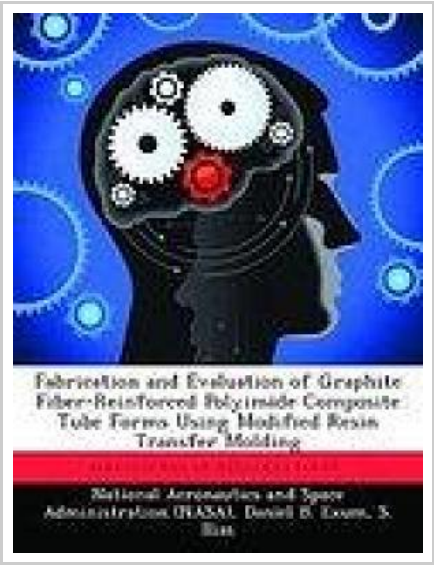

Fabrication and Evaluation of Graphite Fiber-Reinforced Polyimide Composite Tube Forms Using Modified Resin Transfer Molding

By National Aeronautics and Space Administration (NASA)

Bibliioscholar Mrz 2013, 2013. Taschenbuch. Book Condition: Neu. 246x189x10 mm. This item is printed on demand - Print on Demand Neuware - The techniques necessary for the fabrication of a complex three-dimensional tubular form using a PMR-type resin have been developed to allow for the construction of several tubes with good physical and mechanical properties. Employing established resin transfer molding practices, the relatively non-hazardous AMB-21 in acetone formulation was used to successfully impregnate four layers of AS4 braided graphite fiber preform previously loaded around an aluminum cylindrical core in an enclosed mold cavity. Using heat and vacuum, the solvent was evaporated to form a prepreg followed by a partial imidization and removal of condensation products. The aluminum core was replaced by a silicone rubber bladder and the cure cycle continued to the final stage of 550 F with a bladder internal pressure of 200 lbs/sq in while simultaneously applying a strong vacuum to the prepreg for removal of any additional imidization products. A combination of several modifications to the standard resin transfer molding methodology enabled the mold to 'breathe', allowing the imidization products a pathway for escape. AMB-21 resin was chosen because of the carcinogenic nature of the primary commercial...

Reviews

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