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Synthesis of the $Ba_{1-x}Na_xTi_2Sb_2O_z$ system with $x= 0.00, 0.15, 0.25$ and 1.00 , by solid-state reaction method CAROLINA JUÁREZ, E. CHAVIRA, A. TEJEDA, D. CABRERO, V. GARCÍA-VÁZQUEZ, J.T. ELIZALDE GALINDO, Univ Nacl Autonoma de Mexico — The present study of this system is a superconductor without Cu-O planes using solid-state reaction synthesis with slow cooling. The samples used were considered with an initial weight of 1 g after the losses to CO_2 owing to the reaction. Used ThermoGravimetric Analysis, we determined the reaction temperatures. The samples were characterized using X-Ray powder Diffraction and Scanning Electron Microscopy, expose the formation to secondary and ternary compounds, also the changes in the oxidation numbers of some initial reagents in each reaction temperature. A new contribution of this work is obtain the conditions of the monophase, $NaSbO_3$ with PDF 42-0223 in $x=1.00$ at $550\text{ }^\circ\text{C}/62\text{ h }50\text{ min.}$ not reported in the literature. We observed in XRD an amorphous phase at the same temperature, which not observed at $700\text{ }^\circ\text{C}$. By SEM we distinguish that the amorphous phase continue exist, but using XRD is not perceptible because it is in less proportion and showing a grains grow in the samples. We determine the thermodynamic conditions to obtain a $NaSbO_3$ monophase at $x= 1.00$, different that was be reported. This system exhibit an amorphous phase between $550 - 700\text{ }^\circ\text{C}$. To optimize the connection between polycrystals grain pellets were manufactured at $800\text{ }^\circ\text{C}$.

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