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Superconductivity in sol-gel prepared amorphous thin films of $\mathbf{Na}_x\mathbf{WO}_{3-y}$ ALI E. ALIEV, Nanotech Institute, University of Texas at Dallas, Richardson, TX 75083 — Sol-gel prepared tungsten trioxide (WO_{3-y}) thin film (300 nm) electrochemically intercalated with sodium ions exhibits a pronounced diamagnetic and zero resistance onsets at 4.7 K. XRD spectrum of Na_xWO_{3-y} film shows amorphous structure with very small peaks indicating to nucleation of hexagonal nanocrystals. Shift of T_c at different applied currents and magnetic fields indicate on very high critical currents and critical magnetic fields. Despite of small resistivity onset starting at 6 K, the magnetic susceptibility measurements exhibit ZFC onset at 4.7 K, where the resistivity curve has second stronger temperature decline. This is a first observation of superconducting phase transition in amorphous tungsten bronzes.

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