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【205】Single-domain growth of h-BN on a ”quasi-liquid” Pt(110) surface

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The growth of hexagonal Boron Nitride (h-BN) monolayers on Pt(110) was investigated by STM, LEED and DFT calculations. Borazine exposure at T < 1100 K yields an h-BN film with defects and domain boundaries on a rough Pt surface as previously reported by Achilli et al. [Nanotechnology **29** (2018) 485201]. Deposition at T > 1100 K results in a perfect single-domain h-BN layer on a flat Pt(110) surface. The lattice misfit is accommodated by converting the (1x2)-missing-row (mr) of clean Pt(110) into a (1xn)-mr reconstruction (n = 5 or 6). This is a rare case of epitaxial growth on a “quasi-liquid”surface where the substrate responds to the adlayer geometry rather than the other way round.

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