Structure and Mechanical Properties of WE43 Prepared by Powder Metallurgy Route

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Rare earth elements in magnesium alloy enhance mechanical properties, corrosion resistance, and heat stability up to 300 °C. Those enhancements with low density of magnesium determine this alloy for aviation and automotive industry. Magnesium alloys are also considered as materials for biodegradable implants. In this field there are required good mechanical properties and fair corrosion rate. In this work, WE43 alloy prepared by powder metallurgy with different conditions of sub-processes is prepared. Milling, cold uniaxial pressing, spark plasma sintering (SPS) and extrusion processes are used for sample preparations. Structure and mechanical properties of prepared materials are characterized.

Keywords: WE43, powder metallurgy, milling, extrusion.

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