World Academy of Science, Engineering and Technology
International Journal of Materials and Metallurgical Engineering
Vol:12, No:05, 2018

# Manufacturing Process of S-Glass Fiber Reinforced PEKK Prepregs

**Authors :** Nassier A. Nassir, Robert Birch, Zhongwei Guan

**Abstract :** The aim of this study is to investigate the fundamental science/technology related to novel S-glass fiber reinforced polyether- ketone-ketone (GF/PEKK) composites and to gain insight into bonding strength and failure mechanisms. Different manufacturing techniques to make this high-temperature pre-impregnated composite (prepreg) were conducted i.e. mechanical deposition, electrostatic powder deposition, and dry powder prepregging techniques. Generally, the results of this investigation showed that it was difficult to control the distribution of the resin powder evenly on the both sides of the fibers within a specific percentage. Most successful approach was by using a dry powder prepregging where the fibers were coated evenly with an adhesive that served as a temporary binder to hold the resin powder in place onto the glass fiber fabric.

**Keywords :** sry powder technique, PEKK, S-glass, thermoplastic prepreg
**Conference Title :** ICACT 2018 : International Conference on Aerospace Composite Technology
**Conference Location :** Barcelona, Spain
**Conference Dates :** May 17-18, 2018