

REVIEW

regarding the competition for the academic position of “associate professor”
in professional field 4.4. Earth Sciences, scientific specialty “Petrology”
announced in the “State Gazette,” Issue No. 33 of April 3, 2026, for the needs of
the Department of Hydrogeology and Engineering Geology at the “St. Ivan Rilski” University of
Mining and Geology

From a member of the Scientific Jury: Assoc. Prof. Dr. Tanya Stoilkova-Ilieva, Department of
“Mineralogy, Petrology, and Mineral Resources,” Faculty of Geology and Geography, Sofia
University “St. Kliment Ohridski”

Candidate: Senior Assistant Professor Kamelia Yankova Marinova, PhD

I was assigned this review on June 15, 2023, at a meeting of the Scientific Jury appointed
by Order No. RR-13-16/April 15, 2026, of the Rector of St. Ivan Rilski University of Mining and
Geology. It has been prepared in accordance with the requirements of the Law on the Development
of Academic Staff in the Republic of Bulgaria and the Regulations for its implementation, as well
as with the Regulations on the Conditions and Procedures for Awarding Academic Degrees and
Holding Academic Positions at the Mining and Geology University.

Procedure: Within the legally established deadline for participation in the competition, documents
were submitted by a single candidate - Senior Assistant Professor Dr. Kamelia Yankova Marinova.
Dr. Marinova graduated from the St. Ivan Rilski University of Mining and Geology in 2012 with
a master’s degree in Applied Mineralogy.

In 2020, she received her doctoral degree in the professional field 4.4 Earth Sciences. The
topic of her dissertation is: “Mineralogical and Petrographic Study of Artifacts from Cult Sites
(Second Half of the 2nd Millennium BCE – 1st Millennium BCE) in the Eastern Rhodopes,

Southern Bulgaria.” From 2018 to 2022, she served as an assistant professor in the Department of Hydrogeology and Engineering Geology at the “St. Ivan Rilski” University of Mining and Geology. Since 2022, she has been a senior assistant professor in the same department. Dr. Marinova’s teaching activities include instructing undergraduate and graduate students in Crystal Optics, Petrography, and Geoarchaeology.

Her main areas of academic interest are in the fields of Petrology, Geoarchaeology, Materials Science, and Museum Science and Mineral Heritage.

According to the submitted report, Dr. Kamelia Marinova fully meets and exceeds the minimum national requirements for the academic position of “associate professor” in professional field 4.4. Earth Sciences, as well as the minimum requirements of “St. Ivan Rilski” University of Mining and Geology regarding the research activity of candidates for this academic position in scientific fields and professional fields.

General Description of the Submitted Materials

Teaching Activities

The attached competition documentation lists a wide range of courses that the candidate teaches at the bachelor’s and master’s levels, namely: Mineralogy and Petrography (specializations: BT, EEP, DETOG, AG, GGI, HEG, DMR, MPR, and SG); Petrography (specializations: GGI and HEG); Magmatic Petrology (specialization: GPMER); Metamorphic Petrology (specializations: GEMER) and Geoarchaeology (specializations: GEMER and GGI). She has developed new curricula in Crystal Optics and Optical Studies of Minerals and Rocks for the GEMER bachelor’s degree program. At the master’s level, she teaches Geoarchaeology (specialization: AM) and has developed a new curriculum for the course “Materials Science and Technical Mineralogy” for the AM specialization.

She has pioneered innovations in teaching methods by creating digital teaching materials (presentations) for the course “Crystal Optics,” compiling a catalog of microphotographs for the course “Optical Studies of Minerals and Rocks,” as well as a museum exhibit featuring fluorescent minerals that demonstrates the physical property of fluorescence for the courses “Mineralogy and Crystallography” and “Mineralogy and Petrography.”

The documents submitted for the competition clearly highlight Dr. Marinova's active involvement in her work with students. She organizes practical training in "Geoarchaeology" in downtown Sofia.

She serves as a consultant to Dr. Lyubomir Yanakiev Mihaylov in the postdoctoral program "Young Scientists and Postdoctoral Fellows – 2" on the topic: "Mineralogical Characteristics of Celestine from the Targovishte Region."

Presentations at International and National Scientific Conferences

Dr. Marinova has participated in 5 international scientific conferences.

Publications

Senior Assistant Professor Dr. Kamelia Marinova has a total of 38 scientific publications (articles and abstracts), a chapter in a collective monograph, and a habilitation thesis - a monograph. This comprehensive list includes three publications that were part of her dissertation. She is participating in the competition for the position of associate professor with the monograph "The Rock Complex "Gluhite Kamani" - Geoarchaeological Studies" a chapter from a collective monograph, and 21 scientific publications. Among these 21 publications, 13 are cited and indexed in world-renowned scientific databases such as SCOPUS and Web of Science. In these 13 publications, two are in Q2-ranked journals, three are in Q3-ranked journals, and eight are in Q4-ranked journals. Dr. Kamelia Marinova is the first author on 5 of these publications.

Based on the documents submitted for the competition (Appendix 12), Dr. Marinova's activity and participation in applied research make a very favorable impression. Four publications are cited, describing new petrological materials for the production of yellow paving stones, as well as the production of amorphous silicon from rice husks and its application in the production of technical ceramics.

According to the submitted Report on Compliance with the Minimum National Requirements for the Academic Position of Associate Professor (State Gazette No. 23 of March 18, 2025), Indicator "B" includes the habilitation thesis, the monograph "The Rock Complex "Gluhite Kamani" - Geoarchaeological Studies". The total number of points in Criterion "B" is 100 (with a minimum requirement of 100). Criterion "C.7" includes 21 articles and extended

abstracts/scientific papers that the candidate has published in: *Archaeologia Bulgarica* (1), *Antarctic Science* (1), *Geologica Balcanica* (2), *Engineering Geology and Hydrogeology* (1), *Review of the Bulgarian Geological Society* (10), and other publications (6). In Criterion “C.8”, the candidate is represented by the study “Ceramics with Golden Engobe from the Village of Orlovo. Petrographic and Mineralogical Studies,” which is part of the collective monograph “The Medieval Settlement near the Village of Orlovo, Haskovo Region (Site 42 along the route of the Greece–Bulgaria Gas Pipeline)”. The total number of points in Category “C” is 244, with a minimum requirement of 200 points.

Of the cited publications listed (see Appendix 11), the majority appear in scientific journals that are peer-reviewed and indexed in international databases (D.11), and one citation appears in a non-peer-reviewed journal (D.13). Accordingly, the score for Indicator “D” is 82 (with a minimum requirement of 50 points).

Table of criteria for appointment to the academic position of “associate professor”

Indicators	Minimum requirement	Completed by the candidate
Group A	50 points	50 points
Group B	100 points	100 points
Group C	200 points	244 points
Group D	50 points	82 points
<i>Total:</i>	<i>400 points</i>	<i>476 points</i>

The Candidate’s Scientific and Applied Scientific Contributions

I consider that Dr. Kamelia Marinova has accurately highlighted her scientific and applied scientific contributions in the submitted report. Her personal contribution is clearly articulated in the collaborative publications and is beyond doubt. Particularly impressive is the clearly articulated interdisciplinary approach, which involves the integration of classical geological methods with modern analytical techniques (optical, spectroscopic, geochemical, and tomographic methods), as well as their application in archaeology, engineering geology, and materials science.

The indisputable scientific and applied scientific contributions, which reflect the author’s comprehensive research, are presented in the following groups:

- *Habilitation thesis - the monograph “The Rock Complex “Gluhite Kamani” - Geoarchaeological Studies”* which represents a contemporary, comprehensive study characterized by the interdisciplinary approach that has become established in the field of geoarchaeology over the past decade. The application of this approach has made it possible to achieve a comprehensive characterization of a large (representative) number of samples of pottery, plaster, and clay from the “Gluhite Kamani” rock complex. Data from various instrumental analytical methods and techniques - including petrographic, mineralogical, geochemical, chemical, and physical methods - were utilized for this characterization. Noteworthy is the large number of results from the various instrumental methods - as well as their skillful interpretation and integration (optical microscopy, X-ray diffraction, scanning electron microscopy, infrared spectroscopy, Raman spectroscopy, chemical analyses, and X-ray tomography), used to determine the composition of the raw materials from which the ceramic artifacts were made, identify potential sources of raw materials, and reconstruct ancient production technologies. The scientific and applied contribution of this work is clearly evident, as it involves the development of a methodological framework for geoarchaeological research that could be applied to other similar sites.
- *Scientific publications in the field of geoarchaeological and petrographic studies of artifacts.* The comprehensive interdisciplinary approach developed has also been successfully applied to the study of artifacts (ceramic materials, wall plaster, clay, and other archaeological finds) from various archaeological sites in the Eastern Rhodopes (Orlovo, Biser, Glukhite Kamani, Menekenski Kamani, Dolno Cherkovishte). The results of these studies have helped establish the connections between mineral composition, technological practices, and local sources of raw materials. These studies employed an interesting integrated approach - combining geomorphology, archaeology, and sedimentology - to reconstruct ancient landscapes.
- *Publications in the field of petrology and mineralogical studies of rocks and minerals focus on research into igneous and metamorphic rocks and their weathering products.* These include results from the first documented observation

of copper-bearing weathering crusts on green schists in the Smith Island area (Antarctica), which contributes to the understanding of surface geochemical processes and ore formation in Antarctica. Other studies aim to elucidate the genesis of ruby and sapphire formation and to identify the factors controlling the color and quality of corundum in corundum mineralization in the area of the village of Mishevsko, in the Eastern Rhodopes. A series of studies involves the application of a multidisciplinary methodology for the non-destructive and environmentally friendly investigation of geological environments and potential deposits of strategic raw materials.

- *Research in the field of materials science, as well as applied and interdisciplinary studies*, includes the investigation of geological materials as raw materials for new materials (yellow paving stones) and environmentally focused research (production of amorphous silicon dioxide from rice husks). These projects have the most clearly defined applied nature and focus.
- *Publications in the field of museum studies and science outreach* focus on presenting geological heritage in urban settings, developing digital representations of museum exhibits (virtual tours, 3D models, QR systems), and the systematization of typical mineral specimens in Bulgaria.

Recommendations

Dr. Marinova's teaching and the applied nature of some of her research work make an exceptionally good impression. My recommendation to her is that, whenever possible, she share her experience and knowledge in these scientific fields with future doctoral students.

Conclusion

The materials submitted for participation in the competition contain diverse and detailed information regarding both the research interests and results, as well as the academic and teaching work of Senior Assistant Professor Dr. Kamelia Marinova. They fully meet the requirements for holding the academic position of "associate professor," as set forth in the Law on the Development of Academic Staff in the Republic of Bulgaria (ZRASRB) and its Implementing Regulations, as well as the Regulations on the Conditions and Procedures for Obtaining Academic Degrees and Holding Academic Positions at the "St. Ivan Rilski" University of Mining and Geology. The

scientometric report shows that, according to a number of criteria, Dr. Marinova's scientific and research achievements significantly exceed the minimum requirements. She is a lecturer and researcher with her own working style and a specific interdisciplinary research focus.

This gives me grounds to issue a positive evaluation and to confidently recommend the appointment of Senior Assistant Professor Dr. Kamelia Marinova to the position of "associate professor" in professional field 4.4, Earth Sciences, scientific specialty "Petrology."

03.08.2026

Prepared the review:

Sofia

(Assoc. Prof. T. Stoylkova, PhD)