

**PLASMA FREQUENCY AND PRESSURE EFFECTS IN
BULK YBCO-123 SUPERCONDUCTOR SYSTEM**

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Abstract: *We report on a study about the influence of pressure on the plasma frequency obtained from room temperature reflectance spectrums (in the range from 230nm to 900nm) in the case of five single phase bulk YBCO-123 superconductor samples pressed uniaxially before sintering process at 70MPa, 90MPa, 110MPa, 130MPa and 140MPa. A second order polynomial dependence of plasma frequency versus pressure has been observed. By resistivity measurements we appreciated the critical temperature and we found that a good polynomial fit of second order describes the plots of the offset temperature (appreciated as the temperature of zero resistivity) versus pressure with a rate that is not constant. The connection between the two dependences gave us the conclusion that these behaviors are consistent with the model of pressure-induced charge transfer (PICT).*

Keywords: superconductors, reflectance, resistivity