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The completely renewed and upgraded neutron reflectometer at the TU Delft Reactor Institute

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The horizontal time-of-flight neutron reflectometer at the reactor of the Delft University of Technology, The Netherlands, has been completely renewed, relocated, and upgraded and allows for the study of air/liquid, solid/liquid, and solid/air interfaces and is now accessible for researchers from around the globe. Innovations in the redesign include (i) a completely flexible double disk chopper system allowing to choose the optimal wavelength resolution with exchangeable neutron guide sections between the chopper disks to increase intensity, (ii) a movable second diaphragm just before the sample position to better control the beam footprint on the sample and effectively decrease counting times, and (iii) guides along the entire flight path of the neutron reflectometer. The performance of the renewed reflectometer is illustrated with measurements of hydrogen sensing materials, and a comparison will be made before and after the installation of the cold neutron source.

Please select the related topic from the list below

Instrumentation and methods

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