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Title: Fabrication and Characterization of MIM Diodes Based on Nb/Nb(2)O(5) Via a Rapid Screening Technique
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Abstract: A novel and facile fabrication technique using a bent-wire (M2) point-contact configuration is used to fabricate and analyze different metal-insulator-metal (M1/I/M2) diode systems based on Nb/Nb(2)O(5) (M1/I), enabling a study of work function influence on diode behavior. Excellent diode performance is achieved for Nb/Nb(2)O(5)/Pt, Nb/Nb(2)O(5)/Au, Nb/Nb(2)O(5)/Ag and Nb/Nb(2)O(5)/Cu demonstrating significant promise for ultrafast rectification applications. The asymmetry and nonlinearity values of the Nb/Nb(2)O(5)/Pt are 1500 and 4 at 0.5 V, respectively.