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Reversible switching of surface texture by hydrogen intercalation THOMAS GREBER, THOMAS BRUGGER, HAIFENG MA, Physik Institut, University of Zurich, MARCELLA IANNUZZI, Physikalisch Chemisches Institut, University of Zurich, SIMON BERNER, Physik Institut, University of Zurich, ADOLF WINKLER, Institute of Solid State Physics, Graz University of Technology, JÜRG HUTTER, Physikalisch Chemisches Institut, University of Zurich, JÜRG OSTER-WALDER, Physik Institut, University of Zurich — The interaction of atomic hydrogen with a single layer of hexagonal boron nitride on rhodium [1] leads to a removal of the *h*-BN surface corrugation within the 3 nm unit cell. The process is reversible as the hydrogen may be expelled by annealing to about 500 K whereupon the nano-texture is restored. This effect is traced back to hydrogen intercalation. It is expected to have implications for applications, like the storage of hydrogen, the peeling of sp²-hybridized layers from solid substrates or the control of the wetting angle, to name a few.

[1] Boron Nitride Nanomesh, Corso et al. Science, 303 (2004) 217.

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