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ENVIRONMENTALLY FRIENDLY PROCESSINGS BY ELECTROMAGNETIC FORMING IN AUTOMOTIVE INDUSTRY

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Abstract

Reduction of environmental pollution in general, and emissions of greenhouse gases in particular, remain priorities for the sustainable development of human society. The strategies applied for designing industrial manufacturing processes were radically changed; nowadays the focus is mainly on the efficient use of energy sources. This means that at this moment there is a huge demand for innovative environmentally friendly technologies, for various industrial processing sectors. Electromagnetic forming is an advanced plastic deformation technology and is considered by many authors an environment friendly technology. Current studies suggest to apply electromagnetic forming in the automotive industry for the manufacture of low fuel consumption cars. It is expected that reducing the weight of cars (which supposes the manufacture of light car bodies by electromagnetic forming), will lead to a reduction in CO₂ emissions. Electric energy consumption for obtaining car parts by electromagnetic forming proposed in this paper is about 50 times lower than in case of conventional forming of these parts.

Keywords: electromagnetic forming, environmentally friendly technology, greenhouse gas emissions, transport sector

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