

ABSTRACT

HIGH-COMPACTNESS BONDED RARE EARTH PERMANENT MAGNET AND PREPARATION METHOD THEREOF

The present invention discloses a high-compactness bonded rare earth permanent magnet and a preparation method thereof, belonging to the technical field of permanent magnets. Raw materials of the rare earth permanent magnet are calculated by mass percentage and comprise a thermosetting resin, a lubricant, a coupling agent, and the balance being a rare earth permanent magnetic powder. The preparation method thereof comprises: mixing the rare earth permanent magnetic powder with an organic solution containing the thermosetting resin to obtain a magnetic powder complex, mixing the magnetic powder complex with the lubricant, filling into a mold and compressing and molding at $12\sim 50\text{ T/cm}^2$ for $0.3\sim 10\text{ s}$, after the compressing and molding, demolding to obtain a green body, heating the green body at $120\sim 200\text{ }^\circ\text{C}$ and obtaining a rough blank for precision machining. And the high-compactness bonded rare earth permanent magnet of the present invention shortens distances among micro powder particles in the bonded magnet effectively, greatly enhances the magnetization effect of micro powder and strengthens the interaction force thereof after magnetization, so the bonded rare earth permanent magnet achieves significantly improved performance, thereby substantially raising utilization of rare earth permanent magnetic powder.

No Figure