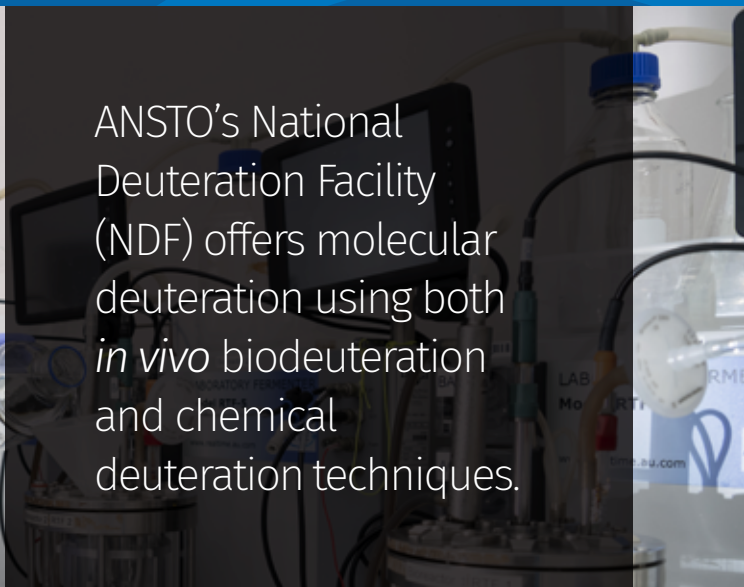


National Deuteration Facility (NDF)



ANSTO's National Deuteration Facility (NDF) offers molecular deuteration using both *in vivo* biodeuteration and chemical deuteration techniques.



NDF provides the facilities and expertise to produce molecules where all or part of the molecular hydrogen is deuterium (^2H or D). This enables complex investigations of the relationship between the structure of molecules and their function using neutron scattering, Nuclear Magnetic Resonance and other types of spectroscopy.

The NDF is the only one of its kind in the Southern Hemisphere.

Applications

Health, pharmaceutical and drug delivery research

Energy and gas storage materials

Biopolymers and biotechnology

Thin film nanotech devices

Food-lipid digestion

Molecular electronics

Structural biology

Communications and electronics

Friction modifiers studies

Capabilities

Saturated fatty acids, alcohols, bromides, amines, aldehydes, thiols, alkanes

Partial and perdeuterated recombinant proteins

Saturated diacids and bifunctional surface active molecules

Double and triple labelled recombinant proteins

Deuterated silanes

Unsaturated fatty acids (e.g. oleic acid)

Membrane protein detergents (e.g. DDM and OG)

Glyme and glycol ethers

Deuterated surfactants including ionic and non-ionic

Lipids including glycerides; phospholipids (e.g. DOPC and POPC); and selective deuteration of lipids (head deuterated, tail deuterated and fully deuterated)

Aromatics and heterocyclics

Compounds for organic light emitting diodes

Compounds for solar cells Electrolytes for batteries

Biopolymers – cellulose, chitosan, chitin, PHAS

PE77 reference material for isotope-ratio mass spectrometry

Facilities

Ten laboratories and instruments including Nuclear Magnetic Resonance Spectroscopy (NMR), Liquid Chromatography - Mass Spectroscopy (LCMS) and Fourier Transform Infrared (FTIR) Spectroscopy

Access

Access to the NDF is merit-based through a proposal program. Accelerated or commercial access can be provided subject to service charges.

Visit www.ansto.gov.au/useraccess for more information.

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NCRIS
National Research
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An Australian Government Initiative

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