

A Novel Method to Produce Carbon Fiber Reinforced Thermoplastic

Background

Carbon fiber reinforced thermoplastics (CFRTP) are promising composite materials in the construction of transport and sports equipment due to their light and strong characteristics. The fabrication process of CFRTP requires adhering carbon fiber and thermoplastic resin. However, controlling interfacial adhesion is very difficult.

Technology Overview

Nagoya University researchers have developed a novel technique to control the interfacial adhesion between the carbon fiber and the thermoplastic resin. They have found the adsorption of poly methyl methacrylate particles on the surface of carbon fibers by electrophoresis leads to an interfacial shear strength increase and achieves a strengthened surface adhesion between the carbon fiber coated with particles and the poly methyl methacrylate resin.

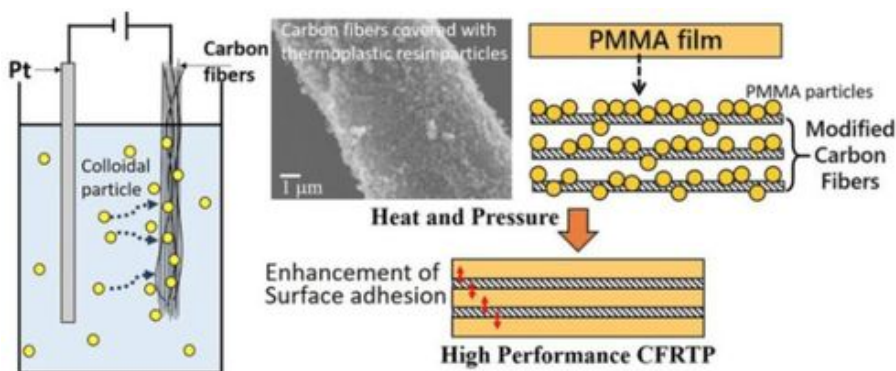


Figure 1. The adsorption of poly methyl methacrylate particles on the surface of carbon fibers by electrophoresis

Further Details: Tetsuya Yamamoto, Katsumasa Uematsu, Toshihira Irisawa, Yasuhiro Tanabe, Controlling of the Interfacial Shear Strength between Thermoplastic Resin and Carbon Fiber by Adsorbing Polymer Particles on Carbon Fiber using Electrophoresis, Composites: Part A 88 (2016) 75–78.

Seeking: Licensing

IP Status: Patent application submitted

Patents: An international patent application has been filed. (WO 2017/150702 A1)

Contact

Rena Shimizu, Ph.D., TEL: 919-535-8724 Email: rshimizu@tpnu.org

Technology Partnership of Nagoya University, Inc.

One Copley Parkway, Suite 305, Morrisville, NC 27560