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## **Possibilities of application measurement techniques in hot die forging processes**

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### **ABSTRACT**

The article is a review presenting the possibilities of applying modern measuring techniques in the forging industry by using various measuring tools, instruments and machines applied in workshop metrology. The work points to different aspects of measuring techniques, emphasizing their importance in the context of safety (achieved forgings – products) and to significant measurement problems due to the extreme conditions in hot forging industrial processes (high cyclic mechanical loads and temperatures). The work also analyses the possibility and validity of applying scanning techniques for the purpose of directly monitoring the quality and changes in geometry of tools in industrial forging processes, without the necessity of dismounting them. In addition, applications of numerical modelling results (FEM) for determining physical quantities that are difficult or impossible to test under industrial conditions (temperature distributions, stresses, deformations, etc.) are presented. The work also presents other options of measuring techniques in the forging industry - including for evaluation of temperature measurements of forging tools, for analysis and improvement of forging tool lifetime, checking the technical condition of forging machines and equipment, as well as for building control and measurement systems with regard to forging forces.

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