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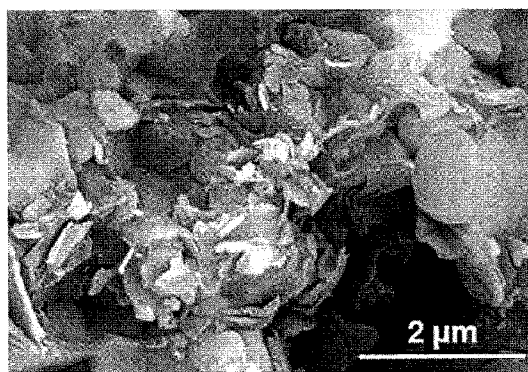
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(54) Title: PROCESS FOR PRODUCTION OF GRAPHENE/SILICON CARBIDE CERAMIC COMPOSITES

FIG. 5



(57) Abstract: We provide a method for the in situ development of graphene containing silicon carbide (SiC) matrix ceramic composites, and more particularly to the in situ graphene growth within the bulk ceramic through a single-step approach during SiC ceramics densification using an electric current activated/assisted sintering (ECAS) technique. This approach allows processing dense, robust, highly electrical conducting and well dispersed nanocomposites having a percolated graphene network, eliminating the handling of potentially hazardous nanostructures. Graphene/SiC components could be used in technological applications under strong demanding conditions where good electrical, thermal, mechanical and/or tribological properties are required, such as micro and nanoelectromechanical systems (MEMS and NEMS), sensors, actuators, heat exchangers, breaks, components for engines, armours, cutting tools, microturbines or microrotors.

