

COMPARISON OF EVOLUTION OF HETEROATOMS FROM COAL AND PETROLEUM-BASED ELECTRODE
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A route for making, from coal, a high-purity coke suitable for the manufacture of both graphite and carbon electrodes has been developed by the National Coal Board at its Coal Research Establishment in England. This process for electrode coke involves the solvent extraction of coal and is part of a wider NCB programme into the beneficiation of coal which includes, besides electrode coke, hydrocarbon products, chemicals and carbon fibres. This paper describes the heat treatment of cokes in the range 1300 - 2500°C and shows that the heteroatoms in coal-based electrode cokes are bound to the carbon structure in a different manner to those in petroleum coke. By measuring the growth of graphitic crystallites by x-ray diffraction, it is also shown that the rate of graphitisation is similar for both types of coke.