

Etched single-ion-track templates for single nanowire synthesis

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Polycarbonate membranes with one pore only are created by the track-etching technique. The shape and size of the pore are determined by the type of etchant as well as by the temperature and etching time. The dynamics of single-pore formation during etching is investigated to determine the breakthrough time and the track-etching rate. The pore is characterized by electrical conductivity measurements and scanning electron microscopy. This kind of template is employed for the electrochemical deposition of a single bismuth wire that is left in the polymer for further measurements of its electrical properties.