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Neutrons are ideal probes to study static and dynamic properties of magnetic materials and materials containing heavy and light elements. With the increasing interest in studying slow processes at large spatial scales for example i) in diffusion processes in soft matter samples and ii) the spin dynamics near quantum and thermal phase transitions it is important to develop instrumentation with very higher energy resolution down to the neV regime. TAS- or ToF-spectrometers are not suitable to achieve such high energy resolutions because of the gigantic loss of intensity involved in the selection of the small energy bands. An elegant solution to circumvent the intensity problem is the use of the Larmor precession of neutrons. Despite the significant progress made with Larmor precession techniques, it is still difficult to investigate small samples and samples under extreme conditions such as high pressure and large magnetic fields due to the small intensity. We present a new MIEZE concept using focusing optics before and within the MIEZE setup that allows the illumination of small samples i.e. volumes of a few mm^3. The major advantages are an increase of the intensity at the sample position and a strong decrease of the background because only the sample is illuminated and not the sample environment. Thus, the signal-to-background ratio can be strongly reduced.

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