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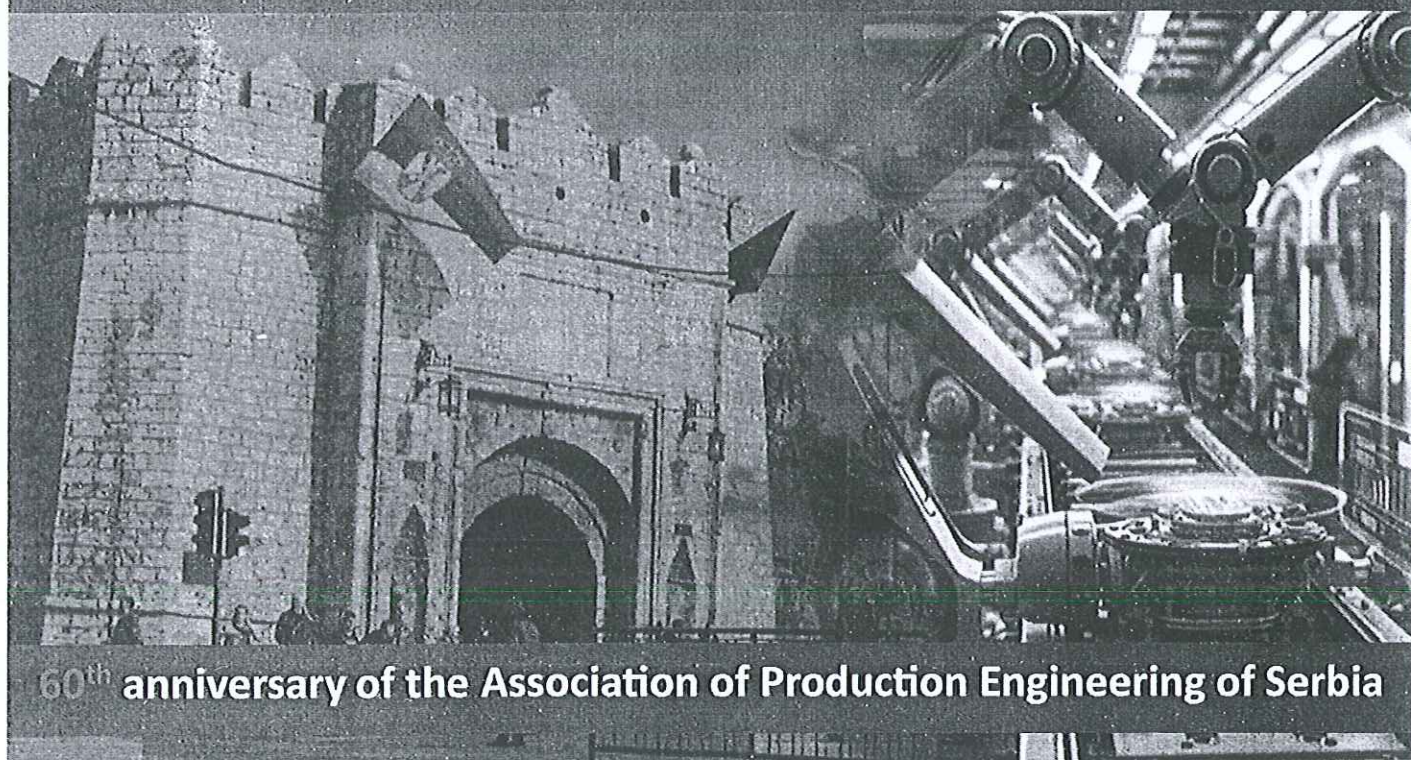
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**MEASUREMENT OF NOISE AND VIBRATION IN THE CUTTING ZONE
DURING TURNING**

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Abstract: Turning is a complex machining process due to the influence of numerous factors and is accompanied by the occurrence of noise as well as forced and self-excited vibrations. Measuring these quantities enables more accurate modeling of the cutting process and the determination of optimal machining conditions. In this study, sound energy and vibrations during the turning process were measured, and the measurement methodology was described. The selected input machining parameters were: cutting speed (v), depth of cut (a), and feed rate (s). Optimal machining conditions were then determined using the Particle Swarm Optimization (PSO) method.

Keywords: Noise, Vibrations, Particle Swarm Optimization (PSO)