

Electron spin resonance (ESR) spectrometers

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Note that ESR is often referred to by the alternative acronym of EPR (electron paramagnetic resonance).

The suite of ESR spectrometers provides the following measurement configurations:

- conventional and pulsed ESR employing an electromagnet (0 – 1.6 T) and a liquid helium flow cryostat (4.2 – 300 K).
- pulsed ESR employing a ^3He - ^4He dilution refrigerator (down to 50 mK) and a superconducting magnet.
- electrically-detected magnetic resonance (EDMR) with capability of sensing the resonance of fewer than a hundred phosphorus impurity atoms in a silicon wafer.

System for conventional and pulsed ESR (4.2 - 300 K, 0 - 1.6 T)



EDMR spectrometer (under development; measurements currently conducted at the ANU's Research School of Chemistry)



Low temperature ^3He - ^4He dilution refrigerator platform employed for pulsed ESR down to 50 mK.

