Platinum metals

I 7700

47- 030

Structure and Properties of Ordered Li_2IrO_3 and Li_2PtO_3. — Li_2MO_3 (M: Ru, Ir, Pt) are prepared from mixtures of Li_2CO_3 and Ru, Ir, or Pt (1025 K, 12 h) and characterized by powder XRD, TGA, UV/VIS diffuse reflectance spectroscopy, electrical measurements, and DFT electronic structure calculations. The compounds crystallize in the monoclinic space group C2/m. They are thermally stable against reduction in air, O_2, and N_2 below 1375 K, which is an attractive feature for sensor operation over a wide range of temperatures. The thermal stability is significantly reduced in forming gas (N_2/H_2). The Ir compound is a metallic conductor, while the Pt compound is a semiconductor. — (O'MALLEY*, M. J.; VERWEIJ, H.; WOODWARD, P. M.; J. Solid State Chem. 181 (2008) 8, 1803-1809; Dep. Chem., Ohio State Univ., Columbus, OH 43210, USA; Eng.) — W. Pewestorf