as well as phases of high concentrations of Mn and Al. In addition, the morphology of the composite structure of alloyed area was achieved due to the change of the alloy from hypoeutectic into hypereutectic, depending on the arrangement of alloyed elements and change of the process parameters of laser surface treatment. The applied laser processing parameters also affect the surface roughness of casting magnesium alloys after laser treatment. With invariable speed of scanning and intensity of powder feed together with the increase of laser power surface roughness is reduced. Measured surface roughness is in the range from 4.0 μm to 42.5 μm. In Mg-Al-Zn casting magnesium alloys which underwent cladding and remelting by carbides and oxides, resulting in fragmentation of the grains and the presence of hard particles of used powders, maximum hardness of about 103 HRF was obtained for the MCMgAl12Zn1 alloy alloyed with titanium carbide with a laser power of 1.2 kW and the alloying speed of 0.5 m/min. One may think that such manufactured materials may be used in mass production of items of equipment and vehicle construction in the automotive and aviation industry.

Generally, this chapter, which is a practical application of methodology of foresight and materials science research to a given technology having practical industrial meaning, indicates that it is intentional, reasonable and useful to use the methodology presented theoretically in previous works [40, 41] to analyze the value, strategic development tracks and the outworking of technology roadmaps of forming structure and surface properties of engineering materials. This methodology will therefore be used for other technologies and in relation to other engineering materials in their further own research and presented in subsequent publications. It is intentional also to use not only the evaluations made by key experts, but also to analyse the results of surveys carried out by a broad group of industry experts in which the possibilities of e-foresight, theoretically worked out in the own work will be fully applied [41].

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