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New primary optics for the 'Energy research with Neutrons' option at MLZ.

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The Energy research with Neutrons (ErwiN) instrument is meant to be used for the investigation of energy storage materials, also integrated in complete components and under real operating conditions. Thus, it is possible to scan a large parameter space (e.g. temperature, state of charge, charge rate, fatigue degree) for the investigation of modern functional materials in kinetic and time-resolved experiments. Diffraction data will be obtained from the entire sample volume or in a spatially resolved mode from individual parts of the sample.
The future development of the ErwiN instrument is presented here: Firstly, the plans of replacing the primary beam optics will be revealed to bring this diffractometer to the same level as the high flux and high resolution instrument D20 at the ILL. The upgraded ErwiN is designed for different scenarios: for very fast measurements at medium resolution, for medium fast measurements at higher resolution and also for very high resolutions still at reasonable velocity. The commissioning and integration of ErwiN will enhance the attractiveness for a wider community in energy research as well as materials science while novel methods for the neutron science community will be developed.

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