

Optimization of nanopores obtained by chemical etching on swift-ion irradiated lithium niobate

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The morphology of the nanopores obtained by chemical etching on ion-beam irradiated LiNbO₃ has been investigated for a variety of ions (F, Br, Kr, Cu, Pb), energies (up to 2300 MeV), and stopping powers (up to 35 keV/nm) in the electronic energy loss regime. The role of etching time and etching agent on the pore morphology, diameter, depth, and shape has also been studied. The transversal and depth profiles of the pore have been found to be quite sensitive to both irradiation and etching parameters. Moreover, two etching regimes with different morphologies and etching rates have been identified.