Niobium
I 5100

DOI: 10.1002/chin.201033017

33- 017

$V_{2.38}Nb_{10.7}O_{32.7}$: A V_2O_5—Nb_2O_5 Mixed Oxide Tunnel Structure Related to the Tetragonal Tungsten Bronzes. — The title compound is prepared by freezing aqueous solutions of V_2O_5 and Nb_2O_5 in oxalic acid with liquid nitrogen, followed by drying the frozen mixture and heating to 350 °C (30 min), and by reaction of V_2O_5 with Nb_2O_5 at 650 °C. $V_{2.38}Nb_{10.7}O_{32.7}$ crystallizes in the orthorhombic space group Cmmm. Its modified tetragonal tungsten bronze type structure shows high potential for ionic intercalation, since easily reducible $[V_2^V O]$ units are situated in the tunnels of a rigid niobium oxide framework. Thus, $V_{2.38}Nb_{10.7}O_{32.7}$ may be an interesting compound for electrochemical applications or applications as catalyst. — (BOERRNERT, C.; CARRILLO-CABRERA, W.; SIMON, P.; LANGBEIN*, H.; J. Solid State Chem. 183 (2010) 5, 1038-1045, DOI:10.1016/j.jssc.2010.02.018 ; Fachbereich Chem. Lebensmittelchem., TU Dresden, D-01069 Dresden, Germany; Eng.) — W. Pewestorf