

ATTITUDE OF REVIEWER

in competition for the academic position of "Professor"
in professional field 4.2. "Chemical Sciences" (Inorganic Chemistry),
announced by the Institute of General and Inorganic Chemistry-BAS,
(State Gazette, No47 / 04.06.2021)
for the needs of laboratory "Salt systems and natural resources" IGIC, BAS
with the sole candidate Assoc. Prof. Dr. Diana Rabadjieva

by Prof. Dr. Reni Stoilova Iordanova, IGIC, BAS
Member of the Scientific Jury, appointed by Order No. RD-09-108/20.07.2021 of the Director
of IGIC-BAS

Diana Rabadjieva, Associate Professor at the Institute of General and Inorganic Chemistry (IGIC) at the Bulgarian Academy of Sciences (BAS) is the sole candidate in the competition for occupying the academic position of "Professor". The examination of the submitted documents shows that all materials are regular and meet the minimum national requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria as well as the additional requirements specified in the IGIC Rules for occupying academic position "Professor".

According to the given information, the candidate exceeds the minimum required points for all groups of indicators: these of the BAS (A-E) as well as the additional requirements (G) accepted by IGIC. The group of indicators B, indicator 4 - Habilitation work comprises scientific papers which are referenced and indexed in scientific databases. In that group Assoc. Prof. Diana Rabadjieva has 135 points at the required minimum of 100 points. The other group of indicators D, indicator 7 includes scientific papers referenced and indexed in scientific data bases which are outside of the habilitation work. For this group Rabadjieva has 262 points at the required minimum of 220 points.

The publications which Assoc. Prof. Rabadjieva has submitted on the habilitation are 6, 4 of which are in journals with the highest quartile - Q1. Additionally, 14 other original research papers which are outside the habilitation work has been presented. Among them 5 are in journals with Q1. Therefore, Associate Professor Rabadjieva participates in the competition with 20 scientific publications, which do not repeat those for acquiring her PhD degree and the academic position "Associate Professor". Among them, in scientific journals with impact factor - 17, in refereed and indexed scientific journals without impact factor - 3. The total number of citations accumulated by Rabadjieva is 190 which is equal to 380 points. According to the accepted Rules these points exceed the required minimum of 120 points (group of indicators E, indicator 11), which is indicative of the relevance of the topics developed by the candidate.

Furthermore, Assoc. Prof. Rabadjieva meets the additional requirements of the IGIC-BAS for the scientific activity of the applicants for the academic position "Professor", which are mainly related to the value of the Hirsch Index (H), (group of indicators G). In that group of indicators

Rabadjieva covers the required minimum of the Hirsch index, $H = 10$, according to the citations of all articles.

The total number of her scientific publications is 76, in journals with impact factor or SJR - 41, in referenced scientific journals without impact factor - 21, in proceeding of conference - 10, popular science - 2 and in book chapters - 2 .

Assoc. Prof. Rabadjieva has an educational activity. She was the supervisor of 1 PhD student who successfully defended in 2019 and another PhD student who is in the process of training.

The applicant shows active participation in various scientific forums - congresses and conferences, a total of 170. After achieving the academic position "Assoc. Prof." she has participated in 68 scientific events, 47 participations in international forums and 21 in national ones.

Rabadjieva's participation in various scientific and applied projects is remarkable - a total of 27, which contributed to her growth as a scientist in the field of inorganic materials science. After habilitation, Assoc. Prof. Dr. Rabadjieva participated in the development of 4 research projects at the Bulgarian National Science Fund and the Ministry of Education and Science, 1 internal institute project for development. She has been the leader of 2 research projects, as the total amount of funds attracted to IONH is 138,000 leva. She is a participant in projects financed by private companies. She is currently the leader of theme in an international research project.

Since 2017 Rabadjieva is Head of the laboratory "Salt systems and natural resources", which is indicative of her leadership and organizational skills.

The research activity of the candidate is related to the study of the chemistry of water-salt systems: forecasting the phase equilibria and the forms of existence of the elements in multicomponent water-salt systems applying different thermodynamic models, experimental research based on the results of thermodynamic modeling and development of methods and technologies for preparation of inorganic substances with predetermined composition and properties. Thermodynamic modeling is very appropriately applied as a useful tool for non-expensive and effective evaluation of inorganic chemical species in natural waters, which is the basis for solving environmental problems.

The main scientific contributions described in the habilitation report are related to:

1. Study of stable and metastable phase equilibria in multicomponent systems: sea-type water-salt systems and systems involving simulated body fluids; preparation of inorganic substances with predetermined composition and properties by thermodynamic modeling, targeted laboratory experiments and development of technological methods.
2. Research of natural systems, including surface waters, aqueous soil solutions and vegetation, in order to predict the chemical forms of the elements and their ecological behavior.

Apart from the habilitation work, other scientific contributions are related to the establishment of some regularities in the study of the relationship synthesis - composition - structure - property in obtaining various inorganic materials and the relationship chemical forms - bioavailability in the study of natural systems.

CONCLUSION

The documents and materials submitted by Assoc. Prof. Diana Rabadjieva meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the additional requirements of IGIC-BAS for the academic position of "Professor". The topic and the level of the research as well as the novelty of the results, cover all the criteria for the required academic position. On this basis, I give my positive evaluation of the overall scientific research activity and I strongly recommend to the Scientific Jury, Assoc. Prof. Diana Rabadjieva to be elected for "Professor" in 4.2 "Chemical Sciences" at the Institute of General and Inorganic Chemistry – BAS.

15.09.2021

Sofia / Prof. Dr. Reni Iordanova/