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Evidence of the Jahn-Teller splitting of C60- in C60-tetraphenylphosphoniumchloride from an electron-spi--relaxation study

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Abstract

Pulsed EPR measurements of the transverse and longitudinal relaxation times of the C60 - anion radical in crystalline C60-tetraphenylphosphoniumchloride were done at temperatures from 4 to 40 K. Above 40 K to room temperature the longitudinal relaxation time was taken from the cw-EPR linewidth. The low-temperature data are explained in terms of local magnetic fluctuations, slow C60- motion, and localized two-level states related with the local disorder. The relaxation data at higher temperatures reveal experimental evidence for the Jahn-Teller distortion of the C60 - anion radical and allow to determine the Jahn-Teller splitting between the a2u electronic ground state and the excited e1u state of the unpaired electron. © 1995 The American Physical Society.

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