

# A man, his dreams, his dedication: a tribute to Bob Cywinski

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Huddersfield, April 6, 2016











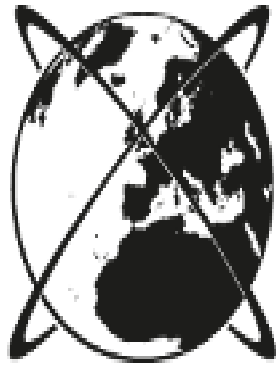












# EuroScience Open Forum Manchester 2016

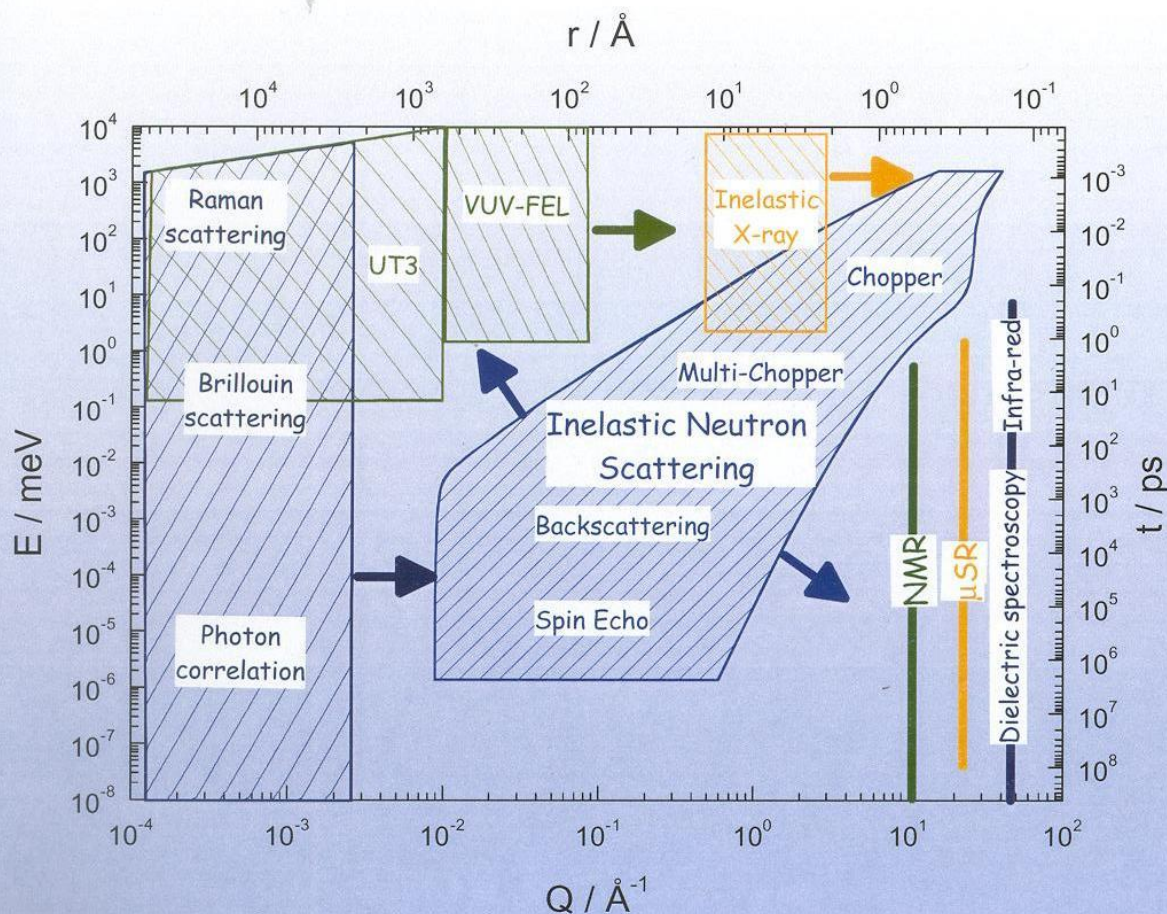
- **Science programme; ~100 sessions, plenary and keynote speakers**
- **Science to Business programme**
- **Career programme**
- **Science in the City programme**
- **Exhibition**

**ESOF**  
JULY 23 - 27 **16**



# Complementarity of Neutrons

The European Spallation Source



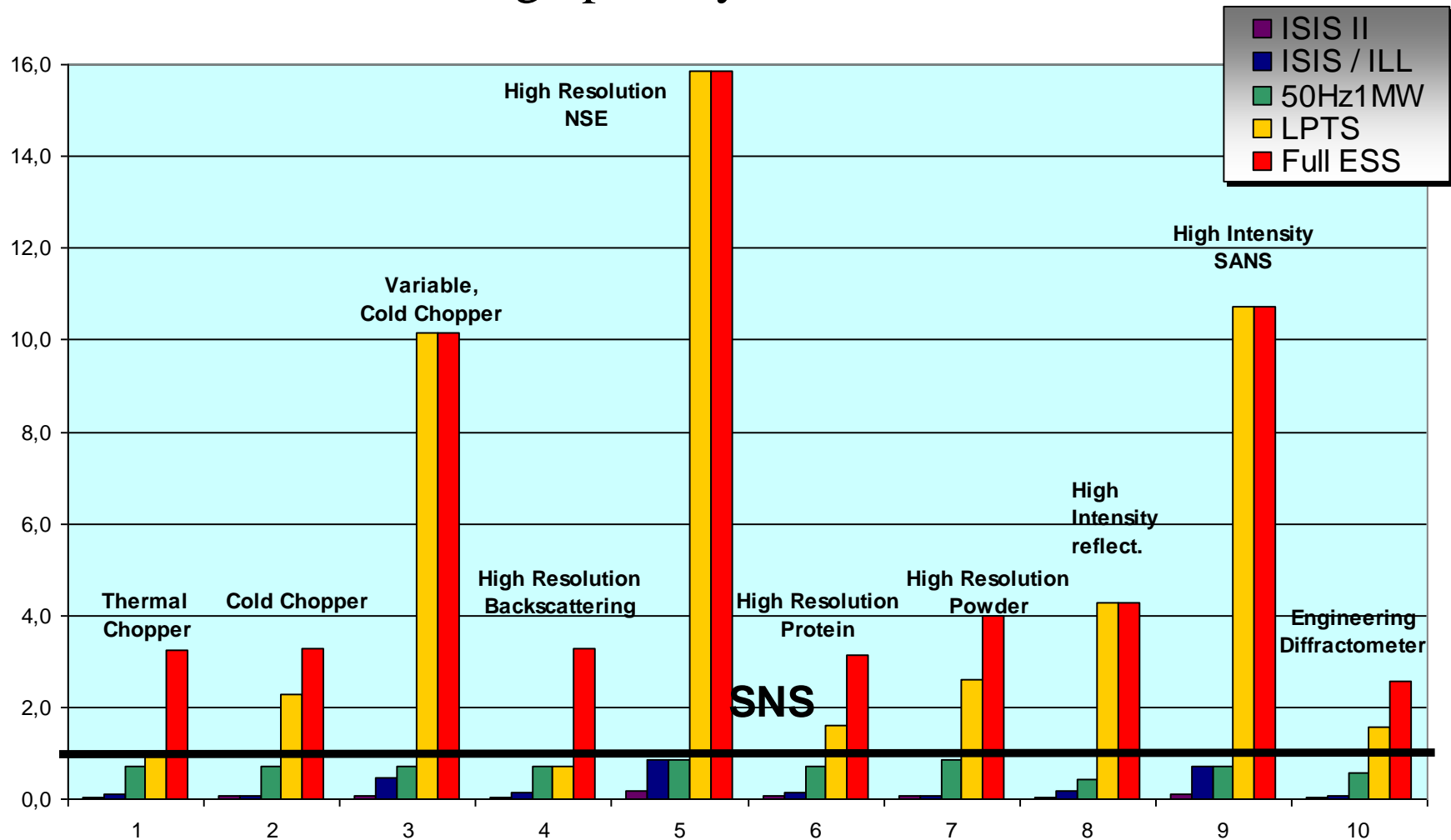
**The range of inelastic neutron scattering and other experimental techniques**

## Complementarity is obvious:

with ESS and the FEL/XFEL the ranges will extend in the directions indicated, filling in the 'missing areas'. Note that the diagram covers typical atomic length and time scales. Techniques that do not directly provide distance information are indicated only as bars along the time axis. The time scale only refers to equilibrium phenomena. Non-equilibrium effects, such as those studied in 'pump-probe' experiments at very short times (fs) will always remain the domain of photon based techniques. At ESS 'pump-probe' experiments will be possible down to micro-seconds, covering the longer length and time scales important in soft condensed matter and biological systems.



# 1. Source strength benchmarked against SNS (1.4 MW) high priority instruments



The black line indicates the SNS reference







# Next steps: ESS-I(nitiative)

- 2004 -2007 Keeping ESS alive
- Scientists, sites
- Based at ILL
- ESS-Yorkshire was partner

# Next steps ESS: ESFRI Roadmap 2006

Materials sciences	ELI	150	2013
	ESRF Upgrade	230	2007/2014
	ESS	1050	2017
	European XFEL	986	2006/2015
	ILL 20/20	160	2012/2017
	IRUVX-FEL	760	2006/2015
	PRINS	1110	2008/2013

**October 2006**

**Editorial Science Magazine: Dark horse ESS re-enters the race**



# Next steps ESS 2007 onwards

- FP7 “Feasibility” study 2007-2010: 5 M€
  - Bob responsible for publicity material
- Warring sites: Lund, Bilbao, Debrecen
- Site Review Group established by ESFRI; 2008
- 2009: site decision
- 2013: decision to start
- 2014: groundbreaking
- 2019: first neutrons



# Finally

- Teaching
- Accelerators
- Gender

THANK YOU, Bob (and Sue)