Influence of Laser Beam on Polymer Material

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The article deals with the area of non-conventional technologies, specifically with the effect of concentrated radiant energy on the polymer material. There was studied the laser beam and its application to two different types of polymeric materials in details. PMMA, as a representative of the amorphous polymers and POM, which is a crystalline polymer, was used for experimental cutting as they are frequently applied in industrial practice. The input technological parameters were changed during machining followed by evaluation of their interaction with the concentrated radiant energy of the laser beam. The results were subjected to statistical evaluated by regression. The regression analysis was used as the main mathematical tool, concretely using linear regression models with confidence intervals for predictions on the confidence level 0.95.

Keywords: Non-conventional technologies, Laser, Polymer material, Statistical processing

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