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Development of spike test method to improve numerical model accuracy

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Numerical simulations are among the most widely used time and cost-saving tools for optimizing forming processes. Regardless of the software used, the prediction of material behaviour depends on the accuracy of input data, which may be difficult to achieve. The accuracy of input data has a direct effect on the accuracy of the results. One of the quantities which are difficult to determine is the coefficient of friction between the tool and the workpiece. Spike test is a method for determining the magnitude of this coefficient. It is a plain technological test which relies on material flow in a special die. The test specimen is a cylinder of specific dimensions. The result is a forging whose shape reflects the magnitude of the friction coefficient. The present paper describes the technological test itself and its implementation in the numerical model used by the DEFORM software.

Biography

Michal Duchek earned his Master's degree from the University of West Bohemia in Pilsen in 2006. Since that year, he has been a researcher in the department of metallurgical technology and heat treatment of the company COMTES FHT. He authored several research papers and utility designs.

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