Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Li-Vacancy Ordering in LiBC Phase EBRU GUNGOR, ENGIN OZDAS, Advanced Materials Research Group, Physics Department, Hacettepe University, Beytepe, Ankara 06800, Turkey — The discovery of a phonon mediated superconductivity in MgB_2 with a T_c of 40 K has accelarated the scientific interest in similar layered compounds and the electronic band structure calculations showed that the high-Tc superconductivity is possible for the hole-doped layered lithium borocarbide, Li_xBC [1,2]. However, the superconducting features for Li off-stoichiometric borocarbide compounds have not been observed in any experimental studies, because of the difficulties in the sample preparation. In this work, the effects of synthesis conditions on the structure of Li_xBC samples with the different Li-stoichiometries and the phase stability were investigated. The structural studies showed that the intercalation process has a staging behaviour as Li intercalated graphite and a novel Li vacancy ordered structure for off-stoichiometric Li_xBC phases. [1] Rosner H.et al., PRL 88, 12 (2002) [2] Dewhurst et al., PRB 68, 020504(R) (2003)

Engin Ozdas
Physics Department, Hacettepe University, Beytepe, Ankara 06800, Turkey

Date submitted: 15 Jan 2006 Electronic form version 1.4