Mechanical and functional performance of whiskerized carbon fabric surfaces in laminated composite structures

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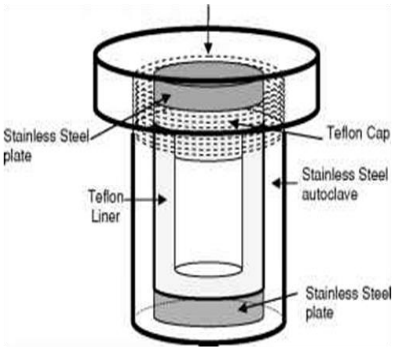
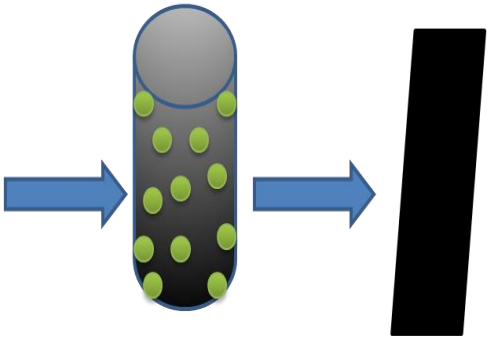


Hydrothermal synthesis of metal oxide whiskers



Growth of secondary phase reinforcement on surface of carbon fiber (whiskerized carbon fiber)

Whislerized carbon fiber reinforced composite

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The aim of this project is to study the carbon fiber whiskerization to obtain the desired interfacial reinforcement and electrical heating without structural damage. The whiskerization deals with growing a secondary reinforcement directly onto the surface of the fiber, and thereby enhanced interphase properties due to better cohesion between fiber and matrix. The project work will deal with growth of metal oxide whiskers by hydrothermal method on the surface of carbon fabrics, preparation of composites using whiskerized carbon fabrics as reinforcement and characterization of mechanical, thermo-mechanical, electrical, ohmic heating properties of composites. Further, the utility of whiskerized carbon fabric/laminated composites will be studied for deicing applications.

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