

# PHYSICOCHEMICAL PROBLEMS OF MINERAL PROCESSING

An international journal which covers theoretical approaches and their practical applications in all aspects of mineral processing and extractive metallurgy

ISSN 1643-1049 (print)  
ISSN 2084-4735 (online)

Published by the Faculty of Geoengineering, Mining and Geology, Wrocław University of Science and Technology

## Information and detailed guidelines for Authors

### DESCRIPTION

---

Physicochemical Problems of Mineral Processing is an international journal which covers theoretical approaches and their practical applications in all aspects of mineral processing and extractive metallurgy.

Criteria for publication in the Physicochemical Problems of Mineral Processing journal are novelty, quality and current interest. Manuscripts **which only make routine use of minor extensions to well established methodologies are not appropriate for the journal.**

#### Topics of interest

- Analytical techniques and applied mineralogy
- Computer applications
- Comminution, classification and sorting
- Froth flotation
- Solid-liquid separation
- Gravity concentration
- Magnetic and electric separation
- Hydro- and biohydrometallurgy
- Extractive metallurgy
- Recycling and mineral wastes
- Environmental aspects of mineral processing
- Properties of mineral matter and its components
- and other mineral processing related subjects.

### IMPACT FACTOR

---

2015: 0.997 © Thomson Reuters Journal Citation Reports 2016

### ABSTRACTING AND INDEXING

---

BazTech, Chemical Abstracts, Coal Abstracts, EBSCO, Google Scholar, Scopus, Thomson Reuters (Science Citation Index Expanded, Materials Science Citation Index, Journal Citation Reports) and other sources.

## EDITORIAL BOARD

---

### Editors-in-Chief

**Przemyslaw B. Kowalczyk**, *Wroclaw University of Science and Technology, Poland and Norwegian University of Science and Technology, Norway*

**Jan Drzymala**, *Wroclaw University of Science and Technology, Poland*

### Founding Editor

**Janusz Laskowski**, *University of British Columbia, Canada*

### Former Editors-in-Chief

**Janusz Lekki†**, *Wroclaw University of Technology, Poland*

**Andrzej Luszczkiewicz**, *Wroclaw University of Science and Technology, Poland*

**Pawel Nowak**, *Polish Academy of Science, Poland*

**Zygmunt Sadowski**, *Wroclaw University of Science and Technology, Poland*

### Editors

**Emre Naci Altun**, *Middle East Technical University, Turkey*

**Jari Aromaa**, *Aalto University, Finland*

**Filip Ciesielczyk**, *Poznan University of Technology, Poland*

**Hao Du**, *Chinese Academy of Science, China*

**Zhiyong Gao**, *Central South University, China*

**Christian Jungnickel**, *Gdansk University of Technology, Poland*

**Marcin Lutynski**, *Silesian University of Technology, Poland*

**Orhan Ozdemir**, *Istanbul University, Turkey*

**Magdalena Regel-Rosocka**, *Poznan University of Technology, Poland*

**Oktay Sahbaz**, *Dumlupinar University, Turkey*

**Xuming Wang**, *University of Utah, USA*

**Jan Zawala**, *Polish Academy of Science, Poland*

### Editorial advisory board

**El-Sayed Ali Abdel-Aal**, *Central Metallurgical R&D Institute, Egypt*

**Tomasz Chmielewski**, *Wroclaw University of Science and Technology, Poland*

**Lev Filippov**, *University of Lorraine, France*

**Stoyan Gaydardzhiev**, *University of Liege, Belgium*

**Hylke J. Glass**, *University of Exeter, UK*

**Yuehua Hu**, *Central South University, China*

**Jan Hupka**, *Gdansk University of Technology, Poland*

**Shekwonayadu Iyakwari**, *Nasarawa State University, Nigeria*

**Teofil Jesionowski**, *Poznan University of Technology, Poland*

**Rolf Arne Kleiv**, *Norwegian University of Science and Technology, Norway*

**Andrzej Konieczny**, *Sierra Gorda SCM, Chile*

**Dariusz Lelinski**, *FLSmidth, USA*

**Mari Lundstrom**, *Aalto University, Finland*

**Tamara Matveyeva**, *Russian Academy of Science, Russia*

**Jan D. Miller**, *University of Utah, USA*

**Gabor Musci**, *University of Miskolc, Hungary*

**Katarzyna Ochrowicz**, *Wroclaw University of Science Technology, Poland*

**Urs A. Peuker**, *Technische Universitat Bergakademie Freiberg, Germany*

**Izabela Polowczyk**, *Wroclaw University of Science Technology, Poland*

**Pradip**, *Tata R&D Design Centre, India*

**Jovica Sokolovic**, *University of Belgrade, Serbia*

**Erik Spiller**, *Colorado School of Mines, USA*

**Adem Tasdemir**, *Eskisehir Osmangazi University, Turkey*

**Barbara Tora**, *AGH University of Science and Technology, Poland*

## GUIDE FOR AUTHORS

---

### **Submission**

Submitted papers must be clearly written in excellent English (American or British usage is accepted, but not a mixture of these). Those whose English is not native language should ask a

competent person for language verification. The authors will be asked to provide either a certificate or name of the company/linguistic editor who was responsible for English language verification.

The manuscript should be submitted through the Editorial System available at <http://www.editorialsystem.com/ppmp>. The online submission system will guide you stepwise through the process of entering your article details and uploading your files.

### **Statements**

Manuscripts must contain **only original work** which has not been previously published or be under consideration for publication elsewhere. In case a paper has been already presented at a conference, it should be extended by at least 30% new technical contributions, before submission. Authors are requested to attach to the submitted paper their relevant, previously published article and summary explaining the improvements made in the journal version. The difference in contributions between the two versions should also be stated in the submitted article.

In addition, a statement must accompany that the submitted manuscript clearly describes **the novelty** of the submitted manuscript and the contribution that it makes to the existing literature.

### **Copyright transfer agreement**

Authors are responsible for obtaining permission to reproduce copyrighted material from other sources and are required to sign an agreement for the transfer of copyright to the publisher (Faculty of Geoengineering, Mining and Geology, Wrocław University of Science and Technology). All accepted manuscripts, artwork, and photographs become the property of the publisher.

### **Referees**

Authors are requested to submit the names, full affiliation (department, institution, city and country) and email addresses of five potential Referees. Appropriate Referees should have no close connection with any of the authors. In addition, **Referees should be from institutions** (and preferably countries) **other than those of any of the Authors**.

## **PREPARATION**

The submitted manuscripts should adhere to the general principles of the Physicochemical Problems of Mineral Processing articles. The Authors are recommended to use MSWord to prepare their manuscript. **Papers should not exceed 12 pages** (one-column, at least 1.2-spacing, at least 12 pt fonts, with margins of at least 1.5 cm on all sides) including figures, tables, references etc. The pages should be consecutively numbered throughout the paper.

- ✓ **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- ✓ **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Type your first (given) name in small characters while your last name (family name) in capital. Author from countries in which such system does not exist must choose what in their opinion is the first and the last name. Consulting your passport can be helpful. Please do not use other than Latin characters in your names. Use, for instance u instead of ů, z instead of ž, y instead of ý, etc. On request we can print your name with the diacritical marks in the affiliation section  
  
Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a superscript star (e.g. \*, \*\*) immediately after the author's name and in front of the appropriate address. Provide the full postal address and e-mail address of the corresponding author.
- ✓ **Abstract.** A concise and factual abstract with no more than 250 words is required. The abstract should state briefly the research purpose, principal results and major conclusions. Avoid abbreviations, diagrams, formulae and references in the abstract.
- ✓ **Keywords.** Immediately after the abstract, provide a maximum of 6 keywords.
- ✓ **Article structure.** Divide your article into clearly defined sections. Subsections may be either numbered or given a brief heading. Each heading should appear on its own separate line.

**Introduction.** State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

**Material and methods.** Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

**Results and discussion.** A combined Results and Discussion section is often appropriate. Results should be clear and concise. Discussion should explore the significance of the results of the work.

**Conclusions.**

**Acknowledgements.** Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise.

- ✓ **Units.** Use only the international system of units (SI). If for any reason you have to use a non-SI unit, give its equivalent in SI. Do not use ml but cm<sup>3</sup>, not tonne but Mg, not 1 million tonne but Tg (that is teragram) etc.
- ✓ **Tables.** Please submit tables as editable text and not as images. Tables should be placed next to the relevant text in the article. Number tables consecutively in accordance with their appearance in the text. A short descriptive title should appear above each table with a clear legend and any footnotes suitably identified below. All units in SI must be included.
- ✓ **Figures.** Should be placed next to the relevant text in the article. Number figures consecutively in accordance with their appearance in the text. A short descriptive title should appear below each figure with a clear legend. All units in SI must be included. Figures must be of high quality, black and white (in very rare cases other colors are acceptable). Pasting figures from a drawing software is recommended through the paste special function. Do not use outer frames for your figures, fancy backgrounds, grid lines, etc. Keep your figure as simple as possible.
- ✓ **Formulae** (mathematical, chemical reactions etc). Paste you formulas into the text as editable text and not as images. It is recommended to use Microsoft Equation 3.0. Type symbols of parameters in italic mode while constants, function, and symbols of chemical elements in upright mode.
- ✓ **References.** Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. In the text use (last name, year) or when there are two authors type (last name and last name, year). In the case of three authors write (last name of the first author et al., year). When citing in the text more than one papers, separate the references with symbol ; . In the text show the cited references in the chronological order. In the References section show the cited publication in alphabetical order without numbers in the front. Show all the authors. Follow the examples:

BROZEK, M., MLYNARCZYKOWSKA, A., 2010, *Probability of Detachment of Particle Determined According to the Stochastic Model of Flotation Kinetics*, Physicochem. Probl. Miner. Process. 44, 23-34.

HUANG, X., EVANGELOU, V. P., 1994. *Suppression of pyrite oxidation rate by phosphate addition*, in : Environmental Geochemistry of Sulfide Oxidation, ACS Symposium Series 550, 562-573.

BEWERSDORFF, J., 2006. *Galois Theory for Beginners: A Historical Perspective*. American Mathematical Society, Providence, Chap. 2.

A DOI can be used to cite and link to electronic articles where an article is in-press and full citation details are not yet known, but the article is available online. A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is:

GUNGOREN, C., OZDEMIR, O., GOKHAN OZKAN, S., 2017, *Effects of temperature during ultrasonic conditioning in quartz-amine flotation*, Physicochem. Probl. Miner. Process., <http://dx.doi.org/10.5277/ppmp170201>.

Please note the format of such citations should be in the same style as all other references in the paper.

*Web references.* As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a

source publication, etc.), should also be given. Web references should be listed in the reference list.

### **AFTER ACCEPTANCE**

The accepted paper will be prepared for publication. Page proofs are sent to the corresponding author. They must be carefully checked and returned within 48 hours of receipt. We will do everything possible to get your article published quickly as possible.

### **Printing fee**

Once the accepted paper appears online the authors will be asked to pay a fee of 150 EUR for printing the paper. The fee should be paid to the account:

Bank: Bank Zachodni WBK, II/O Wrocław, Poland  
Account No. PL 37 1090 2402 0000 0006 1000 0434  
SWIFT code: WBKPPLPP  
Account name: Politechnika Wroclawska  
Please add the foot-note: 651017 and name of Author and Institution

---

Additional information can be found on the journal website <http://www.minproc.pwr.edu.pl/journal>

Correspondence regarding the journal should be sent to either [przemyslaw.kowalczyk@pwr.edu.pl](mailto:przemyslaw.kowalczyk@pwr.edu.pl) (Przemyslaw B. Kowalczyk) or [jan.drzymala@pwr.edu.pl](mailto:jan.drzymala@pwr.edu.pl) (Jan Drzymala).

Address of the Editorial Office

Wrocław University of Science Technology  
Faculty of Geoengineering, Mining and Geology  
Wybrzeże Wyspińskiego 27, 50-370 Wrocław, Poland