

UNIVERSITY OF BELGRADE  
TECHNICAL FACULTY IN BOR



# BOOK OF ABSTRACTS

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15.	<i>Student: Milena Stajić; Mentor: Uroš Stamenković (Serbia)</i> <i>EFFECT OF THE AUSTENITIZING TEMPERATURE ON THE PROPERTIES OF 51CrV4 SPRING STEEL</i>	23
16.	<i>Students: Željka Nikolić, Nebojša Radović; Mentor: Olga Tešović (Serbia)</i> <i>WHY SHOULD USED CREOSOT IMPREGNATED WOOD WASTE BE CHARACTERIZED AS HAZARDOUS?</i>	25
17.	<i>Students: Nebojša Radović, Željka Nikolić; Mentor: Ksenija Stojanović (Serbia)</i> <i>CAPTURING SULFUR DIOXIDE AT ITS SOURCE: SIMPLE AND EFFICIENT METHOD FOR SAMPLING AND QUANTIFICATION</i>	27
18.	<i>Student: Milan Nedeljković; Mentors: Srba Mladenović, Jasmina Petrović (Serbia)</i> <i>STUDIES OF THE INFLUENCE OF GRAPHENE NANOSHEETS ON THE WETTABILITY OF LEAD-FREE SOLDER ALLOYS</i>	28
19.	<i>Students: Tamara Tasić, Vedran Milanković; Mentor: Tamara Lazarević-Pašti (Serbia)</i> <i>ACTIVATED POROUS CARBON MATERIALS DERIVED FROM VISCOSE FIBERS FOR CHLORPYRIFOS REMOVAL FROM WATER</i>	29
20.	<i>Students: Veljko Pelić, Sandra Milićević; Mentors: Žaklina Tasić, Maja Nujkić (Serbia)</i> <i>THE EFFICIENCY OF NICKEL ION ADSORPTION FROM SYNTHETIC SOLUTIONS USING MULLEIN</i>	30
21.	<i>Students: Sandra Milićević, Veljko Pelić; Mentors: Maja Nujkić, Žaklina Tasić (Serbia)</i> <i>THE EFFICIENCY OF ZINC ION ADSORPTION FROM SYNTHETIC SOLUTIONS USING MULLEIN</i>	31
22.	<i>Student: Andreja Grujić; Mentor: Srba Mladenović (Serbia)</i> <i>APPLICATION OF SOFTWARE PACKAGES IN THE VISUALIZATION OF THE CASTING PROCESS-EXPERIENCE</i>	32
23.	<i>Students: Jovana Mitrović, Milica Borisavljević, Vanja Milovanović, Predrag Radulović; Mentor: Filip Miletić (Serbia)</i> <i>ANALYSIS OF WORKING EFFICIENCY OF THE BUCKET WHEEL EXCAVATOR SCHRS 1400.28/3 ON OPEN CAST MINE FIELD C</i>	33
24.	<i>Students: Marko Krpić, Aleksandar Đorđević; Mentor: Boris Rajčić (Serbia)</i> <i>INVESTIGATION ON THE CO<sub>2</sub> BREAKTHROUGH BEHAVIOUR OF DIFFERENT MATERIALS</i>	35
25.	<i>Students: Željka Nikolić, Adrijana Šutulović, Boris Rajčić, Dubravka Milovanović, Vladimir Nikolić, Zoran Šaponjić; Mentor: Milica Marčeta (Serbia)</i> <i>TRACKING THE ABSORPTION ABILITY OF EXHAUST GASES MODEL MIXTURE USING AN AQUEOUS SOLUTIONS OF NaOH AND KOH</i>	36
26.	<i>Students: Nebojša Radović, Željka Nikolić; Mentor: Olga Tešović (Serbia)</i> <i>MANAGING THE HAZARDOUS CHEMICAL WASTE IN LABORATORIES: ARE WE ON THE RIGHT PATH?</i>	38
27.	<i>Students: Marija Divac, Lana Mitrovic, Jovana Milosevic, Marko Rakita; Mentor: Filip Miletić (Serbia)</i> <i>MODELLING AND STRESS ANALYSIS OF MACHINE ELEMENTS IN SOLIDWORKS SOFTWARE</i>	40
28.	<i>Student: Vesna Miljić; Mentors: Bojan Miljević, Snežana Vučetić (Serbia)</i> <i>VISIBLE-LIGHT PHOTOCATALYTIC DEGRADATION OF MODEL POLLUTANT (MO-METHYL ORANGE) IN SOLID-STATE</i>	41

## ANALYSIS OF WORKING EFFICIENCY OF THE BUCKET WHEEL EXCAVATOR SCHRS 1400.28/3 ON OPEN CAST MINE FIELD C

Students: Jovana Mitrović, Milica Borisavljević, Vanja Milovanović, Predrag Radulović

Mentor: Filip Miletić

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### Abstract

The paper analyzes the effectiveness of the bucket wheel excavator SchRs1400.28/3, which is engaged in the exploitation of overburden within the IV BTO system of the open cast mine field C, which is part of the Electric Power Industry of Serbia. The analyzed period is from the beginning of the system operation, during 2016, ending with 2018. Paper observed the structure of the stoppage of the bucket wheel excavator in relation to the stoppage of the system (excavator-belt conveyors-spreader). Comparing the obtained results, it was concluded that in the system downtime structure, even half of the downtimes are related to the excavator. Based on the working time and the total calendar time, was determined the coefficient of time utilization, while the ratio between the realized production and the theoretical capacity of the excavator was given through the coefficient of capacity utilization. The achieved production in the first three years of the systems operation had an exponential growth trend. The coefficient of time utilization had a downward trend in the second year, due to the fact that the system was in the revitalization process. The capacity coefficient utilization had a growth trend in the second year, which is in full agreement with production jump. Figure 1 present system downtime structure, Figure 2 realized production, Figure 3 is given working and calendar time and Figure 4 Time and Capacity utilization of bucket wheel excavator.

**Keywords:** Bucket wheel excavator, Electric Power Industry of Serbia, overburden

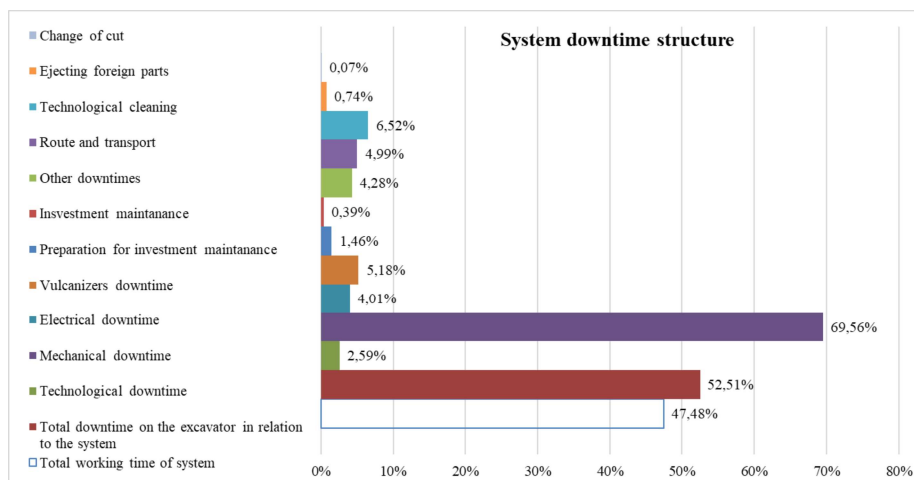


Figure 1 - System downtime structure [1]



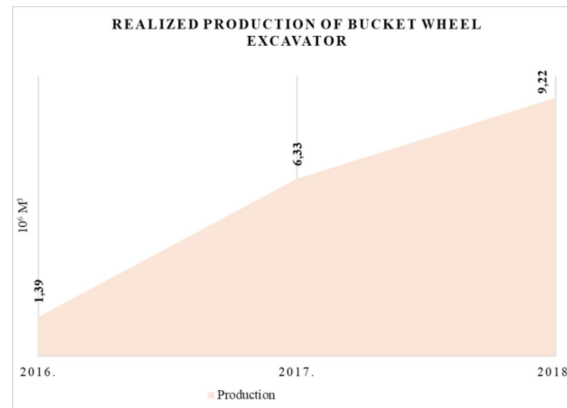


Figure 2 - Realized production of bucket wheel excavator [1]

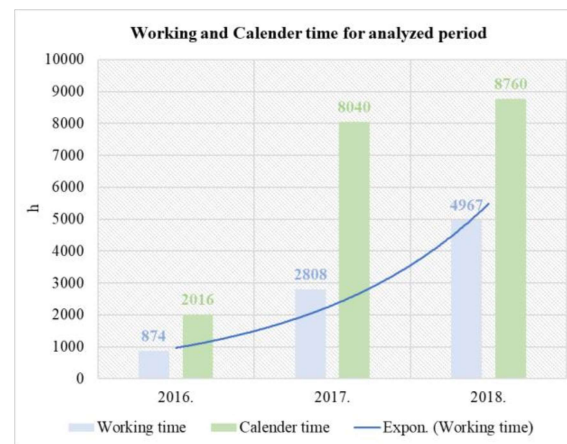


Figure 3 - Working and Calendar time [1]

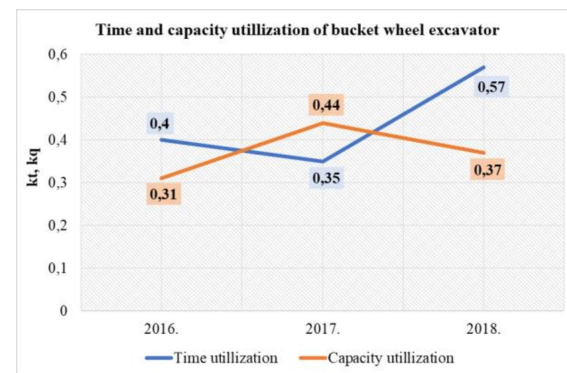


Figure 4 - Time and capacity utilization of bucket wheel excavator [1]

## REFERENCES

- [1] Technical documentation of Electric Power Industry of Serbia



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