Fig. S1. STM image (-2.0 V, 1.0 nA) of a Rh(111) surface that was exposed to a lower-than-saturation exposure of borazine. It shows a boundary region of a nanomesh island in which one can see the transition from uncovered Rh surface to a one- and two-layer BN film. Quite strikingly, the ordered nanomesh forms only behind a disordered transition region. Considering that the film was grown at a temperature of 1070K where BN units are very mobile, this room-temperature image shows a frozen snapshot of the self-assembly process.