

The Delft reactor with Oyster: a multi-purpose tool



NMI3 kickoff, March 2012

1

Main OYSTER changes

- Power increase (from 2 to 3 MW)
- Installation of cold neutron source
- New instruments
- Improved existing instruments

New instruments

- Neutrons
 - Neutron Diffraction Facility (50 % complete)
 - Cold Neutron Irradiation Facility
 - Scanning Neutron Microscope
 - SANS (75 % complete)
- Positrons
 - Positron Annihilation Lifetime Spectroscopy

Improved instruments

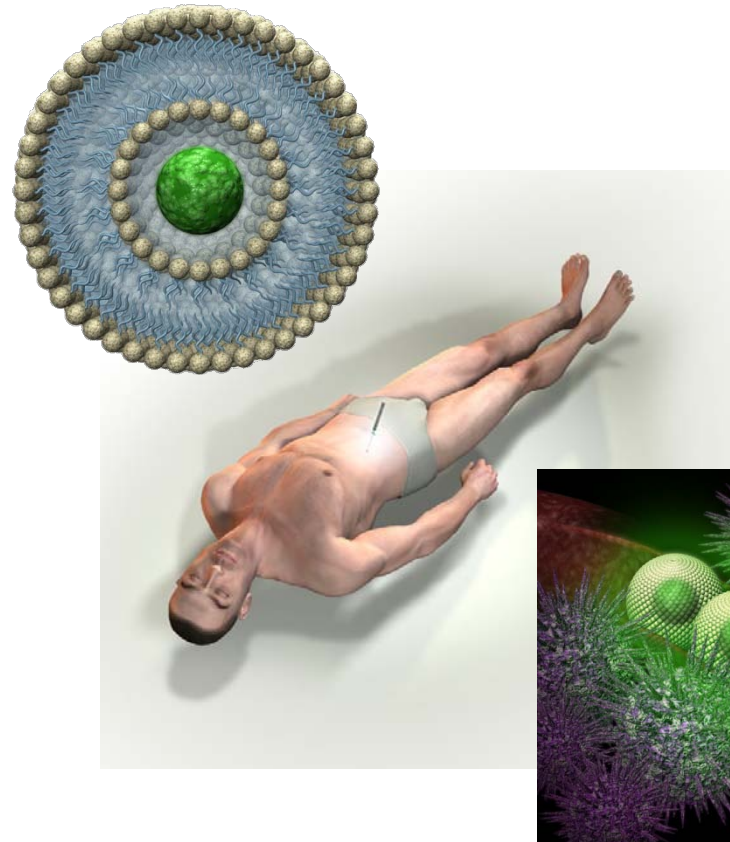
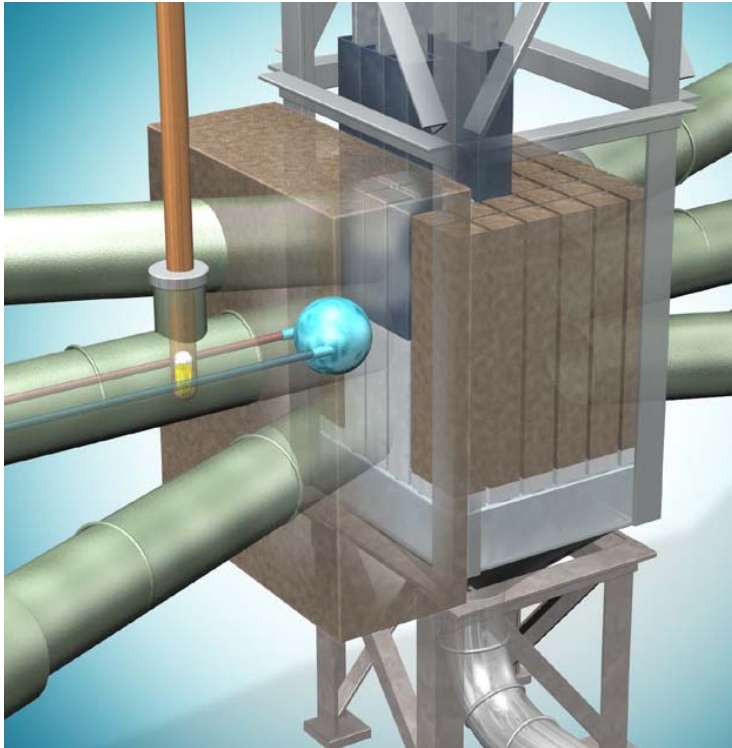
- Neutrons
 - Spin-Echo Small-Angle Neutron scattering
 - Poly-axis Neutron Depolarization Analysis
 - Big Sample Neutron Irradiation system
 - Reflectometer for Surfaces and Interfaces
 - Neutron Depth Profiling
- Positrons
 - 2-Detector Angular Correlation Annihilation Radiation



We help you see materials from the inside!

Cold Neutron Irradiation Facility

Close to the cold source, high neutron/gamma ratio

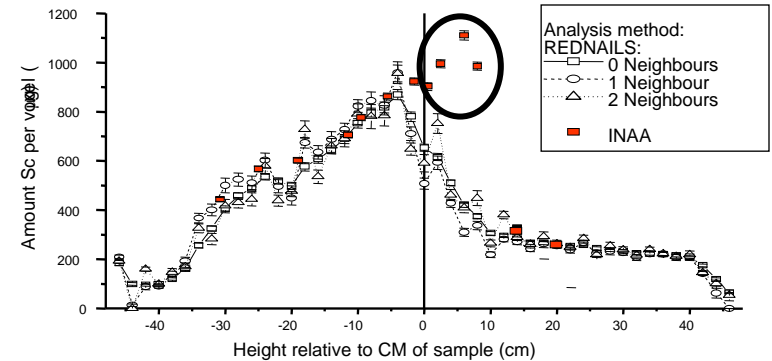
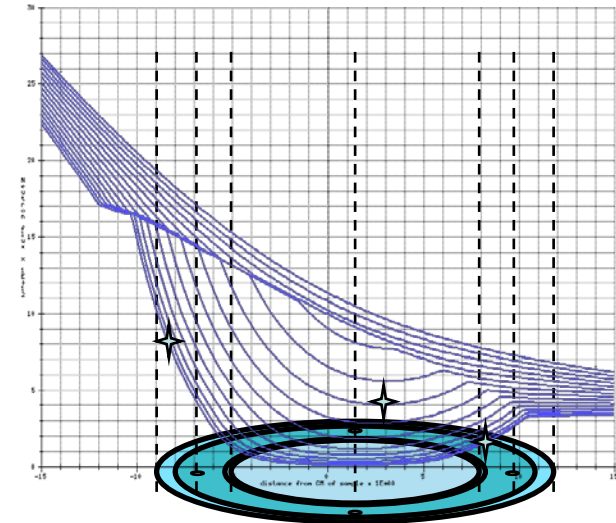
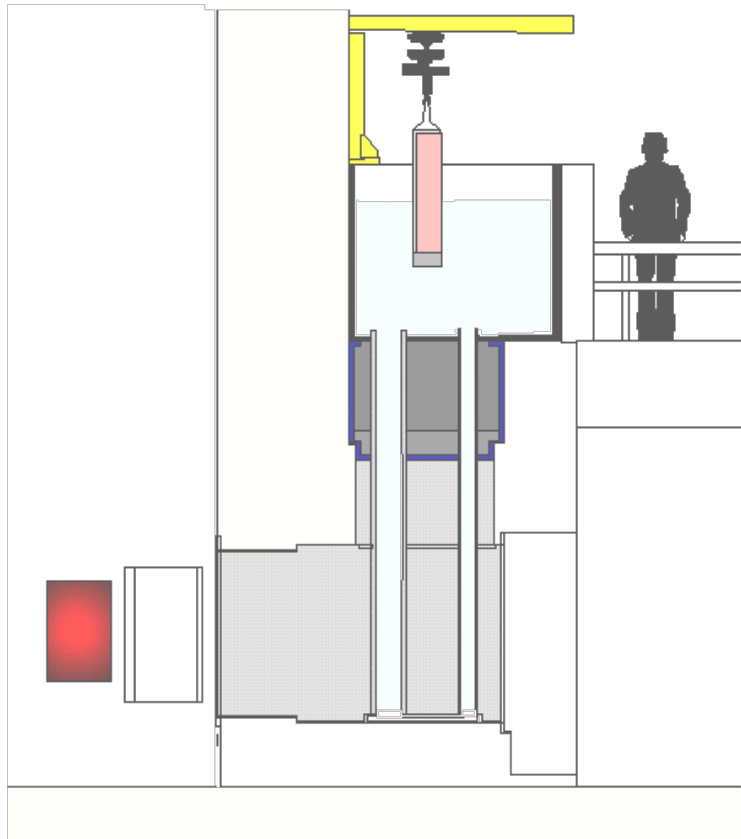


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6

Big Sample Neutron Irradiation System

More neutrons for more sensitivity

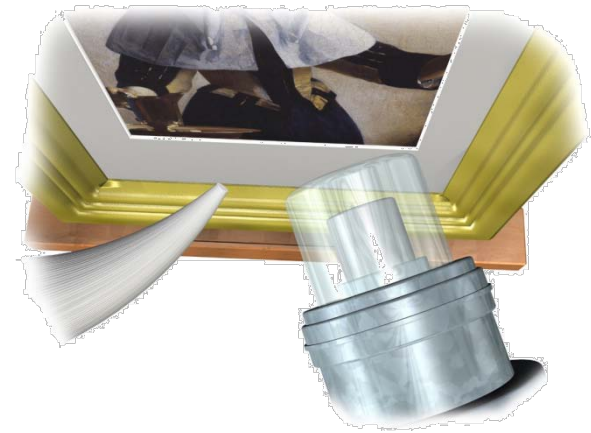


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7

Scanning Neutron Microscope

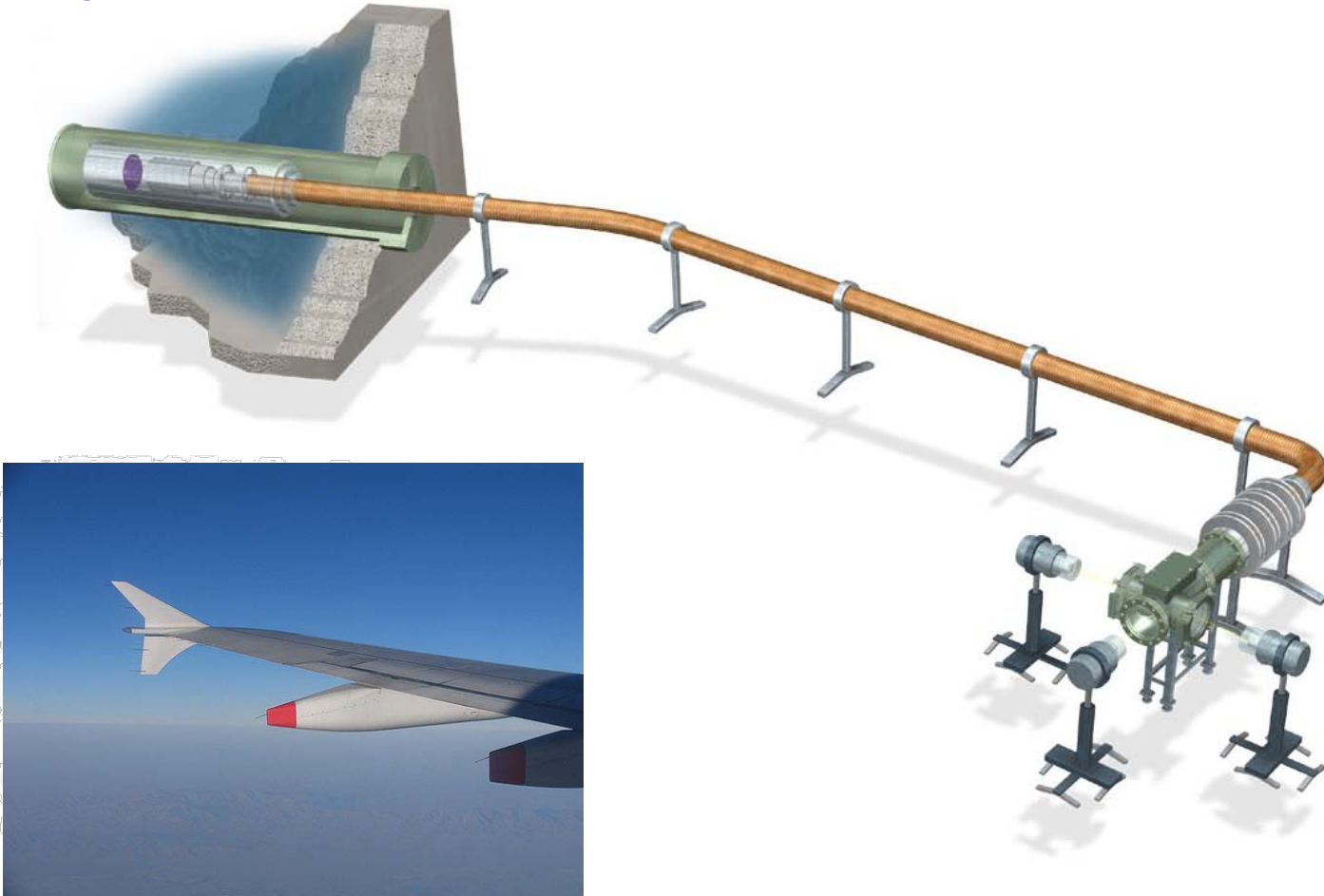
Trace-element analysis in a tight spot



Spotsize diameter: 0.2 mm

Positron Annihilation Lifetime Spectroscopy

Seeing defects in materials from the inside

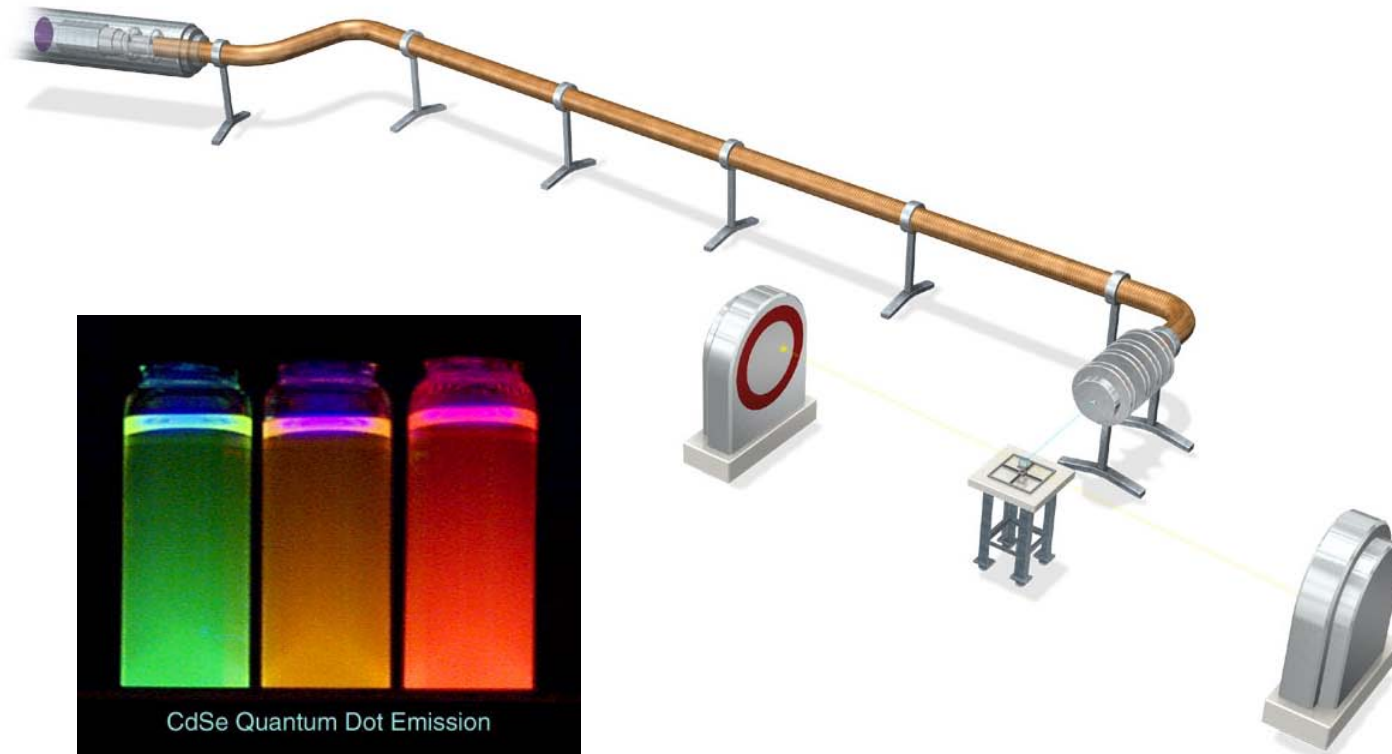


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9

2-Detector Angular Correlation Annihilation

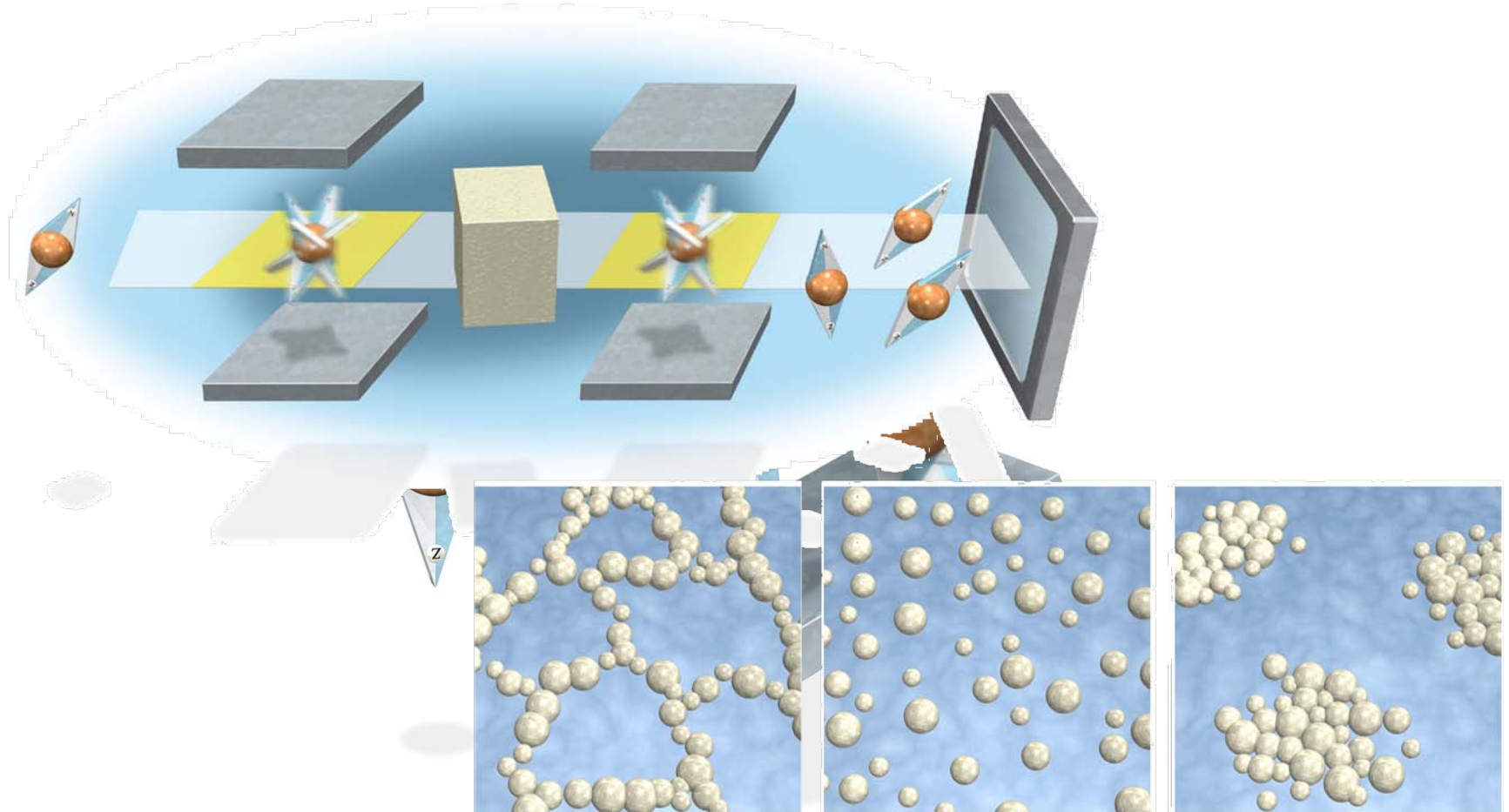
The brighter the beam, the better



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10

Spin-Echo Small-Angle Neutron Scattering Measurements in seconds



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11

Neutron Diffraction Facility

Hydrogen and Lithium targeted

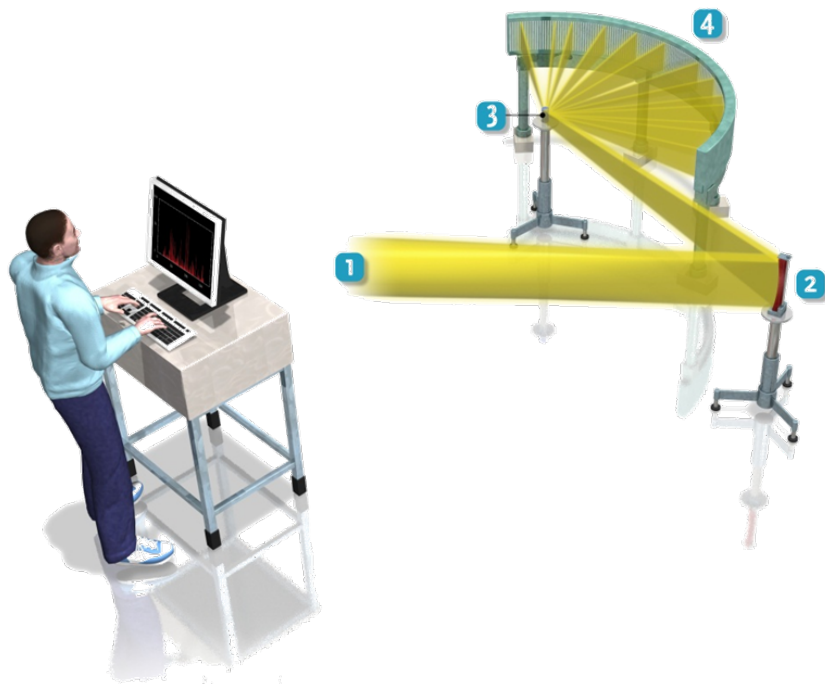
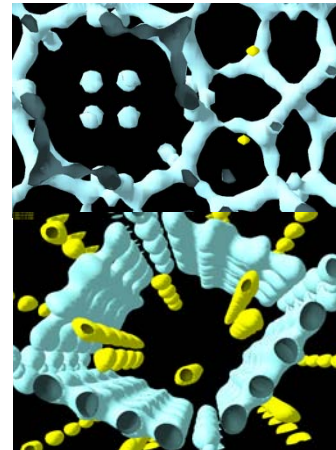
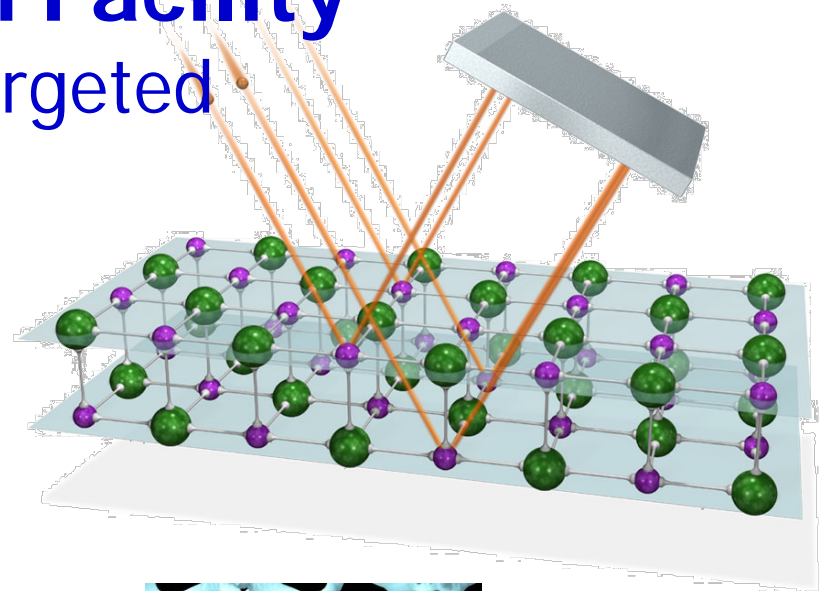


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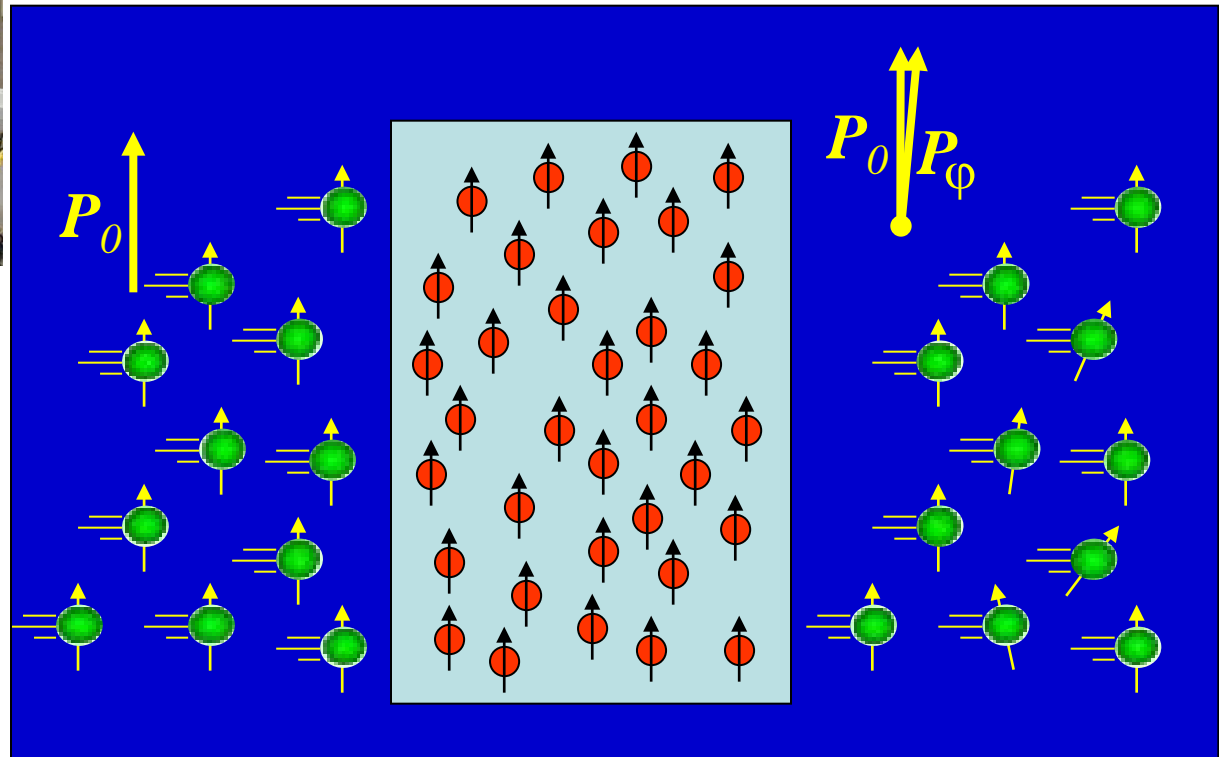
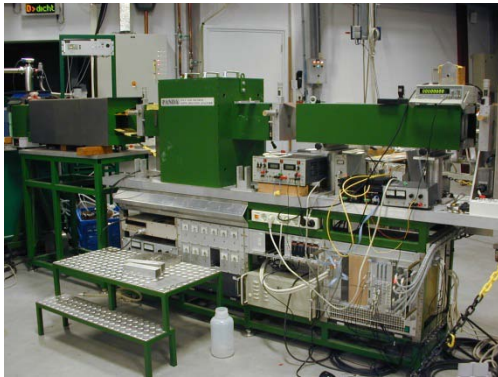


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12

Poly-axis Neutron Depolarisation Analysis

microsecond and sub-micrometer resolution



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13