

ISSN 0869-2904

# EXPERIMENT

IN Mineralogy Crystallography  
Petrology Geophysics  
Geochemistry Isotopy

# GeoSciences

---

**2020** Volume **26** Number **1**



# EXPERIMENT

in Mineralogy Petrology Geochemistry Crystallography Geophysics Isotopy

# GeoSciences

Founded in 1991 by

INSTITUTE of  
EXPERIMENTAL

MINERALOGY

*Russian Academy of  
Sciences*

**EXPERIMENT IN GEOSCIENCES** is the only journal in English that gives you the latest, most reliable information on advances in experimental mineralogy, petrology, geochemistry, crystallography and geophysics in Russia. The coverage of the journal includes:

- original research and review articles
- abstracts of scientific papers
- proceedings, abstracts and announcements of national and international conferences, symposia and workshop
- information about the leading experimental centers in Russia
- advertisement of new techniques and equipment

Editor in Chief  
**O.G. Safonov**

Editors:  
T.F.Kazachenko  
[tanya@iem.ac.ru](mailto:tanya@iem.ac.ru)

Ass.Editors@Comp.graphics:  
M.S.Belova  
[belova@iem.ac.ru](mailto:belova@iem.ac.ru)

## Editorial Board

V. Yu. Chevychelov  
D.A.Chareev  
L.Lakshtanov  
O.A.Lukanin  
E.G.Osadchii  
Yu.N.Pal'yanov  
A.F.Redkin  
Yu.B.Shapovalov  
N.I.Suk  
M.V.Voronin

## **Institute of Experimental Mineralogy**

Russian Academy of Sciences  
142432 Chernogolovka  
Academica Osip'yana str, 4,  
Moscow region  
Russian Federation

<http://www.iem.ac.ru>

**TRANSLATED into ENGLISH by:**  
the authors

**Copyright (C) IEM**

Photographic reproduction, microfilm, electronic data base, video disks, or any other reproduction of text, figures, or tables from this journal is prohibited without the publishers' permission