



## TECHNOLOGY AVAILABLE FOR LICENSING

### Reinforced Structural Elements Incorporating Fiber-Reinforced Metal Matrix Composite Wires and Methods of Producing the Same

Patent Application #10/188,989

Inventors: Joseph Blucher

#### Invention Details:

Hollow ceramic microspheres are incorporated into a metal matrix through a pressure infiltration process. The matrix material can be any suitable metal, such as aluminum, magnesium, copper, or other metals. The microspheres can be any suitable ceramic, for example, aluminum oxide, silica, or a combination of the two. One relatively inexpensive source of such microspheres is a byproduct of the fossil fuel combustion process, particularly of coal. Hollow ceramic microspheres are available from other sources as well.

#### Benefits of the Invention:

##### Advantages

- Inexpensive
- Low specific weight
- High compressive strength
- Excellent machinability
- Excellent thermal stability
- Moderately good electrical conductivity
- Good damping properties

##### Uses

- Space Structures
- Engines
- Construction
- Cable

#### The Bottom Line:

The production of light-weight metal castings with excellent physical properties is possible for a variety of applications where weight is a principal design driver. This technology provides both a simple and cost-effective method for achieving castings previously not possible.

#### For More Information:

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