The Hardness of Irradiated Graphite

R. G. Brown

(U.K.A.E.A. Reactor Materials Laboratory, Culcheth, Nr. Warrington, Lancs, England)

Abstract

Measurements of the Vickers hardness have been made on a series of samples of nuclear graphite before and after irradiation in a reactor at 150°C. The recovery of the changes in hardness on thermal annealing has also been examined. It is observed that the hardness increases very considerably on irradiation and with low temperature annealing after irradiation. The hardness recovers in two stages between 200°C and 400°C and 1200°C to 1600°C. The results are discussed in terms of the known effects of irradiation on the mechanical properties of graphite.