

## **Lattice Expansion does not explain the $T_c$ in chloroform and bromoform intercalated $C_{60}$**

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$CHCl_3$  and  $CHBr_3$  intercalated  $C_{60}$  have attracted particular interest after superconductivity up to  $T_c=117K$  was discovered. We have determined the structure using synchrotron x-ray powder diffraction. The expansion due to intercalation mainly takes place in one dimension, leaving planes of  $C_{60}$  molecules on an approximately

hexagonal, slightly expanded lattice. Tight binding band structure calculations for the surface layer was performed. In spite of the slight expansion of the layers, the density of states at the Fermi energy is smaller for  $C_{60}.2CHCl_3$  and  $C_{60}.2CHBr_3$  than for  $C_{60}$ . This suggests that the expansion alone cannot explain the increase of  $T_c$ .