

## Reactive Sizing Agent for Improving Adhesion between Carbon Fibers and Vinyl Ester Resins

### **Disclosure Number**

201102541

### **Technology Summary**

This invention relates, in general, to the manufacture of carbon fibers and their composites materials. More particularly, it pertains to a process for the sizing (compatible coating) of carbon fiber so as to improve the adhesion of the fiber to a matrix in the manufacture of carbon fiber-reinforced composite materials. The invention is effectively applicable to the surface treated carbon fibers made of not only polyacrylonitrile (PAN), pitch and rayon fibers but also other materials as precursors. Carbon fibers have been developed predominately for the aerospace market, in which epoxy resins are usually the resins of choice. Since the cost of carbon fiber is reducing and have the high possibility to be used in high volume productions, The choice of resin will shift from epoxy to low cost resin systems. Vinyl ester resin has a great potential to be a choice of resin due to its low and easy process. This invention is directed to improving the interface adhesion of carbon fiber with vinyl ester resin by applying reactive sizing on carbon fiber surfaces during manufacturing

### **Inventor**

OZCAN, SOYDAN

Materials Science and Technology Div

### **Licensing Contact**

DETRANA, ALEXANDER G

UT-Battelle, LLC

Oak Ridge National Laboratory

Rm 139, Bldg 4500N, MS: 6196

1 Bethel Valley Road

Oak Ridge, TN 37831

Office Phone: (865) 576-9682

E-mail: [DETRANAAG@ORNL.GOV](mailto:DETRANAAG@ORNL.GOV)

Note: The technology described above is an early stage opportunity. Licensing rights to this intellectual property may be limited or unavailable. Patent applications directed towards this invention may not have been filed with any patent office.