

Abstract Submitted  
for the MAR14 Meeting of  
The American Physical Society

**Effect of particle incorporation on mechanical properties of carbon fiber textile composites** SATOSHI KOBAYASHI, JUN KITAGAWA, Tokyo Metropolitan University, TOKYO METROPOLITAN UNIVERSITY COLLABORATION — In this study, the effect of mechanical properties and fracture behavior due to the inclusion of the fine particles was investigated. The tensile and flexural properties of CFRPs with rubber or Al<sub>2</sub>O<sub>3</sub> particle modified matrix were characterized as a function of particle loading. Tensile strength of particle incorporated CFRP were nearly equal to that of neat matrix CFRP. Flexural strength of CFRP composites were influenced by both matrix modulus and toughness. It is found that higher flexural strength for 5wt.% rubber particle incorporated specimen largely depends on matrix toughness, although lower flexural strength for 10wt.% rubber particle incorporated specimen depends on matrix flexural modulus. In case of Al<sub>2</sub>O<sub>3</sub> particle incorporated specimen, particle content of 10wt.% had a maximum flexural strength. However, further particle addition up to 20wt.%, decreased the flexural strength due to the worse formability.

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Date submitted: 30 Sep 2013

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