

## Structure and transport properties of nitrided $VN-SiO_2$ sol-gel derived films

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This work presents results of transport properties studies of  $xVN-(100-x)SiO_2$  (where x = 90, 80, 70, 60mol%) films. The films were prepared by thermal nitridation of sol-gel derived  $V_2O_3$ -SiO<sub>2</sub> (in proper molar ratio) coatings. The coatings obtained by sol-gel method are especially suitable for the ammonolysis because of their porosity. The microporous structure allows both a significant incorporation of nitrogen and its distribution through the film. The nitridation process of  $V_2O_3$ -SiO<sub>2</sub> coatings leads to the formation of disordered structures, with VN metallic grains dispersed in the matrix of insulating SiO<sub>2</sub>. The critical temperatures of the superconducting transition of the samples,  $T_{conset}$ , are about 7.5 K.