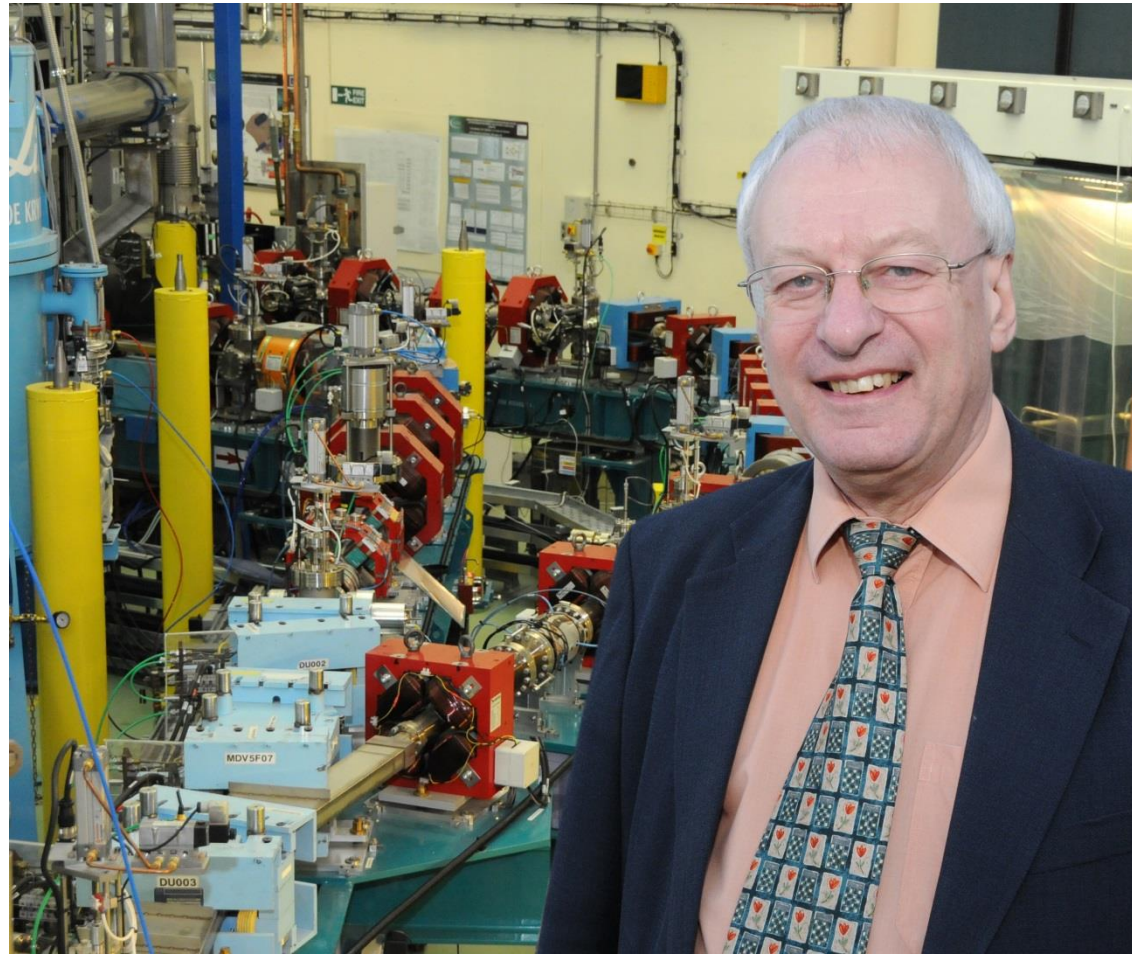


# Mike Poole

Career Highlights and (a few) Disappointments



# Early Years

1966 Graduated and joined DNPL, employed by SRC



# Early Years

1966 Graduated and joined DNPL, employed by SRC

Beam Physics Section (NINA 5GeV synchrotron e- and photon beams) (Tom Aitken)

1<sup>st</sup> project – beam loss monitoring ‘glass bombs’ !



# Early Years

1966 Graduated and joined DNPL, employed by SRC

Beam transport codes (dropped card: 1 in 2000 identified in wrong place! 4 weeks to find!)

Self taught beam dynamics

Compton Backscatter feasibility studies (not pursued)

High power Faraday Cup designed/built

Hydrogen target venting simulation

Few external links/collaborations mean low profile  
Daresbury !

Accelerator publications almost non-existent

NB Vic Suller joined 1 month later

# Specialisation (1969 onwards)

Design, construction and testing of electromagnets  
(later: superconducting and permanent magnets too)

NINA Programmed Quadrupoles (N Marks)

- Tune control in energy ramp

- 50Hz AC cycle

- Air cooled, laminated

- High silicone steel, epoxy/glass coils etc

- Successful project – skills boost

  - (industrial and contractual skills training too)

SRS Design Study published and Project approved 1975

My big chance !

# Mike & Neil Marks at the NINA control desk



Richard Walker can also be seen assisting – which puts this photo at 1977.

# SRS Construction (1975-81)

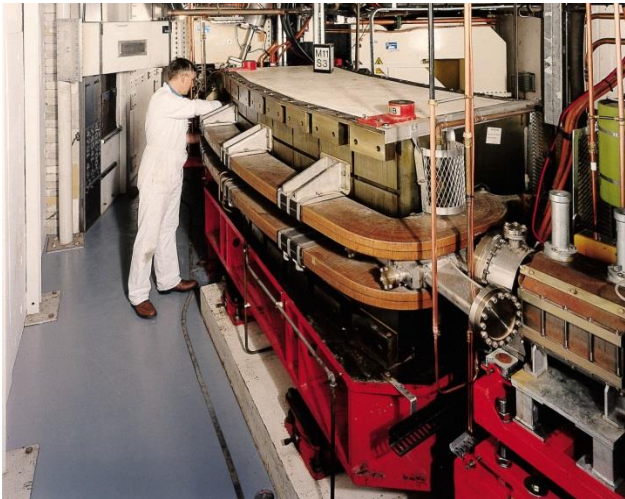
Responsible for delivery of all magnet systems on  
booster and storage ring

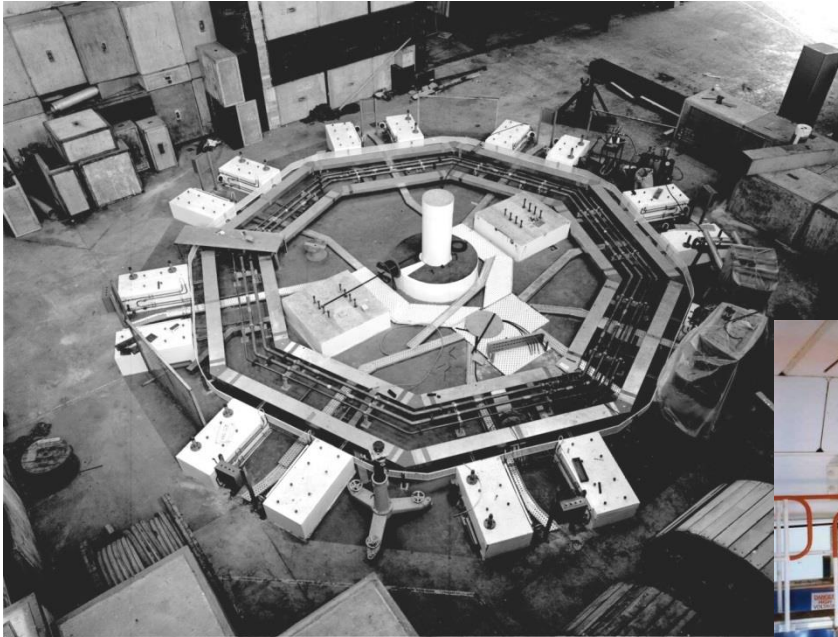
10 Hz Booster Combined Function/Alternating Gradient

Slow ramped main ring dipoles, quadrupoles, sextupoles and multipole  
correctors (RPW)

Laminated magnets: glued (epoxy) + glass Major contracts

Magnet measurement facilities, fully computer controlled (RPW)  
(world first ?) Hall plate calibration







# SRS Construction (1975-81)

Major role in SRS Commissioning  
Broad learning experience (AP)  
Established publication habit



International profile and improved publications (self + DL)  
Promoted to Head of New Accelerator Projects Group (1980)

# ESRF design contributions (Blue Book)



# SRS Upgrades

SCW 5T

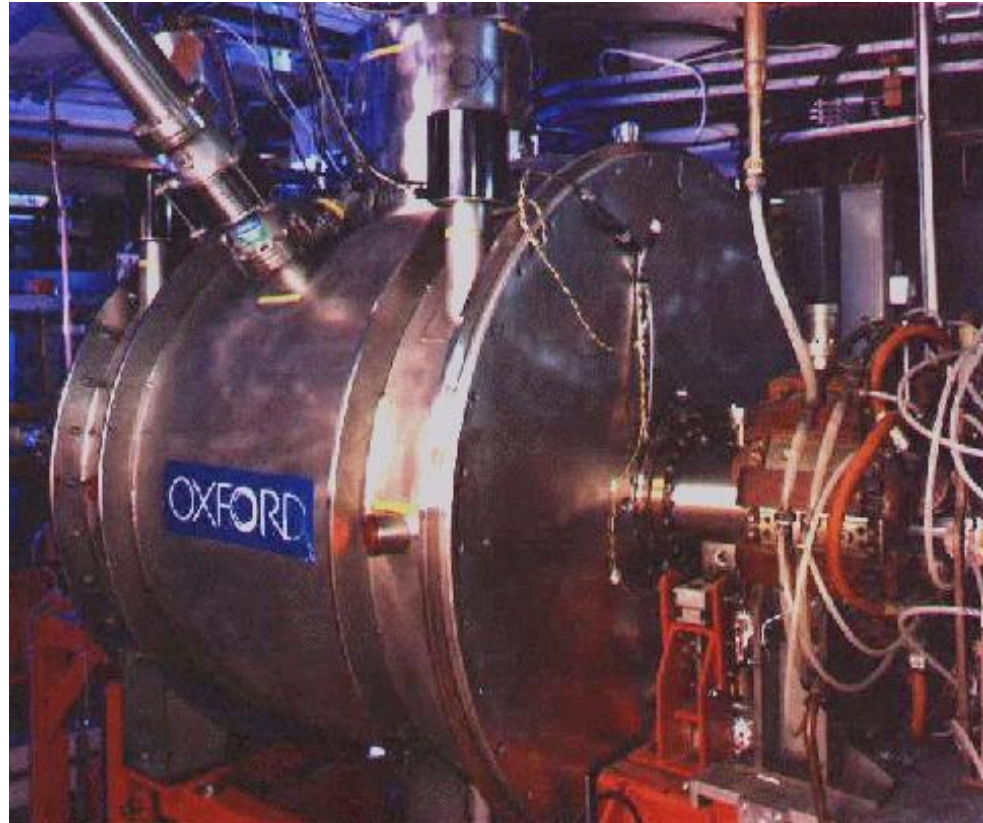
RAL collaboration. V expensive !

Installed 1982

SCW 6T

Commercial contract (OI) – Project Leader

Installed 1992

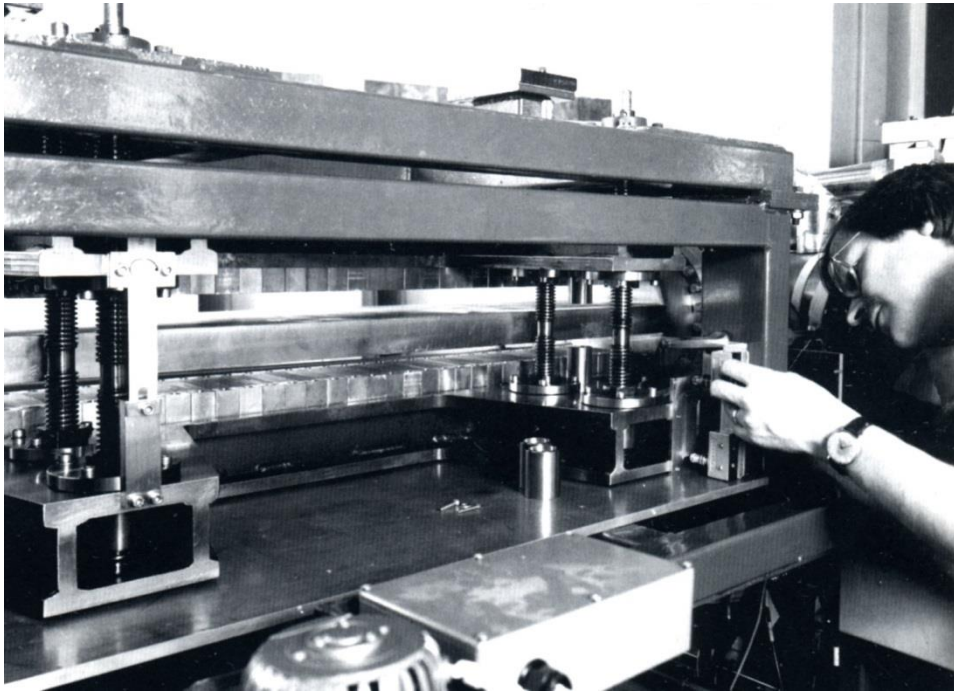


# SRS Upgrades

PMU

Design/deliver R&D PMU on SRS (1985) RPW

Appointed Daresbury Accelerator Physics Group Leader (1984)



# SRS Upgrades

HBL (SRS2) Major lattice evolution – high brightness  
New ring magnet systems  
Headed SRS-2 commissioning (1986)



Later: project leader 2T MPW additions (1996-98) JAC

# Compact Source Development

AP leader OI contract development of HELIOS (1985-94)  
700MeV SC dipoles

Assisted sale to IBM and later lead commissioning

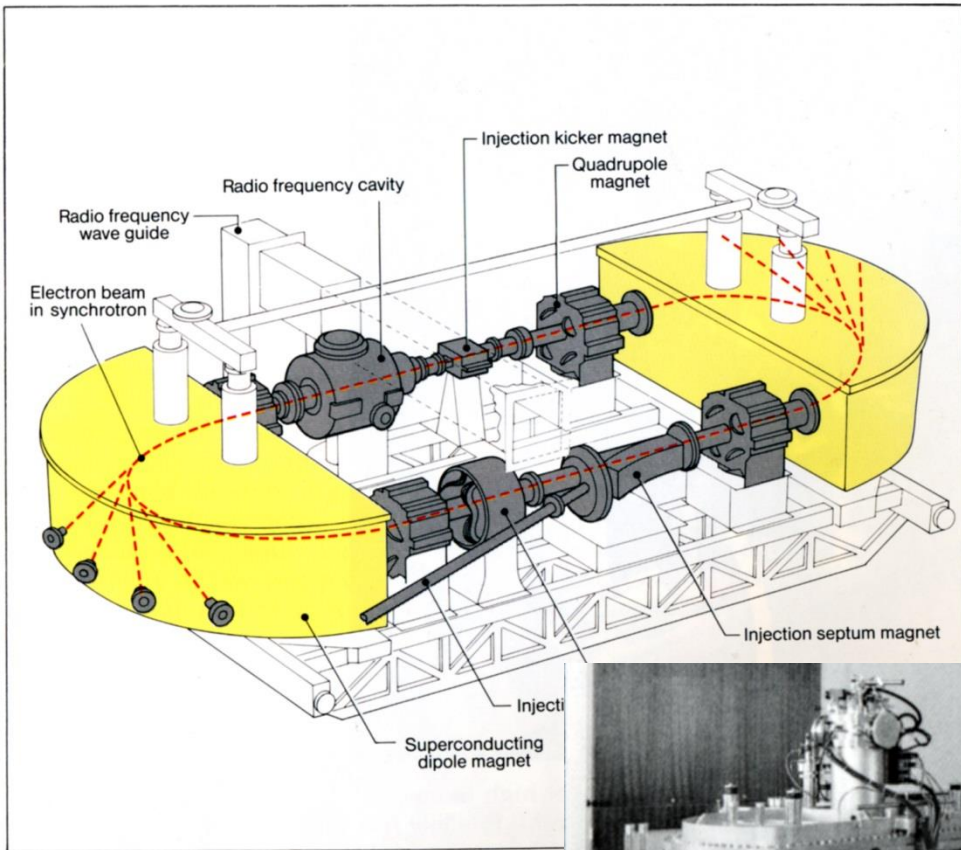
Substantial Royalties earned for SERC (and staff)

2001 CLRC Inventors Award

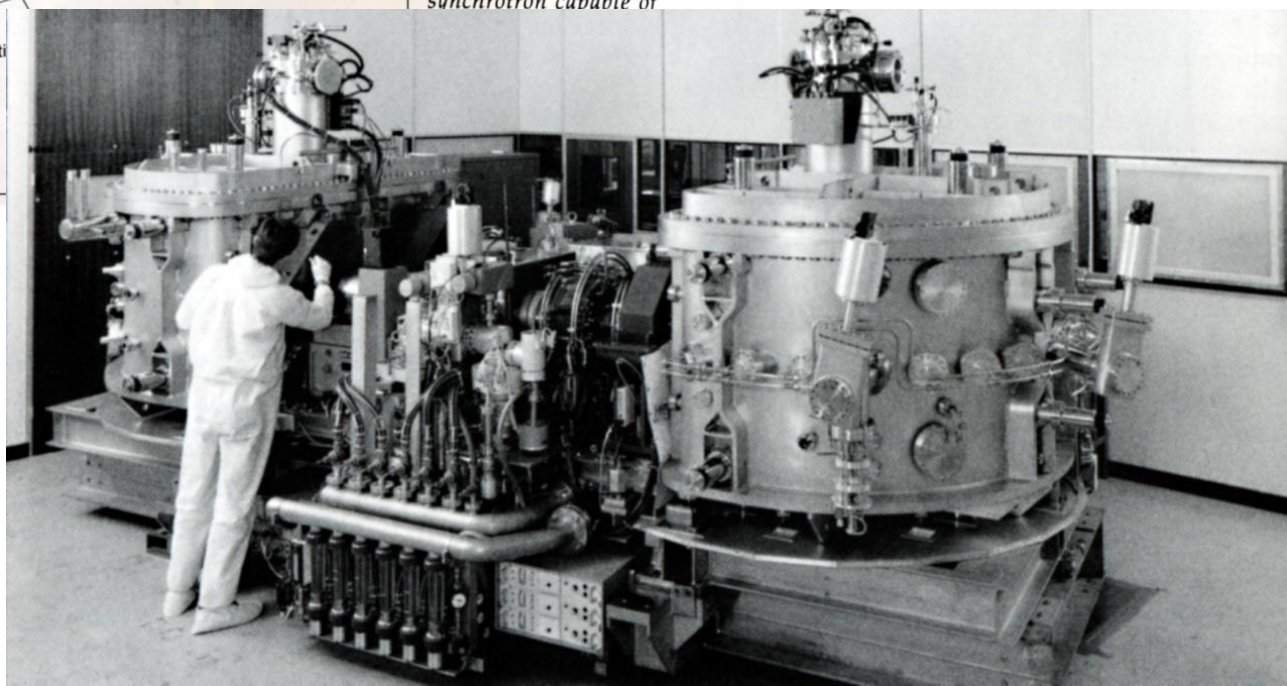
HELIOS 2 sold to Singapore university

No more      Almost a gold strike !

Note: some OI staff took their new skills to DIAMOND !



*Diagram of a superconducting synchrotron capable of*



# Free Electron Lasers

Long term advocate (since 1979) !

Failed Daresbury proposal (1980) despite international support HEI work ?  
Funding later awarded to UKFEL collaboration (1982) DL/Glasgow/Heriot Watt

Advanced 5m 4 stage undulator magnet from DL (RPW) Technology mastery

Useful gain achieved (1985) but no oscillation - terminated 1986 (bad linac)

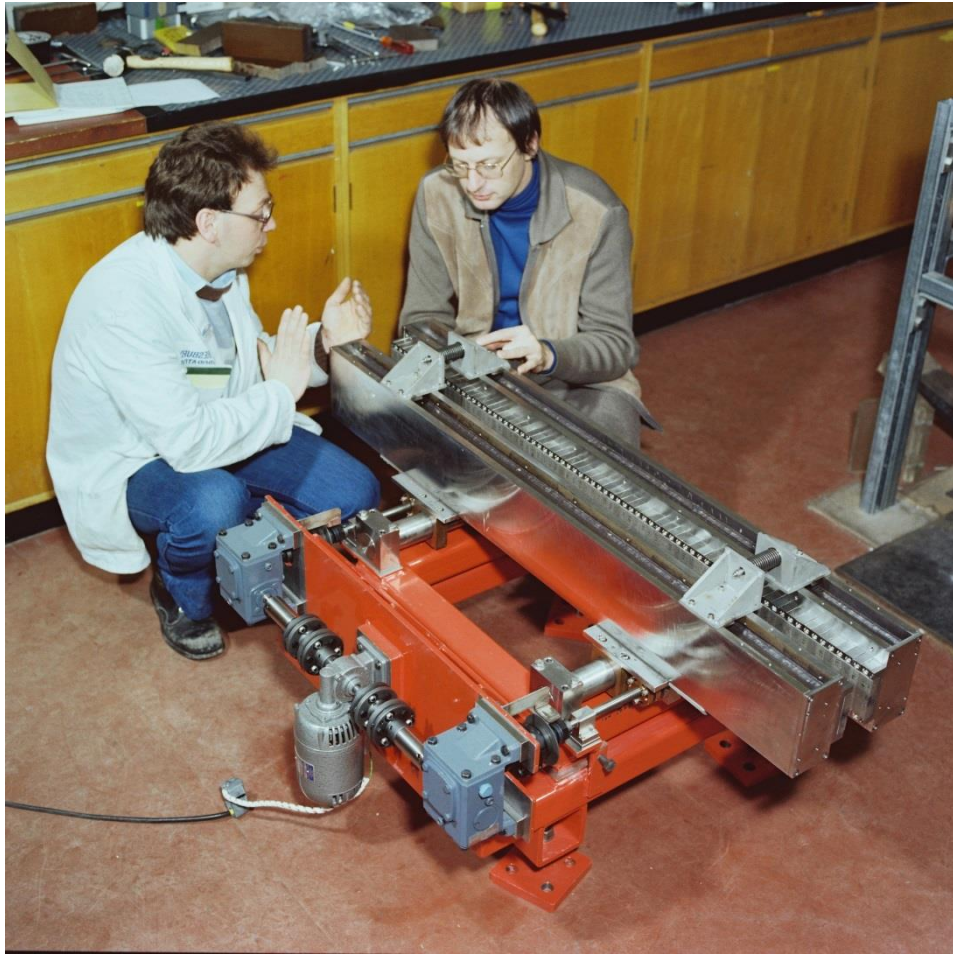
Negotiated transfer of undulator (split in 2) to FELIX project Nieuwegein (NL)  
FELIX international advisor 1988-95 Lased 1992

Oxford electrostatic FEL proposal (1990) not funded

Collaboration in World record 190nm SRFEL at Trieste 1999-2002 (RPW)

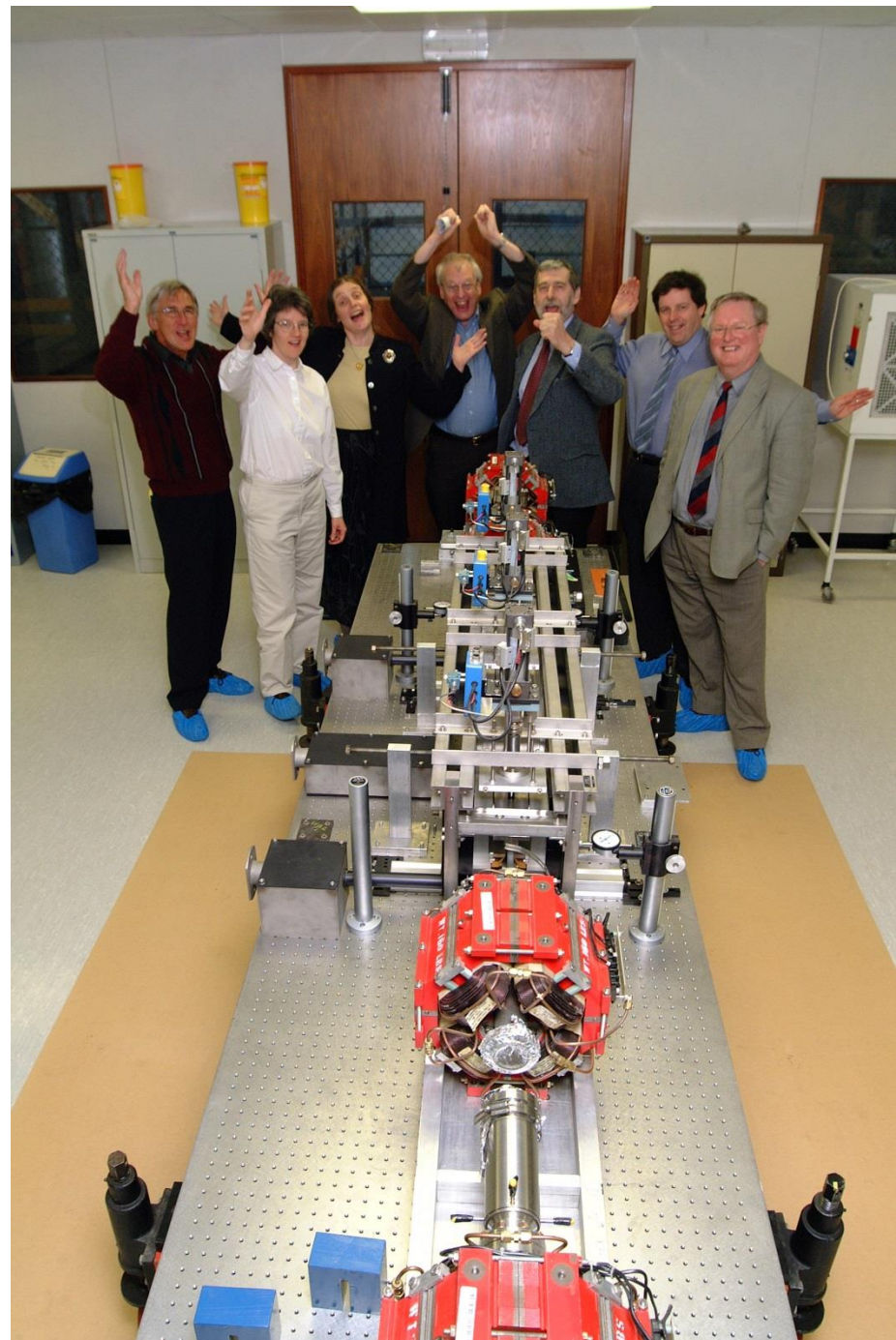
ALICE FEL delivery - after 30 year wait !!!

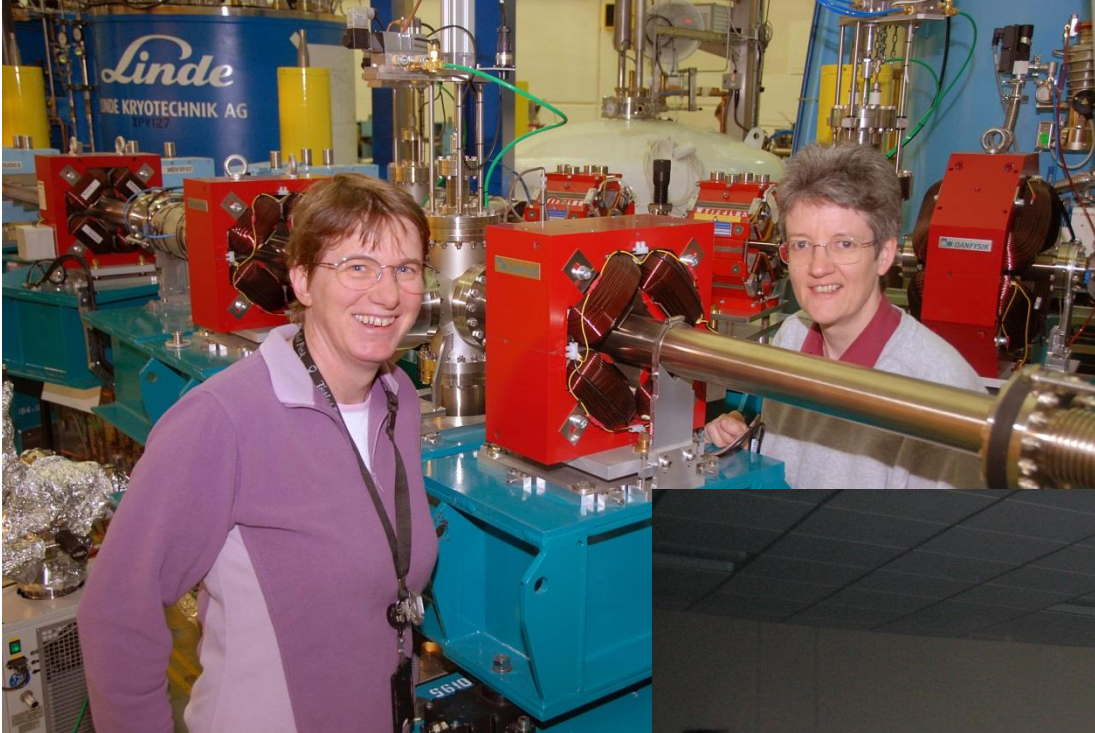












# Other Roles and Challenges

ESRF Purchasing Committee (UK Rep) 1988-92

Vice-Chair, SOLEIL Intl Advisory Committee 2001-08

MAC: Sincrotrone Trieste 2002-2010

SAC: FOM Plasma Physics Institute 2004-10

Chair, ESFRI FEL Working Group 2001-05

Leader, Technology WP, LC-ABD 2004-07

Elected to EPS Inter-Divisional Group on Accelerators 1996-2002

Associate Editor, Phys Rev ST-AB 2002-08

Elected to IOP Council 2008

Elected PAB Chair 2008-12

Lecturer: CAS(4) JUAS Nordic School ERICE CI

Director, SERC Career Development Scheme for Scientists 1992-94

1992: Joint UK Research Councils Individual Merit Promotion (3 knights !)

# Major Project Proposals

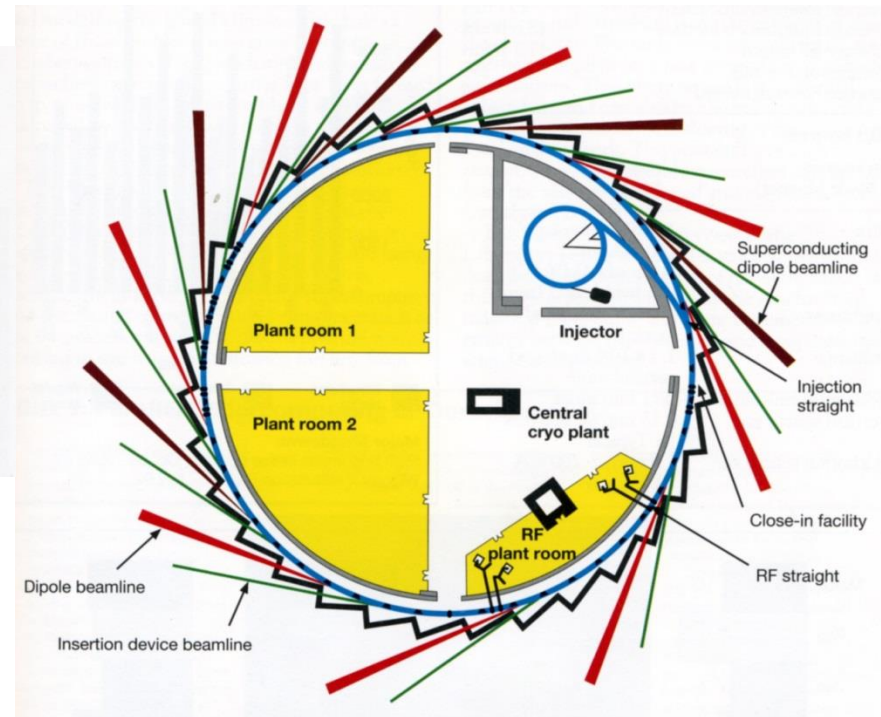
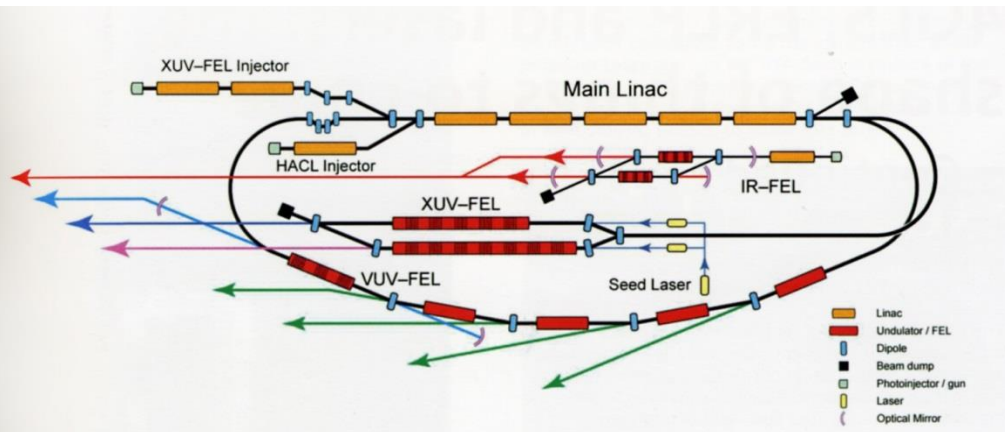
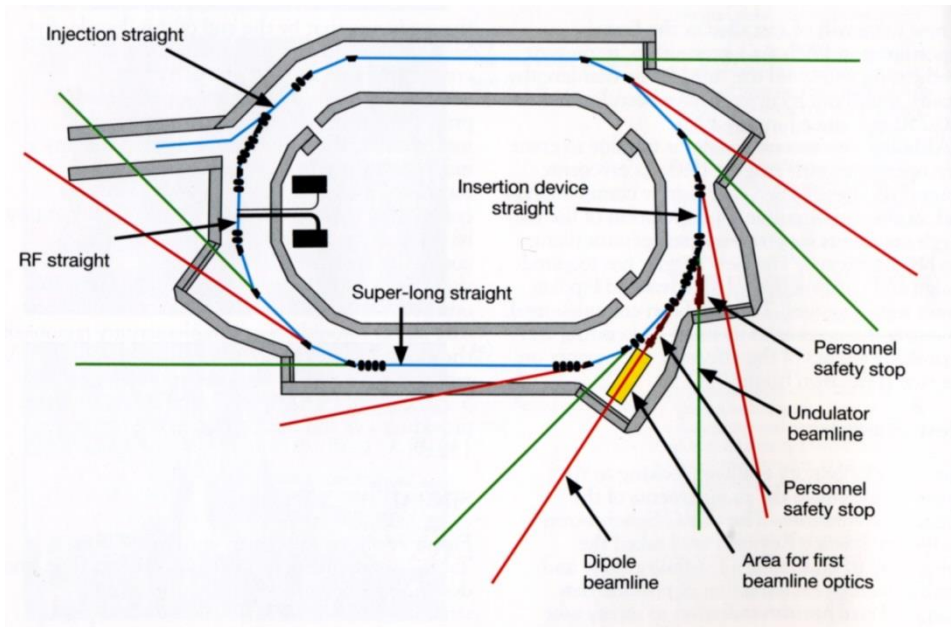
DAPS AP Leader 1989-93

4GLS and ERL Prototype (ALICE) 2002

SRS-X 1991 Early next generation studies

Diamond 1993-2003 Green Book

NLS Proposal 2007-2010







# Final Contributions

ASTeC Director (2003-10)

Visiting Professor, Liverpool Physics Dept (2003-16)

Honorary Scientist, STFC Daresbury Lab

Distinguished Affiliate, Cockcroft Institute

Fellow, European Physical Society

Fellow, Inst of Physics

Cockcroft Institute co-founder





*ASTeC Group Photo  
Monday 10th May 2010*



# Thanks for your attention

