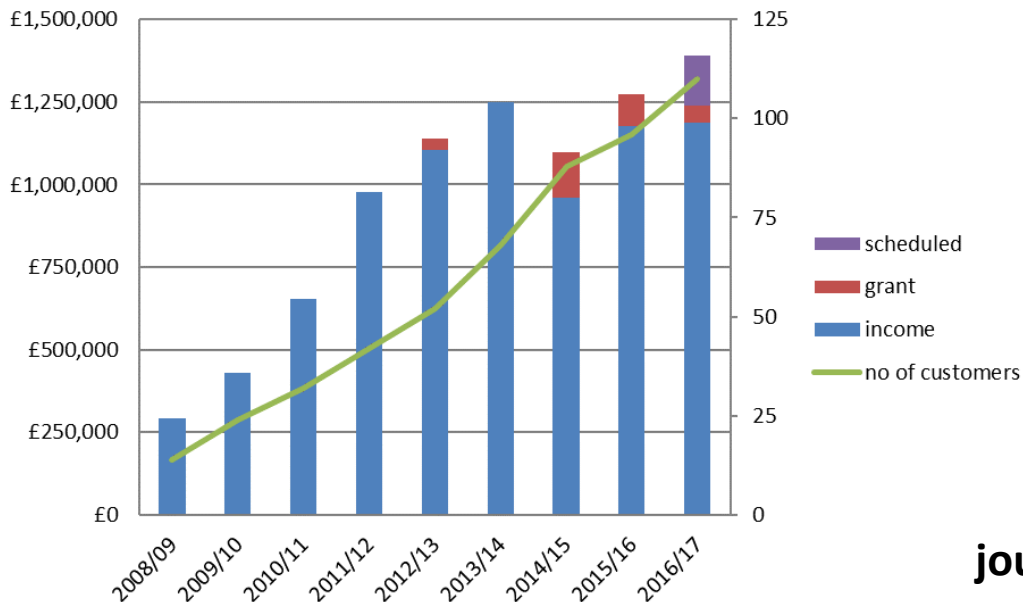
Experimental shifts scheduled by Diamond by main subject area for 2016/17

- Archaeological and Cultural Heritage
- Biology and Bio-materials
- Chemistry
- Earth Science
- Energy
- Engineering
- Environment
- Food Science
- Materials
- Medicine
- Physics
- Technique Development

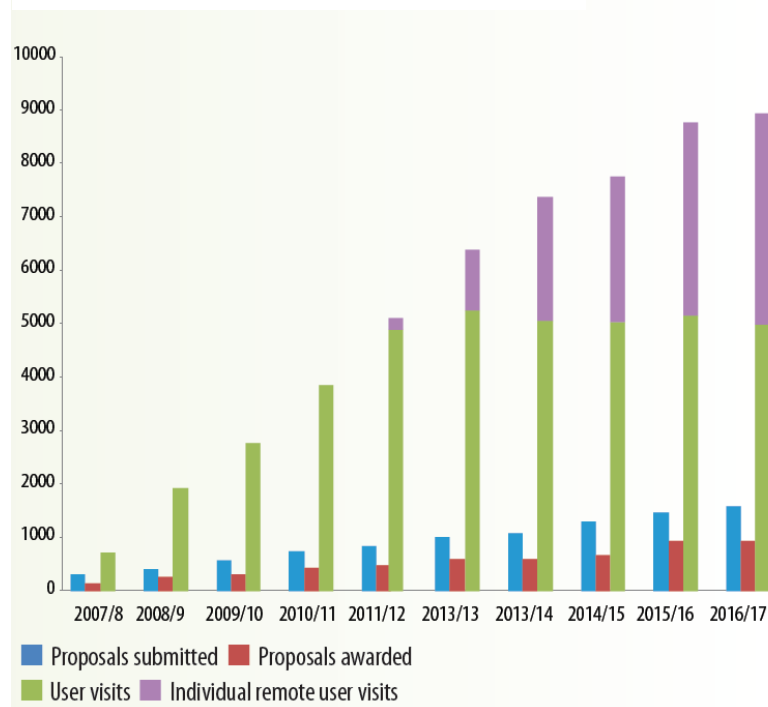


still growing ...

industrial usage:

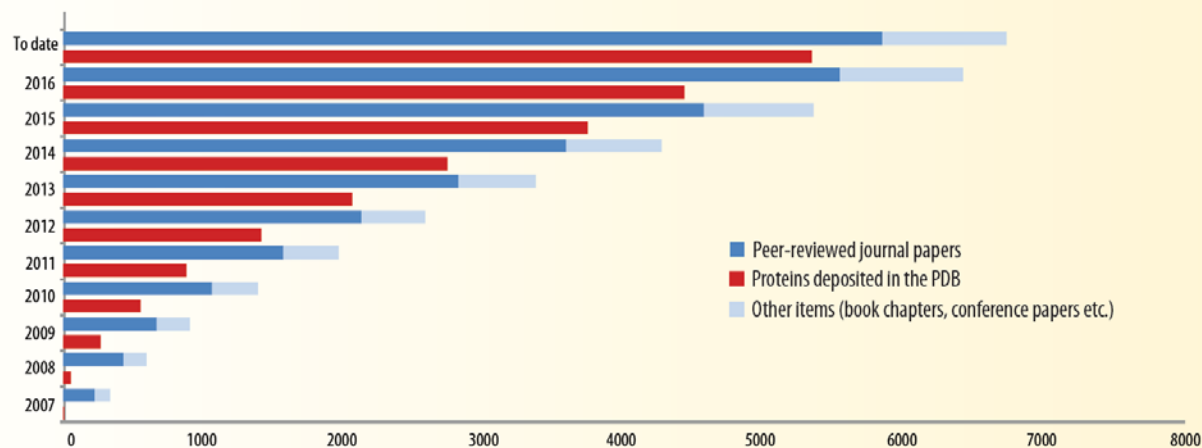


proposals and user visits:



journal papers and protein structures:

Cumulative number of items in Diamond Publications Database by our scientists and users and cumulative number of protein structures solved



Examples of industrial use of Diamond

Engineering



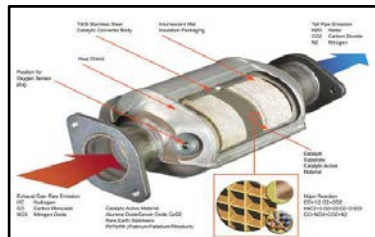
Rolls-Royce
Strain scanning in
aerospace
components

Consumer products



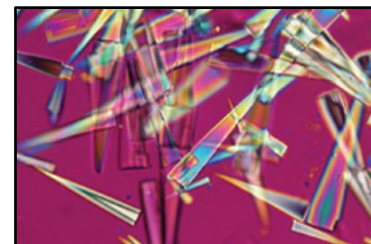
Unilever
Microstructure in
a new hair care
product

Catalysis



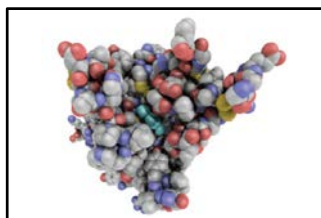
Johnson Matthey
Platinum
speciation in three
way catalysts

Fuel additives



Infineum
Crystallisation
processes in biofuels

Drug design



Heptares
Designing drugs
for Parkinson's
disease treatment

Drug manufacture



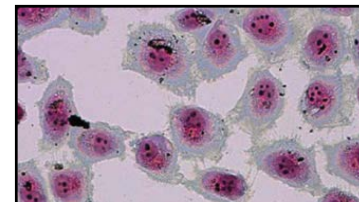
GlaxoSmithKline
Controlling a
manufacturing
process

Medical devices



NHS
Understanding
failure in MOM hip
replacements

Diagnosing disease



NHS
Speeding up
cancer diagnosis
using IR

A personal interest in the Workshop:

Proc. 6th International Conference on Magnet Technology, Bratislava, 1977

A FULLY AUTOMATED FACILITY FOR MAGNET FIELD MEASUREMENTS AT THE DARESBUY LABORATORY

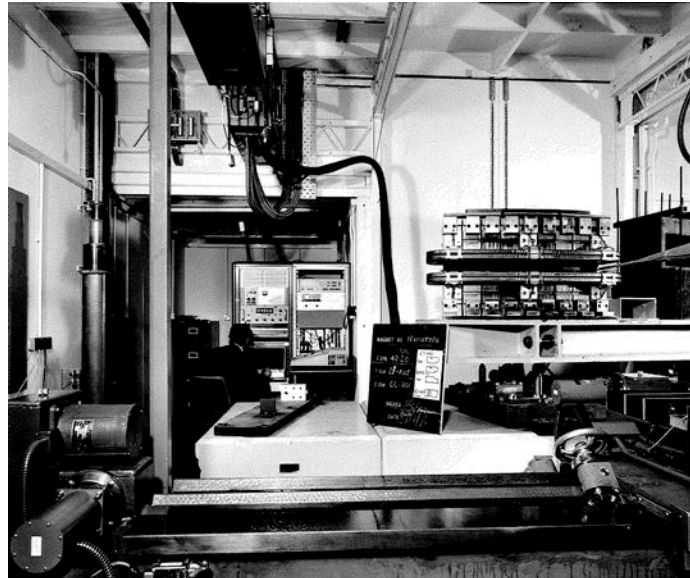
by

M.W. Poole and R.P. Walker

Daresbury Laboratory, Science Research Council, Daresbury, Warrington WA4 4AD, U.K.

Summary

An improvement programme to the magnet measuring facility at Daresbury Laboratory has now been completed. The main feature of the Hall probe system is the high degree of automation in data acquisition, storage and analysis, which has been achieved by the use of a dedicated mini-computer and a data link to the main Laboratory computer.



Proceedings of the 7th International Conference on Magnet Technology, Karlsruhe, March 1981

IEEE TRANSACTIONS ON MAGNETICS, VOL. MAG-17, NO. 5, SEPTEMBER 1981

HALL EFFECT PROBES AND THEIR USE IN A FULLY AUTOMATED MAGNETIC MEASURING SYSTEM

M.W. Poole and R.P. Walker



ELSEVIER

Nuclear Instruments and Methods in Physics Research A 376 (1996) 275–282

**NUCLEAR
INSTRUMENTS
& METHODS
IN PHYSICS
RESEARCH**
Section A

A stretched wire system for accurate integrated magnetic field measurements in insertion devices

Dino Zangrando, Richard P. Walker*

Sincrotrone Trieste, Padriciano 99, 34012 Trieste, Italy

Received 12 February 1996

**Welcome, and
Enjoy the Workshop !**

