

Freestanding copper nanocones for field emission by ion-track technology and electrodeposition

Alber I, Krieg J, Müller C, Toimil-Molares ME, Trautmann C, Serbun P, Jordan F, Navitski A, Müller G
PROCEEDINGS - IVNC 2011: 2011 24TH INTERNATIONAL VACUUM NANOELECTRONICS CONFERENCE, 2011, ARTICLE NUMBER 6004569, PAGES 75-76

Freestanding copper nanocones (Cu-NC) are fabricated by electrodeposition in etched ion-track membranes for field emission investigations. Different deposition conditions of the Cu-NC were studied in order to get mechanically stable cones with good electrical contact to the substrate. Electrodeposition at -40 mV lead to a slow growth rate, resulting in uniform and mechanically stabile Cu-NC of about 28 μm length, 1.2 μm base radius, and 190 nm tip radius. The deposition process was monitored via current-vs-time curves.