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## **NESSY – A prototype Neutron Energy Spectrometer for Security**

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A liquid scintillator fast neutron detector has been built at Sheffield Hallam University, which can improve neutron spectrometry for homeland security. This ambitious project utilises an EJ-331 (gadolinium loaded liquid scintillator), which permits differentiation between neutron, gamma and charged particle radiation, and allows the energy of the incident radiation to be determined. The geometry of the detector and dual photomultiplier tube set-up has been designed such that the position of incident radiation can be determined using precision timing. The set-up will be used with a digital pulse processing unit to perform timing and pulse shape discrimination measurements.

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