



ISSN 1454-9166

**ANNALS  
OF THE UNIVERSITY OF PETROSANI**  
*MECHANICAL ENGINEERING*

**VOL. 16 (XLIII)**

**Editura UNIVERSITAS  
PETROȘANI – ROMANIA  
2014**

ISSN 1454-9166

---

**EDITOR OF PUBLICATION**

**Prof.Eng. Ioan-Lucian BOLUNDUȚ Ph.D.**

E-mail: ibol@upet.ro

---

**ADVISORY BOARD**

**Prof.Eng. Moise-Ioan ACHIM Ph.D.** - “1 Decembrie 1918” University of Alba-Iulia, *Romania*;  
**Prof.Eng. Niculae-Napoleon ANTONESCU Ph.D.** - “Petroleum-Gas” University of Ploiești, *Romania*;  
**Prof.Eng. Alexandru BOROIU Ph.D.** - University of Pitești, *Romania*; **Prof.Eng. Ioan CARTIȘ Ph.D.** - Politechnical University of Timișoara, *Romania*; **Prof.Eng. Ioan CURTU Ph.D.** - “Transilvania” University of Brașov, *Romania*; **Prof.Eng. Predrag DAŠIĆ Ph.D.** - High Technical Mechanical School R. Krstića, Trstenik, *Serbia*; **Prof.Eng. Sorin DIMITRIU Ph.D.** - “Politehnica” University of București, *Romania*; **Prof.Eng. Valeriu DULGHERU Ph.D.** - Technical University of Moldova, Chișinău, *Republic of Moldova*; **Prof.Eng. Carmen FLOREA Ph.D.** - University of Petroșani, *Romania*; **Assoc.Prof.Eng. António GONÇALVES-COELHO Ph.D.** - Universidade Nova de Lisboa, *Portugal*; **Prof.Eng. Otto GRIGOROV Ph.D.** - National Technical University of Kharkov, *Ukraine*; **Prof.Eng. Anatoli GHRABCHENKO Ph.D.** - National Technical University of Kharkov, *Ukraine*; **Prof.Eng. Nicolae ILIAȘ Ph.D.** - University of Petroșani, *Romania*; **Prof.Eng. Ioan-Iulian IRIMIE Ph.D.** - University of Petroșani, *Romania*; **Prof.Eng. Iosif KOVACS Ph.D.** - University of Petroșani, *Romania*; **Assoc.Prof.Eng. Gábor LADÁNYI Ph.D.** - University of Miskolc, *Hungary*; **Prof.Eng. Andrei MAGYARI Ph.D.** - University of Petroșani, *Romania*; **Assoc.Prof.Eng. Traian MAZILU Ph.D.** - “Politehnica” University of București, *Romania*; **Prof.Eng. Marin-Silviu NAN Ph.D.** - University of Petroșani, *Romania*; **Prof.Eng. Gyula PATKO Ph.D.** - University of Miskolc, *Hungary*; **Prof.Eng. Eugen PAY Ph.D.** - North University of Baia-Mare, *Romania*; **Assoc.Prof.Eng. Eugen PĂMÎNȚĂȘ Ph.D.** - Politechnical University of Timișoara, *Romania*; **Prof.Eng. Sorin-Mihai RADU Ph.D.** - University of Petroșani, *Romania*; **Prof.Eng. Șerban RAICU Ph.D.** - “Politehnica” University of București, *Romania*; **Prof.Eng. Janusz REŚ Ph.D.** - AGH University of Science and Technology, *Poland*; **Prof.Eng. Alexei TOCA Ph.D.** - Technical University of Moldova, Chișinău, *Republic of Moldova*; **Prof.Eng. Raul R. TURMANIDZE Ph.D.** - Technical University of Tbilisi, *Georgia*; **Prof.Eng. Vlad ULMANU Ph.D.** - “Petroleum-Gas” University of Ploiești, *Romania*; **Prof.Eng. Nicolae UNGUREANU Ph.D.** - Technical University of Cluj-Napoca, *Romania*

---

**EDITORIAL BOARD**

**Editor-in-chief:** **Assoc.Prof.Eng. Sorin MIHĂILESCU Ph.D.** - University of Petroșani, *Romania*

**Associate Editors:** **Prof.Eng. Iosif ANDRAȘ Ph.D.** - University of Petroșani, *Romania*; **Assoc.Prof.Eng. Iosif DUMITRESCU Ph.D.** - University of Petroșani, *Romania*; **Prof.Eng. Iosif GRUNEANȚU Ph.D.** - University of Petroșani, *Romania*; **Assoc.Prof.Eng. Gabriel PRAPORGESCU Ph.D.** - University of Petroșani, *Romania*; **Assoc.Prof.Eng. Sorin VĂTAVU Ph.D.** - University of Petroșani, *Romania*

**Editor Secretary:** **Lecturer Eng. Andrei ANDRAȘ Ph.D.** - University of Petroșani, *Romania*

---

**Editorial office address:**

University of Petroșani, 20 University Street, RO-332006 Petroșani, Romania,  
**Phone:** (40) 254/542994, 542580, 542581, 543382; **Fax:** (40) 254/543491;  
**Telex:** 72524 univp; **E-mail:** mihailescus@gmail.com; andrei.andras@gmail.com

---

## Contents

	pag.
Armășoiu, P., Florea, V. A., <i>Research on the Possibilities of Improving the Vulcanization Rubber Conveyor Belts</i> .....	5
Doșa, I., <i>Pressure Drop in the Suction Line of TK R16/8 Turbo Compressor</i> ....	11
Dumitrescu, I., Mihăilescu, S., <i>The Hydraulic of the 350 kN Press for Aluminum Cans Baling</i> .....	17
Ilioni, C., Nan, M.-S., Costa, C., <i>Study on Reducing Accidents Caused by the Human Error in the Mining Field</i> .....	25
Kotwica, K., <i>The New Solution of Lubricated Holder for Tangential Rotary Picks Reducing Their Wear during the Mining of Hard Rocks</i> .....	31
Magyari, A., Petrescu, A., <i>Determination of the Average Prescribed Values of the Parameters for Maintaining a Constant Autoclaving Temperature of the AAC</i> .....	41
Mihăilescu, S., Praporgescu, G., <i>Laboratory Method Used for Determining of the Characteristics of the Cutting Soft Rock</i> .....	49
Petrescu, A., Magyari, A., <i>The Automatic Tracking of Depositing the Tiles from the Production Line</i> .....	59
Praporgescu, G., Mihăilescu, S., <i>Research on Adjusting Working Regime for Mechanized Drilling Blast Holes</i> .....	67
Rostami, E., Ommi, F., Mirmohammadi, A., Khodayari, H., <i>Investigation of the Effect of Liquid and Air Swirl Velocity and Liquid Viscosity on the Hollow Cone Spray Atomization</i> .....	75
Simashevici, A., <i>Theoretical and Practical Considerations in Diagnosing Deficiencies of Flexible Joint of the Gliding Steel Timbering and Suggests for the Improvement of Performances</i> .....	91
Index of Authors .....	103
Instructions for Authors .....	104

### INDEX OF AUTHORS

<b>A</b> rmășoiu, P.,	5	<b>M</b> agyari, A.,	41, 59
<b>C</b> osta, C.,	25	<b>M</b> ihăilescu, S.,	17, 49, 67
<b>D</b> oșa, I.,	11	<b>M</b> irmohammadi, A.,	75
<b>D</b> umitrescu, I.,	17	<b>N</b> an, M.-S.,	25
<b>F</b> lorea, V. A.,	5	<b>O</b> mmi, F.,	75
<b>I</b> lioni, C.,	25	<b>P</b> etrescu, A.,	41, 59
<b>K</b> hodayari, H.,	75	<b>P</b> raporgescu, G.,	49, 67
<b>K</b> otwica, K.,	31	<b>R</b> ostami, E.,	75
		<b>S</b> imaschevici, A.,	91

## **INSTRUCTIONS FOR AUTHORS<sup>1</sup>**

**THE TITLE OF THE PAPER WILL BE WRITTEN WITH CAPITAL LETTERS, CENTERED, AT 7.0 cm FROM THE UPPER EDGE OF A4 FORMAT, ALONG THE ENTIRE WIDTH, TIMES NEW ROMAN, 14 POINTS, BOLD.**

· (14 points)

· (14 points)

**The first name and the family name will be written with CAPITAL LETTERS, BOLD, CENTERED, 130 mm width, Times New Roman, 12 points, each name being followed by number, and in the footnote the didactic and scientific degree, the position and place of work of the authors (possibly fax, E-mail) are indicated, with italics, 130 mm width, Times New Roman, 11 points.**

· (12 points)

· (12 points)

**<Tab> Abstract: (Times New Roman, 10 points, bold)** The Abstract will only be in English and will have between 50 and 100 words, arranged all over the entire width, single, left – right alignment, all over the width of the printed space, Times New Roman, 10 points.

· (10 points)

· (10 points)

**<Tab> Key words: (Times New Roman, 10 points, bold)** 5 – 10 words, in English, along the entire width, Times New Roman, 10 points.

· (10 points)

· (10 points)

· (10 points)

**<Tab> 1. THE TITLE OF THE CHAPTER IS WRITTEN WITH CAPITAL LETTERS, BOLD, TIMES NEW ROMAN, 11 POINTS AND WILL BE NUMBERED WITH ARABIC NUMBERS.**

· (11 points)

**<Tab>** The paper text paragraphs will be left – right aligned. The lines of the entire text will be single spaced with Times New Roman fonts, size 11 points.

The paper will be edited in a language of international circulation (English, French, German) on A4 format (210 x 297), page setup: top 5.6 cm, bottom 4.6 cm, left 3.7 cm, right 3.7 cm, in WORD and the number of pages must be even between 4 and 16. The size of the symbol is given next and is written in the instructions used to assist in editing the text. It indicates a blank line and does not show in the text of the paper, being obtained by pressing <ENTER>. The size of a <Tab> is 1.27 cm. No blank line is left between the paragraphs. Between the last line before the title and the title of the chapter and between the title and the first next line a blank line is left for each.

---

<sup>1</sup> *Professor Eng., Ph.D. at the University of Petroşani, email adress*

**<Tab> 1.1 Subchapter. Subchapters can be used in the text, numbered with the number of the chapter and a number showing the number of the subtitle within the chapter. The subchapters and the numbers are Times New Roman, 11 points, bold.**

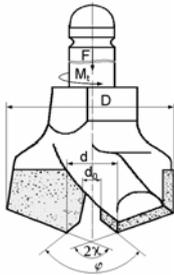
· (11 points)

The text is written in new paragraph and not continuing the subtitle, an 11 point blank line being left between the subtitle and the following text.

· (11 points)

## **2. PRESENTATION OF THE FIGURES**

· (11 points)



**Fig. 1.** Detachable bit

Figures should be enclosed in the text in the order of their presentation, as far as possible on the page where reference is made to them. They shall be numbered with Arabic numbers. Black – and – white, high contrast figures are recommended. Photos can be used as well, but they should be of good quality, clarity and sufficient contrast. The figures will have a legend (name of the figure), which, along with the number, will be written underneath with Times New Roman, 10 points, centered as to the figure. The figures will be surrounded by text.

· (11 points)

## **3. PRESENTATION OF THE TABLES**

· (11 points)

The tables will be enclosed in the text, a 10 points blank line being left above and under the table, and will be numbered with Arabic numbers. Both the number and the explanations to the table are written with Times New Roman, 10 points, italic, for the number and bold for the explanation to the table, centered in the space of the table and above it. The table entries will be Times New Roman, 10 points, bold, and the data in the table will be Times New Roman, 10 points. The thin lines of the table will be ½ points (0.02 cm), and the thick ones will be ¾ ... 1 points (0.03 ... 0.04 cm).

· (11 points)

## **4. PRESENTATION OF THE MATHEMATICAL EQUATIONS**

· (11 points)

The mathematical equations will be with times New Roman, 11 points, center of the page and numbered on the right with Arabic numbers between round brackets.

· (8 points) <Blank line 8 point high>

$$X^2 + Y^2 = Z^2 \quad (1)$$

· (8 points) <Blank line 8 point high>

An 8 point high blank line is left between the last line before the relation and the relation and between the latter and the next first line.

The last page will be at least 2/3 full.

The pages of the paper will only be numbered by a pencil outside the printing space.

· (11 points)

**REFERENCES** (will be written according to the model, Times New Roman 10 points).

· (10 points)

[1]. **Marian I.**, *Mining mechanization*, Technical Publishing House, Bucharest, 1969 (Romanian language)