

RETRACTION

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Magnetic carbon

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In this Letter we reported high-temperature ferromagnetism in a polymeric phase of pure carbon that was purportedly free of ferromagnetic impurities¹. Since then, however, measurements made on the same and similar samples using particle-induced X-ray emission (PIXE) with a proton microbeam have indicated that these had considerable iron content^{2–4}. Also, polymerized C₆₀ samples mixed with iron before polymerization had a similar Curie temperature (500 K) to those we described¹, owing to the presence of the compound Fe₃C (cementite)⁵. In addition, it has since been shown that the pure rhombohedral C₆₀ phase is not ferromagnetic⁶.

Nevertheless, magnetic order in impurity-free graphitic structures at room temperature has been demonstrated independently⁷ (before and after publication of ref. 1). Ferromagnetic properties may yet be found in polymerized states of C₆₀ with different structural defects and light-element (H, O, B, N) content⁸.

T.L.M. and P.S. decline to sign this retraction because they do not believe that the earlier results¹, supported in subsequent studies^{9,10}, are totally invalidated by these findings^{2–6}.

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RETRACTION

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Evidence for spin-charge separation in quasi-one-dimensional organic conductors

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In this Letter, we described the anomalous behaviour of the thermal conductivity k in quasi-one-dimensional Bechgaard salts. As we have since observed a conventional temperature dependence of k in another quasi-one-dimensional organic conductor, TTF-TCNQ, we remeasured the value of k in our Bechgaard salts and identified a heat leakage in the original experimental set-up, which becomes relevant for samples with very small values of k at low temperatures. In an improved set-up, the low-temperature maxima of k (as reported in Figs 2 and 3) are not reproduced, indicating that our estimate of the phonon contribution to the thermal conductivity of the Bechgaard salts is no longer valid. Because a reliable decomposition of k into a magnetic and a phononic contribution was the basis of our interpretation, we have to withdraw the conclusion that our data provided evidence for spin-charge separation.