



*“Gheorghe Asachi” Technical University of Iasi, Romania*



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## **BATCH COMPOSITION OPTIMIZATION FOR THE COPPER SMELTING PROCESS ON THE EXAMPLE OF COPPER SMELTER IN BOR**

**Ivan Jovanović\*, Đorđe Nikolić, Marija Savić, Živan Živković**

*University of Belgrade, Technical Faculty in Bor, 12Vojske Jugoslavije, Bor, Serbia*

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### **Abstract**

This paper presents a mathematical model developed to solve the problem of adequate blending composition for copper smelting process and it is exclusively for the purpose of the case study in "RTB BOR" (Copper Smelter in Bor). The model proposes an objective function, which maximizes the profit by calculating both the "penalties" for the hazardous concentrate elements and "benefits" for the useful ones. Apart from the basic constraints of the existing mathematical models, three new groups of constraints are identified. Some constraints are deducible from the copper smelting process itself and some result from the ecological aspect of the production-related process. A slightly altered version of the model is applicable to the other production processes, as well.

*Key words:* batch optimization, blending composition, environmental, penalties and bonuses

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