

New developments in Time-of-Flight Neutron Detectors at Oak Ridge National Lab

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We present details of two neutron detectors that have been recently developed at ORNL to meet the needs of current and proposed neutron scattering instruments. Firstly, we describe an Anger Camera utilizing silicon photomultipliers where resolutions of 600um are routine and even higher resolutions have been measured with brighter experimental scintillators. The Anger Camera is targeted for single crystal scattering instruments and is currently in operation at the four-circle diffractometer at the High Flux Isotope reactor. Secondly, we describe a true time of flight neutron imaging detector based on the Timepix3 sensor with sub 20um resolution where position and wavelength information are recorded simultaneously, making it ideal for use in Bragg Edge experiments.