
ABSTRACTS

*Received: 20 June 2016**Accepted: 17 July 2016***DISPLACEMENT AMPLIFYING SYSTEMS**

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Keywords: mechatronics, actuator, displacement, amplifying, stroke

Abstract: Actuator is a part of mechatronic product and low stroke actuator are frequently used mainly in small dimension mechatronic product. Low stroke actuators include piezoelectric actuators (PZT), magnetostrictive actuators (GMA), shape memory alloy actuator (SMA) etc. These actuators have higher efficiency in small scale dimensions than electromagnetic actuators, but these actuators has lower stroke. This problem can be solved via using of amplifying system. Paper presents possible way of amplifying system and application of these systems.

*Received: 22 June 2016**Accepted: 18 July 2016***DIGITAL TRACKING CONTROL OF PRECISION MOTION
SERVOSYSTEM**

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Keywords: digital control, trajectory tracking, servomechanism, feedforward

Abstract: This paper presents model based digital tracking controller design for precision motion systems. As a demonstrating motion system is used geared permanent magnet DC motor with position sensor. Proposed controller consists of two parts. A feedback part allows tracking the reference signal and rejecting the plant disturbances and a

feedforward part improves the tracking accuracy, especially in case of use time varying reference signal. Simulation results are presented.

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PARAMETRIC STRUCTURING OF PRODUCTION SYSTEMS TROUGHT ZONAL MODELS

(pages 11-18)

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Keywords: zonal parameterization, project preparation of production, mathematical modification, spatial optimization

Abstract: Spatial optimization of machine production is an important element of project preparation of future production. The paper points out the fact that optimal dimensional models of future production is not just a matter of physical positions of manufacturing techniques, but it is also multicriterial function dependant for example on construction configuration of device and its peripheral elements, dimensional characteristics of production facilities, ergonomics, service availability, etc. CAD is a modifying variant of the production structure. In general is valid a principle that every unused space is costing us money. However, under sizing spatial patterns of production structures may cause us full range of partial issues for instance in logistics etc. An important implementation to tackle the problem is approaches based on mathematical modelling. The paper illustrates the mathematical modification of partial spatial analysis of possible 2D zonal solution as a necessary part in creating of the final model production. The suggested models of topological relations of constructed equipment of production models provide possibility of optimization of location problems. The models of topological relations in production systems are characterized of universality in application conditions and are suitable for designing automated production systems.
