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Modeling and BET analysis of liquid silicon infiltrated C/C-SiC ceramic

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The Si-SiC porous ceramics derived from the C/C-SiC composites exhibit some of the interesting characteristics over the conventional porous materials. This paper deals with the analysis of the porous Si-SiC ceramic for open porosity and its distribution using liquid infiltration techniques like He-gas pycnometer, Archimedes method and mercury intrusion porosimetry. Further, in order to determine the surface area of the porous Si-SiC ceramics, BET analysis is applied. The frames for modelling are generated and modelling for open porosity is done based on experimental findings which include an approximation of the open porosity calculated theoretically from the composite manufacture data, model for estimation of theoretical open porosity and its distribution. The results obtained from these models are compared with experimental values and hence, the models are validated.

Biography

Vijay K Srivastava has completed BTech in Mechanical Engineering in 1977, MTech in Machine Design in 1979 and PhD in 1987 from Indian Institute of Technology (BHU) Varanasi, India. He is Professor in Mechanical Engineering Department, Indian Institute of Technology (BHU), Varanasi, India. He has published more than 145 papers in International Journals. He has supervised more than 40 master theses and 4 PhD theses. Presently, he is Founder President of "ICRACM Series Conference.

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