DEVELOPMENT AND CHARACTERISTICS OF METAL-POLYMER LAMINATES

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Abstract: For the last 20 years, research about impact-resistant polymeric materials is going intensively. The issue is a modern actual scientific and technical problem. Such material includes Metal-Polymer laminates. Metal-Polymer laminates are hybrid composite materials that consist of conventional fiber reinforced plastics with the addition of a metal component, typically a foil or mesh layers. While a range of potential advantages and applications have been discussed for such materials, the primary application to date has been for aircraft structures. Nowadays, laminates find its use in construction. Aim of Research is developing of metal-polymer laminate type materials with improved mechanical properties which will have a wide range of applications. Such kind of materials were obtained by the scientists at the Grigol Tsulukidze Mining Institute. In terms of the development of polymer chemistry, it is possible to produce such composites with targeted properties and use of synthetic fiber reinforced materials, that would satisfy wide–specter exploitation conditions, namely, the conditions of dynamic loads on material. The advantage of the proposed technology for making metal-polymer laminate compared to other technologies are lower costs of electricity (30-40% less), the possibility of receiving large-sized products/details and 40-50% lower cost of labor.

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