



Joining and Assembly of Silicon Carbide-Based Advanced Ceramics and Composites for High Temperature Applications

By M Singh

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.Silicon carbide based advanced ceramics and fiber reinforced composites are under active consideration for use in wide variety of high temperature applications within the aeronautics, space transportation, energy, and nuclear industries. The engineering designs of ceramic and composite component require fabrication and manufacturing of large and complex shaped parts of various thicknesses. In many instances, it is more economical to build up complex shapes by joining simple geometrical shapes. In addition these components have to be joined or assembled with metallic sub-components. Thus, joining and attachment have been recognized as enabling technologies for successful utilization of ceramic components in various demanding applications. In this presentation, various challenges and opportunities in design, fabrication, and testing o high temperature joints in ceramic matrix composites will be presented. Silicon carbide based advanced ceramics (CVD and hot pressed), and C/SiC and SiC/SiC composites, in different shapes and sizes, have been joined using an affordable, robust ceramic joining technology (ARCJoinT). Microstructure and high temperature mechanical properties of joints in silicon carbide ceramics and CVI and melt infiltrated SiC matrix composites will, be reported....



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