Boron fibers are important reinforcements for advanced composites.The most promising advantages of boron fibers are their mechanical properties (tensile strength and Young's modulus are 3.5 and 400 GPa, respectively) and low density (2.5 g/cm3).In July 1985, the Japanese vacuum metallurgy company developed the world's highest tensile strength boron fiber at 5.2 GPa and established a pilot plant.In the mid-1960s, AVCO produced W core and C core boron fibers using hydrogen and boron trichloride.then produced a high-strength, high-modulus and low-density boron fiber.The USA was the earliest and most important country regarding the research and development of boron fibers.The properties of typical boron fibers are listed in Table 2.36.They are produced by CVD by depositing B on W or C fibers in the form of a continuous monofilament with an outer diameter of 100–200 lm. The commonly used W wire has a diameter of 3.5–50 lm. At reaction temperatures of 1120–1200 ?C, more infiltration of B into W is found.Boron fibers are mainly used in the aviation and aerospace industries with special applications in MMC and PMC composites that have specific demands regarding weight and stiffness.The thickness of the coating is generally 3 lm. A commercialized B fiber with the trademark BoSiC is obtained when the coating is SiC.Boron fiber-reinforced epoxy composites have also been used to repair airplane metal bodies and to fabricate sports and entertainment items such as golf clubs and skis.The diameters of the continuous fibers were 100–200 lm. Textron Inc.