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Positron annihilation induced Auger electron emission from silicon carbide surfaces S. MUKHERJEE, M. NADESALINGAM, University of Texas at Arlington, G. BRAUER, Institut für Ionenstrahlphysik und Materialforschung, Forschungszentrum Rossendorf, T. NOZAWA, A. KOHYAMA, Institute of Advanced Energy, Kyoto University, A.H. WEISS, University of Texas at Arlington — Silicon carbide (SiC) in monocrystalline, hexagonal polytype form is a very interesting material for a wide class of novel applications in electronics. SiC fiber-reinforced SiC matrix composite materials (SiC/SiC) are considered to be the attractive candidates as materials for advanced energy systems, such as high performance combustion systems, fuel-flexible gasification systems, fuel cell / turbine hybrid systems, nuclear fusion reactors, and high temperature gas-cooled fission reactors. Positron Annihilation induced Auger Electron Spectroscopy (PAES) is an established tool to characterize the top most atomic surface layer of solids. Here, PAES has been used to study the surface of 6H-SiC after annealing under different thermal and ambient conditions. In addition, results of investigating the surface of a composite consisting of sintered SiC Nanopowder and fibres of pyrolytic carbon are presented and discussed. This research supported by the Welch Foundation under Y-1100.

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