

MATERIALS AND STRUCTURES SYMPOSIUM (C2)
New Materials and Structural Concepts (4)

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STUDY ON PORE EVOLUTION LAW OF C/C COMPOSITES DURING PITCH IMPREGNATION
AND CARBONIZATION PROCESS

Abstract

Abstract Carbon/carbon composites were fabricated using natural and high pressure impregnation/carbonization technique with whole felt as reinforcement, high temperature coal-tar pitch as matrix precursors. The change of pore size and aperture distributing during coal-tar pitch impregnation and carbonization process were measured by mercury proximity, Morphology of pore for carbon/carbon composites under different impregnation and carbonization times were observed using polarizing microscopy. The rate of pore for carbon/carbon composites takes on downtrend during coal-tar pitch impregnation and carbonization process. Results of mercury proximity shows that, with the density increase of composites, the average aperture of pore minish gradually, the curve of aperture distributing similarly normal school, and can be separated into 3 parts approximately, large than 6m, intervenient 6m to 0.04m and less than 0.04m. The results of observed using polarizing microscope shows that, the density of composites is low, the structure of composites is loosely, and the large of pore are asymmetric, the large pore is much, rate of pore is great, the rate between size in width and length is small, the shape of pore is acerose; the density of composites is high, the rate of pore is lower, the rate between size in width and length is large, and the shape of pore is close to rotundity.