TECHNOLOGY NEED
High-modulus (HM) carbon fiber composites have growing demand in the aircraft industries to manufacture lightweight aircraft structures. But extremely low fiber-direction compressive strength of HM composite makes it unfit for aircraft industries. This drawback of HM carbon fiber provides scope for improvement of compressive strength.

INVENTION DESCRIPTION/SOLUTION
The present invention proposes a method for enhancing the compressive strength of low fiber direction HM Composites. For improving the compressive strength of HM composites it is blended with Intermediate-Modulus (IM) and nano-silica. Comingling IM and HM fibers at the filament level in addition to the matrix nano-sized structural reinforcement throughout the composites provides additional support to the HM fiber, thereby improving the shear modulus to axial modulus ratio of the composite material.

APPLICATIONS
- Aerospace Industry
- Automobile Industry
- Robotics
- Mountain Bikes

KEY BENEFITS
- Light Weight
- High Compressive Strength
- Improved Shear Modulus

STAGE OF DEVELOPMENT
Component Validation/TRL=4

INTELLECTUAL PROPERTY STATUS
Patent Pending

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