Electron spectroscopy analysis on NbN to grow and characterize NbN/AlN/NbN Josephson junction

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Abstract: Three layers, NbN based Josephson junction, has been growth by RF and by DC sputtering within the constrain required by the photolithography technology. An interesting superconducting film with critical temperature of Tc = 14 K, well above the temperature of the commercial cryocooler, has been obtained reducing sputtering power and finding a proper N_2 concentration in the gas mixture. The search of the new sputtering parameters has been obtained with the help of electron spectroscopy and X-ray diffraction analysis. © 2007 Elsevier Ltd. All rights reserved.
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