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## **NREX and TRISP upgrades**

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TRISP is currently relocated to the guide hall east, and the length of the polarizing neutron guide increases from 10 m to 30 m. Transmission losses of this longer guide are minimized in the thermal spectrum range (1-4 Å) by a ballistic guide with parabolic and elliptic sections at the input and output, each 13 m long. The straight transmission polarizer in the center (4 m length) shows very good performance due to the low beam divergence at the exit of the first parabolic section. This guide design will provide a similar flux at TRISP as before, even with a slight increase at  $\lambda < 2$  Å.

At NREX we installed new sample environment to investigate thin film samples in H<sub>2</sub> or D<sub>2</sub> atmospheres: A gas handling system with remote pressure control (0-1bar), a sample chamber with both neutron and x-ray windows, and a He<sup>3</sup> cryostat (0.5 - 300K) also with neutron and x-ray windows for simultaneous reflectometry measurements. New sample holders with spring loaded electrical contacts permit simultaneous neutron and x-ray reflectometry, without the need to wire-bond the samples. The contact arrangement is of van-der-Pauw type (4 contacts on a square) connected to a relais matrix, such that the current flow and voltage measurement can be freely assigned, either parallel or perpendicular to the external H field, or in crossed geometry for Hall measurements. The voltage is measured by a sensitive lock-in amplifier, and thus very low excitation currents avoiding sample heating are possible.

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