

ABSTRACT

**WEAR-RESISTANT AND CORROSION-RESISTANT IRON-BASED
ALLOY POWDER FOR LASER CLADDING AND LASER CLADDING
LAYER THEREOF**

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The present disclosure provides a wear-resistant and corrosion-resistant iron-based alloy powder for laser cladding, comprising: the following components in mass percentages: C: 2.5-3.0%, Cr: 29-31%, Ni: 8.3- 8.5%, V: 7.5-8%, Ti: 1.6-1.8%, Fe balance, the total mass of each component is 100%. The cladding layer formed by the iron-based alloy powder of the present disclosure has good wear resistance and corrosion resistance, high strength and toughness, and excellent welding performance. The prepared cladding layer is dense and crack-free, and can overcome the chilling cracking problem caused by high cladding rate; the cladding layer formed by the iron-based alloy powder of the present disclosure has a corrosion resistance up to level 9 of the national standard (GB/T6461 2002), a hardness of 61HRC~63HRC, and a yield strength of 1700 ~1900MPa.