

# Effect of Laser Processing Modes on Selective Laser Melting of Fe<sub>86</sub>B<sub>14</sub> Amorphous Alloys

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**Abstract.** In this work, the possibility of using low-power laser radiation to obtain bulk amorphous alloys by the method of selective laser melting was studied. For this purpose, the effect of laser radiation with a power of 15, 25 and 40 W on the surface morphology and structure of Fe<sub>86</sub>B<sub>14</sub> amorphous ribbons and powders was studied. Irradiation was carried out at scanning speeds of 1000, 2000 and 4000 mm/s for each laser power mode. The result of laser treatment was studied by the methods of X-ray diffraction and scanning electron microscopy. The research made it possible to determine the optimal processing parameters for obtaining a bulk alloy with the maximum amount of the amorphous phase.

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