

Electrochemical deposition of cylindrical Cu/Cu₂O microstructures

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Cylindrical microstructures of Cu/Cu₂O have been electrochemically produced from the self-oscillating Cu(II)-lactate system using etched ion track polycarbonate membranes as templates. After removal of the polymer, arrays of free-standing cylinders were obtained. The influence of the applied current density and the deposition temperature on the oscillation pattern and quality of the deposited wires were studied in detail for pores having a diameter of about 1000 nm. The widest current density range for oscillations was found at 25 °C. Under these conditions the deposited wires were of equal length and showed smooth contours, while a granular structure was observed at higher temperatures.