

Attitude of Reviewer

on competition for occupation of the academic position "professor" in a professional field 4.4. Earth Sciences (Mineralogy and Crystallography) for the needs of the "Structural Crystallography and Materials Science" department at the Institute of Mineralogy and Crystallography - BAS, announced in State Gazette No. 95/14.11.2023.

Candidate: Assoc. Dr. Rositsa Titorenkova – IMC-BAS

Member/Chairman of the Scientific Jury: Prof. Dr. Vladislav Kostov – IMC-BAS

The only candidate in the competition is Assoc. Prof. Dr. Rositsa Titorenkova from the Department of "Structural Crystallography and Materials Science" of IMC-BAS.

To participate in the competition, Dr. Rositsa Titorenkova submitted 36 scientific publications for the period after taking up the academic position of "associate professor" (2013), of which: ten are referenced and indexed (Group B.4); seventeen are referred (Group D.7); seven are unindexed (Group D.8) and two are book chapters. The publications are distributed by rank, according to the rules currently in force, into four quartiles as follows: 10 publications with Q1; 5 with Q2; 2 articles with Q3; 5 articles with Q4, 1 – with SJR. Among the renowned international and Bulgarian journals in which the candidate has published are: *Journal of Raman Spectroscopy*, *Ceramics International*, *Optical Materials*, *Journal of biomedical materials research Part A*, *Gels*, *Materials*, *Inorganic Chemistry*, *RSC Advances*, *Microporous and Mesoporous Materials*, *Voprosy Khimii i Khimicheskoi Tekhnologii*, *Review of Bulgarian Geological Society*, *Bulgarian Chemical Communications*, *Nanomaterials*, etc.

Публикациите са намерили много добър отзвук в международната научна литература като са цитирани над 200 пъти за периода след хабилитиране 2014-2023 г. (като справката е правена само по WoS и Scopus). Личните приноси в представените публикации коректно са декларирани в авторската справка. По-долу са представени някои наукометрични показатели, извлечени от справка 14. Справка Таблица Титоренкова минимални изисквания.doc на д-р Титоренкова:

The publications have found a very good response in the international scientific literature, being cited more than 200 times for the post-habilitation period 2014-2023 (the reference was made only on WoS and Scopus). Personal contributions in the presented publications are correctly declared in the author reference. Below are some scientometric indicators extracted from reference 14. Reference Table Titorenkova minimum requirements.doc by Dr. Titorenkova:

- Indicator A: Covered under the conditions of eligibility in the competition.
- Indicator B: Uncovered. Undemanded.
- Indicator C: Publications 10 nos. (required). Points 112.74 out of 100 required.
- Indicator D: 236.54 points out of 200 required.
- Indicator E: Points 500 out of 100 required (207 citations presented).
- Indicator E: Points 350 out of 150 required.

The scientific indicators of the candidate meet and exceed the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the regulations that have entered into force for its implementation for the occupation of the academic position "professor", as in group E the points are more than twice the required, and in group D they are 5 times more. Other indicators that are relevant to the competition are: Hirsch index (h-index) 9 (according to Scopus and Web of science); participation in a total of 15 Bulgarian and international scientific projects and contracts, at least four of which she was the leader of. Training of one doctoral student, dismissed with the right of defence; participation in 31 scientific forums with a total of 40 presentations (posters and reports) for a period of 10 years.

The professional beginnings of the candidate's career development are related to geological and mineralogical sciences. This predetermines the specifics of the scientific and interests and occupations, which perfectly fit into the mission and priorities of the scientific topics developed in the institute where he works. Over the years Dr. Titorenkova has significantly expanded the scope of the objects she researches and has acquired valuable skills and knowledge in their laboratory characterization. Today, she is an established research scientist in the field of materials science. Typical objects of her research are: dental enamel apatite, synthetic Ca-phosphates for use in dentistry; hybrid materials for remineralisation of dental apatite; synthetic heteropolyhedral porous materials; ceramics and ceramic pigments; geopolymers; glasses in the quaternary system $\text{TeO}_2\text{-Bi}_2\text{O}_3\text{-GeO}_2\text{-Li}_2\text{O}$; nanosized TiO_2 materials with additives for photocatalysis; Mg(II) perhenate complexes; mineral species including fluorwavellite and libethenite, ancient plasters and pigments. The documents attached to the competition reveal Associate Professor Rositsa Titorenkova as a team researcher. Her expert skills in conducting spectral analyses (optical, micro-infrared and Raman spectroscopy) and in the interpretation of the results make her a desirable partner in teams dealing with the complex characterization of important and promising materials with diverse applications in practice.

From the reference attached to the competition, it is clear that the candidate meets the minimum requirements of the Law and the regulations for its implementation, and according to another organization of criteria, in which the quartiles of the scientific articles with an impact factor play a leading role. This method of calculating the minimum number of points applies to some of the other professional areas described in the Law and the regulations for its implementation, which have not been canceled at the time of the competition and are therefore now in effect.

In conclusion, I express my conviction that the level of scientific and research activity and scientometric indicators of Associate Professor Dr. Rositsa Titorenkova fully meet the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and all legal regulations for its application to occupy the academic "Professor" position. I recommend that the members of the Scientific Council of IMC-BAS vote for the award of the academic position "professor" in professional field 4.4. Earth Sciences (Mineralogy and Crystallography) for the needs of the "Structural Crystallography and Materials Science" department at the Institute of Mineralogy and Crystallography - BAS of Assoc. Professor Dr. Rositsa Titorenkova.

18 March 2024

Member/Chairman of the Scientific Jury:

/Prof. Vladislav Kostov/