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RESI- The thermal single crystal diffractometer

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RESI is the single crystal diffractometer for medium-sized and complex structures with thermal neutrons.

The diffractometer RESI is designed for high q -resolution, low background and best flux usage allowing optimum measurements of weak diffraction phenomena in a large portion of the reciprocal space on single crystalline samples.

- Structure analysis, bonding theory, electron densities: Due to the interaction with atomic cores and the diffraction angle independence of the atomic form factor, it is possible to measure Bragg scattering up to high diffraction angles.
- Real crystals and compounds of interest for material science are often not perfectly ordered. The elucidation of these real structures requires the analysis of the corresponding diffuse scattering. The diffuse scattering –off the Bragg reflections –is normally differentially weak and distributed continually (anisotropic) in the reciprocal space.
- Modulated structures show satellite reflections at “incommensurable” positions. Both areas require analysis of large portions of the reciprocal space.
- Twinned crystals and multi-domain/multi-phase crystals are often difficult to measure on single-counter instruments. The area detector at RESI allows for easy detection and in many cases separation of reflections in such systems.

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