

## Investigation of special thermodynamic properties of Bi-2212 as a function of temperature and oxygen pressure using XRD

M. Babaeipour<sup>\*</sup>, M. Hesarkhani, M. Tavakoli

*Department of Physics, University of BuAli Sina, Hamedan*

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**Abstract:** In this article, the thermodynamic properties of Bi2212, as a function of oxygen pressure and temperature variations, have been studied. The results showed that variation of lattice parameters are directly a function of temperature and conversely function of oxygen content. The experiments were set up at room temperature to 820 °C and different oxygen pressure from 5, 10, 50, 100 and 500 mb. It was found that the crystal structure of the Bi-2212 is stable from room temperature up to 815 and oxygen pressure of 10 mb but at 820 °C, it committed decomposition and its crystal structure completely ruined. It was found that as a result of decomposition of some of the elements of the compound does interact with quartz and put it in a fragile position.

**Keywords:** *BSCCO, Bi-2212, oxygen content, lattice parameters, stoichiometr*

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<sup>\*</sup>Corresponding author, Telefax.: +98 (0811) 8280440, E-mail: babaei@basu.ac.ir