

Modeling studies on the preparation of C/C composites by the CVI of the pyrolysis carbon from propane

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The process of the preparation of C/C composites by the chemical vapor infiltration (CVI) of propane was studied. Pyrolysis carbon was deposited on the lateral surfaces of carbon fibers in the layered preform. The amount of deposited carbon and the compositions of the exit gas after the deposition reaction were measured. Changes of the fractions of methane, ethylene, and acetylene in the exit gas with time were similar to the reported data. The mathematical modeling of the system with the deposition rate constant from the reference estimated the experimental results well. Changes of the shapes of deposited carbon in the pores of preform were confirmed with SEM photos.