

## **Ion-track based single-channel templates for single-nanowire contacting**

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This work reports a procedure for the fabrication of membranes containing only one single channel with diameter down to 20 nm and with well-defined geometry. Foils of different types of polymer (polyethylene terephthalate (PET) and polycarbonate (PC)) were tested with respect to their suitability as ion-track template for single-nanowire growth. Membranes with one pore were created by the track-etching technique. The pore size was characterized by electrical conductivity measurements in 1 M KCl. Furthermore, we developed also a method for the preparation and electrical contacting of single metallic nanowires. Cylindrical single pores were filled with Bi by electrochemical deposition. The resulting wires, remaining embedded in the polymer foil, are very suitable for measurements of electrical resistance as a function of parameters such as wire diameter and temperature.