

High Performance Highway and Marine Structural Elements from Polymer/Inorganic Composites



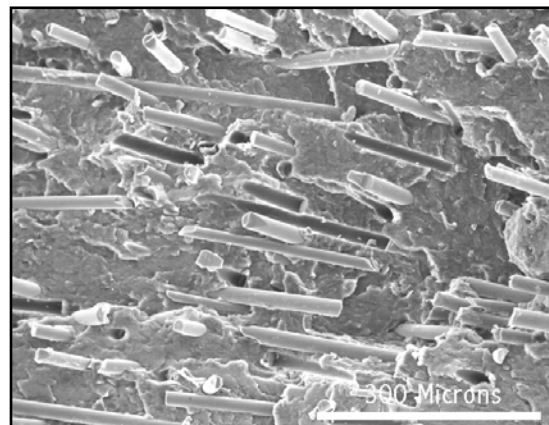
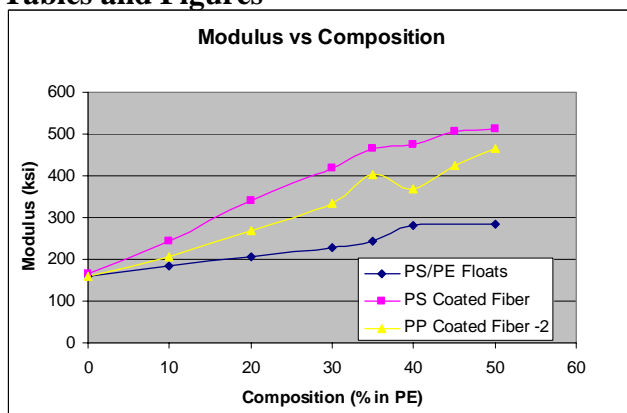
Overview

Polymer/Inorganic Composites have been produced to produce structural materials for many decades, with terrific results. Traditional materials have been thermosets and glass fibers. Thermoplastic materials such as Polypropylene, Polystyrene and High Density Polyethylene, have only recently been used to produce a strong, stiff composite materials. These compositions generally require 25-35% by weight of fiber for optimal results. Rutgers Researchers have discovered a way to orient fibers while processing, requiring 1/3 the fiber content for similar on-axis properties and the use of recycled fibers and plastic.

Progress

While the principle of orienting fibers through special processing is understood, thermoplastic composites of all types are limited in structures to non-pavable surfaces. In order to open these technologies to standard pavable vehicular bridges and the like, a marriage of more standard thermosetting composites and recycled thermoplastics composites is deemed necessary. It is felt that a combination of these technologies will prove enabling to provide the lowest cost and longest life structures. Rutgers researchers are currently seeking a partnership with a company interested in pursuing these markets.

Tables and Figures



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