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"Structure research" activities at MLZ

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Crystal structure defines properties and functionality for different/various classes of materials. In the task of the crystal and magnetic structure determination the neutron diffraction has been proven as a powerful research tool combining more than 100 years development of diffraction techniques (since Max von Laue experiments) along with unique (and well known) features of neutron scattering. A wealth of neutron diffraction instrumentation as a probe of long-range atomic and magnetic orders from single crystal and powder samples at a variety of environmental conditions is available at MLZ, namely high-resolution and engineering diffractometers SPODI and STRESS-SPEC; hot, thermal and cold (macromolecular) single crystal diffractometers HEIDI, RESI and BioDIFF; diffuse instrument DNS and a pool of triple axis spectrometers. A number of new instrumental developments (POWTEX, SAPHIR, ERWIN) are on their way to strengthen diffraction at MLZ even further.
There is a broad spectrum of structure-related scientific activities at MLZ e.g. (i) electrochemical energy storage systems and related materials; (ii) modern ferroelectrics; (iii) multiferroic materials and interrelation of the ferroic degrees of freedom; (iv) new generation engineering and shape memory alloys; (v) biological macromolecules; (vi) rock-forming minerals and glasses. Current contribution aims to present a brief introduction and report on interests, activities and achievements of MLZ Group "Structure Research".

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