1 . Improvement of specific Young's modulus of magnesium alloy by reinforcement with short alumina fibers





Specific Young's modulus of the composite exceeds 25, which is the value of conventional metals.

2 . Aluminum alloy matrix hybrid composite reinforced with alumina continuous fibers and alumina fine particles



At every temperature, tensile strength of the hybrid composite was higher than that of conventional composite(without particles). This is because the fibers were distributed uniformly owing to the particles that prevented the fiber-to-fiber contact, leading to the reduction of stress concentration at the points of direct fiber contact, and stress transmission between the fiber and the matrix becomes easy.

3. Carbon fiber- reinforced magnesium alloy composite with high strength





Bending strength at room temp.



Magnesium alloy(AZ91D): 300MPa Composite: 800MPa

4. Development of new machinable aluminum alloy composite



5. Effect of tramp elements on microstructure of thin wall spheroidal graphite cast iron



5