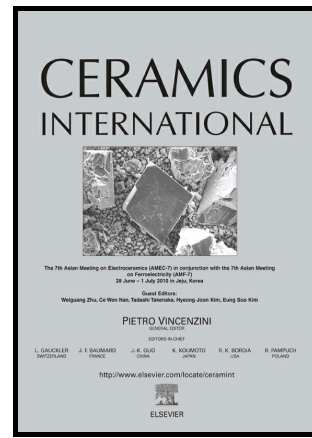


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Fabrication and optimization of a clay-bonded SiC flat tubular membrane support for  
microfiltration applications

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Abstract:

SiC has excellent structural and mechanical properties and also has excellent properties related to membrane performance. High processing temperature increases the costs of SiC products and thus limits their use. In this study, we fabricated SiC-based ceramic support layers using a clay-bonding technique. Kaolin, a well-known clay, was used as a binder for silicon-carbide particles. Three different SiC powders were used on the basis of particle size for fabrication by the extrusion method, which converts powders into flat tubular form. The resultant supports are sintered at 1300-1500°C in air and evaluated for their structural properties, pore characteristics and permeability. It is evident from the study that we can produce a support layer with small-sized SiC powder that has a high open porosity and high strength with a smaller pore size and lower permeability in comparison with layers produced with a large-sized starting SiC

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