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Nanochannel arrays etched into hexagonal boron nitride mesa-membranes by focused ion beam. REMY FULCRAND, SÉBASTIEN LINAS, FRANÇOIS CAUWET, BLAISE POINSOT, ARNAUD BRIOUDE, Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut Lumiére Matiére, F-69622, VIilleurbanne, France — Meso-membranes with highly ordered nano channel arrays have been fabricated by patterning hexagonal boron nitride (h-BN) films using a focused ion beam. The complete experimental procedure will be given in detail form the chemical vapor deposition for h-BN synthesis to its patterning and the final membrane design for nanofluidic experiments. The membranes obtained are characterized at each experimental step by electron microscopy and Raman spectroscopy. The technique is finally applied to fabricate devices in which the only passage for a fluid is a nano channel array etched into a h-BN film.

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