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On the Ratio of the Energy Gap Amplitude to the Critical Temperature for Cuprates

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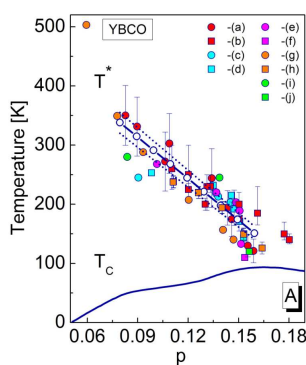
The model for the cuprates based on the modified electron–phonon pairing mechanism has been tested. For this purpose, the superconductors with high value of the critical temperature have been taken into consideration. In particular: $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$, $\text{HgBa}_2\text{CuO}_{4+y}$, $\text{HgBa}_2\text{Cu}_{1-x}\text{Zn}_x\text{O}_{4+y}$, and $\text{HgBa}_2\text{Ca}_2\text{Cu}_3\text{O}_{8+y}$. It has been shown that the dependence of the ratio $R_1 \equiv 2\Delta_{\text{tot}}^{(0)}/k_B T_C$ on the doping (p) can be properly predicted in the framework of the presented theory; the symbol $\Delta_{\text{tot}}^{(0)}$ denotes the energy gap amplitude at the temperature of zero kelvin, and T_C is the critical temperature. The numerical results have been supplemented by the formula which describes the function $R_1(p)$.

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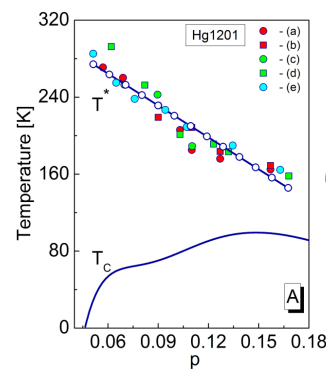
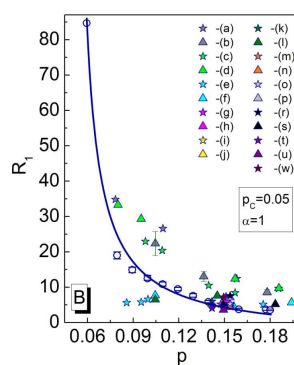
actual DOI: [10.12693/APhysPolA.130.1443](https://doi.org/10.12693/APhysPolA.130.1443)

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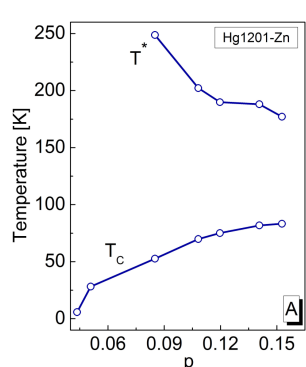
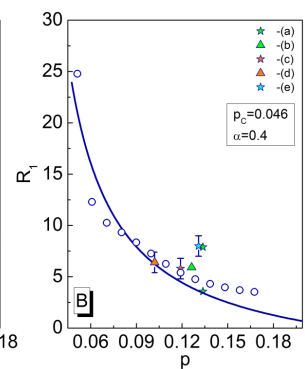
This article was originally published on October 2014 with Figs. 1–4 distorted in print. Correct versions of the figures are included below.



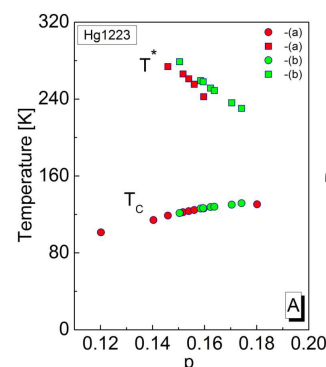
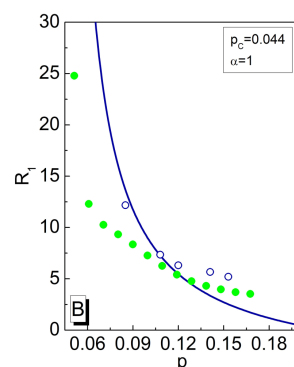
Page A-93, Figure 1



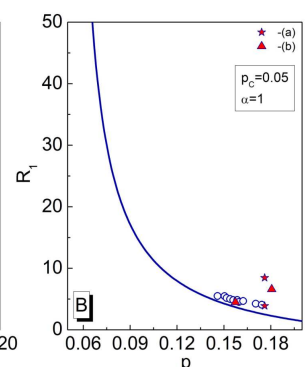
Page A-93, Figure 2



Page A-93, Figure 3



Page A-93, Figure 4



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