

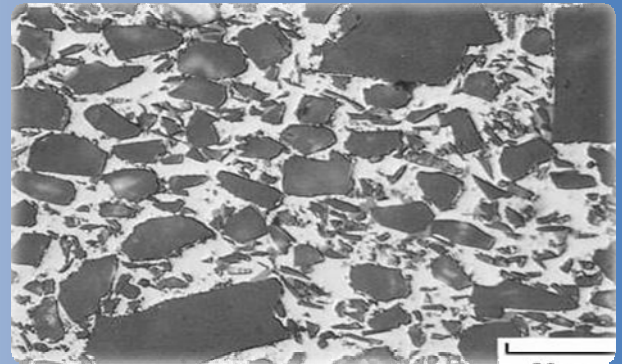


CPS MMC Structures

- CPS Technologies' unique processes can make net-shape, structural, metal matrix composite (MMC) parts with either
 - Silicon-carbide (SiC) particles
 - Discontinuous ceramic fibers
 - Continuous ceramic fibers
- High strength and stiffness
 - SiC particle reinforced aluminum has the stiffness of cast iron at the weight of aluminum
 - Discontinuous fiber reinforced aluminum has improved stiffness and wear while maintaining some ductility and machineability
 - Continuous fiber reinforced aluminum has the strength and stiffness of high strength steel at less than half the weight



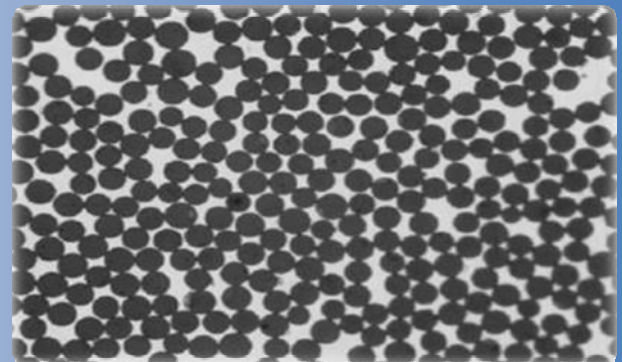
MMC composites are ideal for components that require stiffness, strength and light weight



Aluminum, reinforced with SiC particles is lightweight, high stiffness and high thermal conductivity

Applications

- Applications range from pushrods for racing engines to components for high speed robots.
- Parts can include inserts of aluminum, steel or titanium
- The processing equipment is large enough to produce parts with an outside envelope of 24 inches in diameter (600mm) by 36 inches long (900mm)



Continuous ceramic fiber reinforcement produces maximum strength and stiffness



Metal Matrix Composite Structures

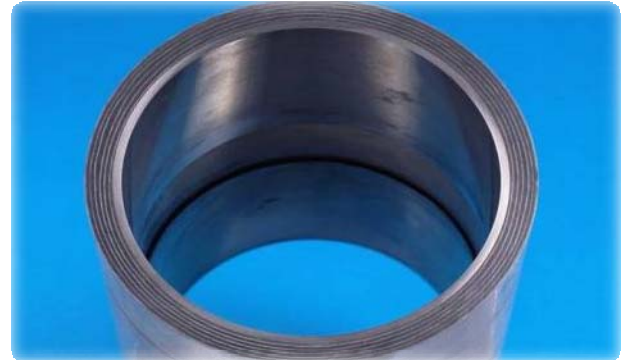


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CPS Technologies casting process produces near net-shape parts. The process for producing either particle-reinforced or fiber-reinforced parts starts with a preform that has the shape of the final part. The preform is then infiltrated with aluminum to produce a metal matrix composite component.

Particle reinforced parts are made by first producing an injection molded preform of silicon-carbide particles, using our QuickSet™ injection molding process.

Fiber performs can be made using conventional composite methods such as winding or braiding of fiber roving, or by layup and consolidation of tape or fabric preforms.

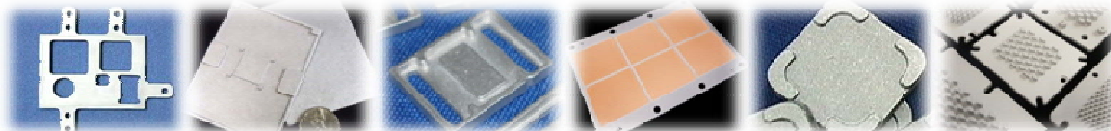


Large structural tubes have been fabricated and tested in applications ranging from landing gear braces to rocket motor cases



Pushrods for racing engines are as stiff as steel but weigh half as much. They dramatically improve the valve train stability

CPS is a world leader in developing and manufacturing advanced materials solutions and products, particularly combinations of metals and ceramics, to improve performance and reliability of applications in a variety of end markets. Our primary product is silicon-carbide particle reinforced aluminum (AlSiC) for thermal management of electronics. CPS AlSiC products are used for example as heat spreaders in microelectronics and as baseplates for high power motor controller packages, as well as many other designs.



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