

NEUTRON MEASUREMENTS ON POLARISING FILTERS AT THE HARWELL LINAC

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Abstract

Test measurements on resonance absorption neutron polarising filters containing Sm^{149} are presented. The temperature dependence of the transmittance was measured as a function of neutron energy using the time of flight method on the Harwell linac pulsed source. The results allowed the polarising efficiencies of a SmCo_5 filter to be determined at temperatures between 0.012K and 0.045K. Preliminary data was also obtained for a filter consisting of a 1% solution of samarium in palladium and gave encouraging results. Some of the practical problems encountered during the measurements are described and implications for future operations on the RAL Spallation Neutron Source discussed. Full details of this work have been reported in RAL-84-118.