

BULLETIN OF THE MINERAL RESEARCH AND EXPLORATION

Foreign Edition

2020

161

ISSN : 0026-4563

E-ISSN : 2651-3048

CONTENTS

Research Articles

- Uncertainty-volume fractal model for delineating copper mineralization controllers using geostatistical simulation in Nohkouhi volcanogenic massive sulfide deposit, Central Iran
..... Saeid HAJSADEGHI, Omid ASGHARI, Mirsaleh MIRMOHAMMADI, Peyman AFZAL and Seyed Ahmad MESHKANI 1
- The role of Variscan shortening in the control of mineralization deposition in Tadaout-Tizi N'rsas mining district (Eastern Anti-Atlas, Morocco)
..... Mustapha AIT DAOUD, Abdelhafid ESSALHI, Mourad ESSALHI and Abdeslam TOUMMITE 13
- 2D inverse modeling of the gravity field due to a chromite deposit using the Marquardt's algorithm and forced neural network
..... Ata ESHAGHZADEH, Sanaz SEYEDI SAHEBARI and Alireza DEHGHANPOUR 33
- Usability of PC-ash as lightweight aggregate in foam concrete
..... Metin DAVRAZ and Şemsettin KILINÇARSLAN 49
- Determination of the origin and recharge process of water resources in Salda Lake Basin by using the environmental, tritium and radiocarbon isotopes (Burdur/Turkey)
..... Simge VAROL, Ayşen DAVRAZ, Fatma AKSEVER, Şehnaz ŞENER, Erhan ŞENER, Bülent KIRKAN and Ahmet TOKGÖZLÜ 57
- Investigation on geoarchaeological structure of ancient port cities in the Lycia region
..... Su Güneş KABAKLI and M. Erkan KARAMAN 71
- Geochemical features and petrogenesis of Gökçeada volcanism, Çanakkale, NW Turkey
..... Pınar ŞEN, Ramazan SARI, Erdal ŞEN, Cahit DÖNMEZ, Serkan ÖZKÜMÜŞ and Şahset KÜÇÜKEFE 81
- Geology and formation of Nevruztepe Fe-Cu skarn mineralization (Kayseri-Turkey)
..... Deniz TİRİNGA, Bülent ATEŞÇİ, Yılmaz ÇELİK, Güvenç DEMİRKIRAN, Cahit DÖNMEZ, Aytekin TÜRKEL and Taner ÜNLÜ 101
- Drilling and core data from the Gulf of Gemlik (SE Sea of Marmara): Holocene fauna and flora assemblages
Engin MERİÇ, Zeki Ü. YÜMÜN, Atike NAZİK, Enis K. SAGULAR, M. Baki YOKEŞ,
..... Yeşim BÜYÜKMERİÇ, Ayşegül YILDIZ and Gülin YAVUZLAR 121
- Precise monitoring of temporal topographic change detection via unmanned air vehicle
..... Serkan KARAKIŞ, Umut Güneş SEFERCİK, Turhan BİLİR and Can ATALAY 151
- An example study on re-evaluation of historical earthquakes: 1789 Palu (Elazığ) earthquake, Eastern Anatolia, Turkey
..... Mehmet KÖKÜM and Fatih ÖZÇELİK 157
- Early Miocene seed like plant remain fossils and facies associations from the Nallıhan district (NW Turkey)
..... Muhittin GÖRMÜŞ, Yusuf Kağan KADIOĞLU, Baki Erdoğan VAROL and Muhammed Sami US 171
- Utilization of pumice of Burdur region and zeolite of Bigadiç - Balıkesir region as fine aggregate in construction materials
..... Özge BEYCAN TATANOĞLU and Niyazi Uğur KOÇKAL 191
- Bulletin of the Mineral Research and Exploration Notes to the Authors..... 201

OWNER ON BEHALF OF MTA GENERAL DIRECTORATE
GENERAL DIRECTOR
Cengiz ERDEM

EXECUTIVE PUBLICATION EDITORIAL BOARD

Erol TİMUR (Chairman)
Hafize AKILLI
Oğuz ALTUN
M. Özgü ARISOY
Huriye DEMİRCAN
Şule GÜRBOĞA
Fusun YİĞİT FETHİ

EDITOR-IN-CHIEF

Halim MUTLU (Ankara-Turkey)

ASSOCIATED EDITORS

Hafize AKILLI (Ankara-Turkey)
Sinan AKISKA (Ankara-Turkey)
Oğuz ALTUN (Ankara-Turkey)
M. Özgü ARISOY (Ankara-Turkey)
Dilek Gülnur DEMİRAY (Ankara-Turkey)

Huriye DEMİRCAN (Ankara-Turkey)
Şule GÜRBOĞA (Ankara-Turkey)
Fusun YİĞİT FETHİ (Ankara-Turkey)
Asuman KAHYA (Ankara-Turkey)

Sándor KELE (Hungary)
Neşe OYAL (Ankara-Turkey)
Eren PAMUK (Ankara-Turkey)
Pınar ŞEN (Ankara-Turkey)

ADVISORY BOARD

Erdin BOZKURT (Ankara-Turkey)
Osman CANDAN (İzmir-Turkey)
Ahmet GÖKÇE (Sivas-Turkey)
M. Cemal GÖNCÜOĞLU (Ankara-Turkey)
Nilgün GÜLEÇ (Ankara-Turkey)

Cahit HELVACI (İzmir-Turkey)
Kamil KAYABALI (Ankara-Turkey)
Nuretdin KAYMAKÇI (Ankara-Turkey)
Aral I. OKAY (İstanbul-Turkey)
Cengiz OKUYUCU (Konya-Turkey)

Osman PARLAK (Adana-Turkey)
Okan TÜYSÜZ (İstanbul-Turkey)
İbrahim UYSAL (Trabzon-Turkey)
Yücel YILMAZ (İstanbul-Turkey)

EDITORIAL BOARD

Peyman AFZAL (Iran)
Funda AKGÜN (İzmir-Turkey)
Mehmet ARSLAN (Trabzon-Turkey)
Serdar BAYARI (Ankara-Turkey)
Yavuz BEDİ (Ankara-Turkey)
Ömer BOZKAYA (Denizli-Turkey)
Emin CANDANSAYAR (Ankara-Turkey)
Ömer Faruk ÇELİK (Kocaeli-Turkey)
Emin ÇİFTÇİ (İstanbul-Turkey)
Atilla ÇİNER (İstanbul-Turkey)
Cengiz DEMİR (Trabzon-Turkey)
Harald DILL (Germany)
Mustafa Nuri DOLMAZ (Isparta-Turkey)
Bayram ERÇIKDI (Trabzon-Turkey)
Semih ERGİNTAV (İstanbul-Turkey)
Yalçın ERSOY (İzmir-Turkey)
Yener EYÜBOĞLU (Trabzon-Turkey)
Mustafa FENER (Ankara-Turkey)
Marie-Beatrice FOREL (France)
Yurdal GENÇ (Ankara-Turkey)
Klaus GESSNER (Germany)
Candan GÖKÇEOĞLU (Ankara-Turkey)
Muhittin GÖRMÜŞ (Ankara-Turkey)
Levent GÜLEN (Sakarya-Turkey)
Talip GÜNGÖR (İzmir-Turkey)
Zülfü GÜROCAK (Elazığ-Turkey)

Semih GÜRSU (Muğla-Turkey)
Nurullah HANILÇI (İstanbul-Turkey)
Murat HATİPOĞLU (İzmir-Turkey)
Zihni Mümtaz HİSARLI (İstanbul-Turkey)
James JACKSON (England)
Yusuf Kağan KADIOĞLU (Ankara-Turkey)
Selahattin KADİR (Eskişehir-Turkey)
Reyhan KARA GÜLBAY (Trabzon-Turkey)
Volkan KARABACAK (Eskişehir-Turkey)
Hüseyin KARAKUŞ (Kütahya-Turkey)
Ali İhsan KARAYİĞİT (Ankara-Turkey)
Nizamettin KAZANCI (Ankara-Turkey)
Gilbert KELLING (England)
Peter KÖNINGSHOF (Germany)
İlkay KUŞÇU (Muğla-Turkey)
Atike NAZİK (Adana-Turkey)
Hakan NEFESLIOĞLU (Ankara-Turkey)
Roland OBERHÄNSLI (Germany)
Bülent ORUÇ (Kocaeli-Turkey)
Vural OYAN (Van-Turkey)
Ercan ÖZCAN (İstanbul-Turkey)
Yılmaz ÖZÇELİK (Ankara-Turkey)
Sacit ÖZER (İzmir-Turkey)
Nazire ÖZGEN ERDEM (Sivas-Turkey)
Oya PAMUKÇU (İzmir-Turkey)
Dimitrios PAPANIKOLAOU (Greece)

Franco PIRAJNO (Australia)
Alastair H.F. ROBERTSON (England)
Ioan SEGHEDI (Romania)
Gürol SEYİTOĞLU (Ankara-Turkey)
Carlos M. De SILVA (Portugal)
Hasan SÖZBİLİR (İzmir-Turkey)
Orhan TATAR (Sivas-Turkey)
Uğur Kağan TEKİN (Ankara-Turkey)
Erhan TERCAN (Ankara-Turkey)
Tamer TOPAL (Ankara-Turkey)
Selami TOPRAK (Ankara-Turkey)
Atiye TUĞRUL (İstanbul-Turkey)
Necati TÜYSÜZ (Trabzon-Turkey)
Katsumi UENO (Japan)
M. Emin ULUGERGERLİ (Çanakkale-Turkey)
Uğur ULUSOY (Sivas-Turkey)
Timur USTAÖMER (İstanbul-Turkey)
Taner ÜNLÜ (Ankara-Turkey)
Alaaddin VURAL (Gümüşhane-Turkey)
John WINCHESTER (England)
Hüseyin YALÇIN (Sivas-Turkey)
Nurdan YAVUZ (Ankara-Turkey)
Özcan YİĞİT (Çanakkale-Turkey)
Erdinç YİĞİTBAŞ (Çanakkale-Turkey)
Halil YUSUFOĞLU (Ankara-Turkey)

MANAGING EDITOR

Fatih DUMANLI Head of the Department of Scientific Documentation and Presentation
e-mail: fatih.dumanli@mta.gov.tr

LOCATION OF MANAGEMENT

Redaksiyon Kurulu Başkanlığı
Maden Tetkik ve Arama Genel Müdürlüğü
D Block Room Number:2-3
Üniversiteler Mah. Dumlupınar Bulvarı No:139
06800 Çankaya/ANKARA/TURKEY
e-mail: redaksiyon@mta.gov.tr

The translations of Şen et al., Meriç et al. were made by M. Kerem AVCI. The translation of Tiringa et al. was made by Catherine YİĞİT. The translation of Köküm and Özçelik was made by Hakan PEHLİVAN.

Bull. Min. Res. Exp. is indexed and abstracted in TR Dizin, Emerging Source Citation Index (ESCI), Scopus, The ICI Journals Master List (Copernicus), Directory of Open Access Journals (DOAJ), Clarative Analytics Master List (OAJI), Georef, Geological Abstracts, MIAR and Zoological Record. The Bulletin of the Mineral Research and Exploration is published in three issues in a year. Each bulletin is printed in Turkish and English languages as two separate issues. The English and Turkish issues of the "Bulletin of the Mineral Research and Exploration" can be obtained from "BDT Department" free of charge, either directly or ordered by adding postage fee from the correspondence address. Typesetting and printing operations are carried out and followed by the Publication Service of the Scientific Documentation and Publicity Department. Typesetting and Print Review: Yaşar ÖZKAN, Tuğba UĞUR. e-mail: bdt@mta.gov.tr

The section of "notes to the authors", format, copyright and other information can be obtained from www.mta.gov.tr as PDF files.

Printed Date: 21/04/2020

Printing House: Kuban Matbaacılık - İvedik Organize Sanayi Matbaacılar Sitesi 1514. Sokak No: 20 Phone: 0312 395 2070 Fax: 0312 395 3723 www.kubanmatbaa.com

Periodical
ISSN: 0026-4563
E-ISSN: 2651-3048

© All rights reserved. This journal and the individual contributions including in the issue are under copyright by the General Directorate of Mineral Research and Exploration (MTA), and may not be reproduced, resold, and used without permission and addressing the bulletin.