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Structural and Electrochemical Characterization of Columnar-Structured Mn-Doped Bi26Mo10O69-d Electrolytes

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Abstract : The present work is devoted to the investigation of two series of doped bismuth molybdates: $Bi_{26-2x}Mn_{2x}Mo_{10}O_{69}$-d and $Bi_{26}Mo_{10-2}yMn_2yO_{69}$-d. Complex oxides were synthesized by conventional solid state technology and by co-precipitation method. The products were identified by powder diffraction. The powders and ceramic samples were examined by means of densitometry, laser diffraction, and electron microscopic methods. Porosity of the ceramic materials was estimated using the hydrostatic method. The electrical conductivity measurements were carried out using impedance spectroscopy method.

Keywords : bismuth molybdate, columnar structures, impedance spectroscopy, oxygen ionic conductors
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