

Opinion

on the materials submitted for participation in a competition to hold the academic position of associate professor at the Faculty of Chemistry and Pharmacy in Sofia University "St. Kl. Ohridski ", professional field 4.2 Chemical sciences (Theoretical chemistry)

by Assoc. Prof. Dr. Zhivko Assenov Velkov, Department of "Chemistry" at the SWU "Neofit Rilski", Blagoevgrad

In the competition to hold academic position "associate professor", announced in the State Gazette, issue 63 of 30.07.2021, the only candidate is Chief Assistant Dr. Julia Romanova from Sofia University "St. Kliment Ohridski" - Sofia.

The materials presented by Dr. Julia Romanova are in compliance with the requirements of the Law for the Development of the Academic Staff in Republic of Bulgaria and the relevant Regulations for its implementation.

Julia Romanova has completed her higher education in 2005 in the bachelor's program "Chemistry" at Sofia University, and the following year she has completed the master's program "Computational Chemistry".

Four years later, Julia Romanova has defended her PhD thesis titled: "Influence of the medium on the geometry, electronic structure and magnetic properties of polyaniline" (Theoretical and experimental investigation on structure, magnetic and conducting properties of conjugated N-containing oligomers).

Over the next five years, Dr. Julia Romanova specialized in:

- Sofia University "St. Kliment Ohridski"
- Leibniz Institute for Polymer Research Dresden, Theory of Polymers, Germany;
- University of Namur, Theoretical Chemistry Laboratory, Belgium;
- University of Surrey, Advanced Technology Institute, UK.

Julia Romanova has started her teaching career as a PhD-student, but was hired as an assistant in 2018. In addition to her auditorium employment, she is tutoring PhD and master degree students also and is a leader of student research projects. A master degree thesis guided by her received a national award in a competition for the best thesis of the Union of chemists and "AQUACHIM" AD.

Since the time of her master's degree, Julia Romanova participated in 25 international and national research projects, in 5 of which she is a supervisor.

He is an editor of a referenced Special Issue of Molecules-MDPI "Metal-Organic Complexes: Applications in Chemistry and Materials 2019 Science "(IF = 4.411).

The intend of Dr. Romanova to work on topics that have an applied focus is impressive. During her research career, she has published 25 articles, two studies in a conference

proceedings, 24 participations in conferences: 12 section papers and 12 posters, and 1 patent. 258 citations of her publications are noted in SOPUS. The auto-citations are excluded.

Dr. Romanova participates in the competition with: 15 publications that have been published after obtaining her PhD degree and all are on the topic of this competition. 9 of them are in journals with Q1, 4 are in journals with Q2, 1 is a chapter of a book (Q3) and 1 article is in a journal with Q4.

The most common topic of Dr. Romanova are complexes of metal ions with various organic ligands, which have interesting properties. Organometallic complexes are powerful building blocks for modern materials with applications in catalysis, molecular electronics and photonics, magnetic devices, solar cells, anticancer therapy, biomolecular and cell probes and much more. The wide application of these molecules stems from their hybrid structure, which successfully combines the functionalities of purely organic and inorganic compounds. Other topics covered in Dr. Romanova's work are the modeling of Raman and luminescent spectra of elongated viologen derivatives through long-range corrected functionalities or with the help of multi-configuration quantum chemical methods, as well as the continuation of the topic from her dissertation - study of polyaniline films.

In recent years, Romanova has also emerged as a leading researcher in the field of singlet fission and the discovery of substances with a moderate diradical character and at the same time with satisfactory chemical stability. This is a new topic for Bulgaria, but the candidate has managed not only to go into it in depth, but also to attract a significant group of young researchers as collaborators. This shows not only leadership and organizational skills, but also scientific courage and an innovative approach, which is a sign of research growth and maturity.

Presented by Dr. Julia Romanova scientific papers contain extremely significant and original scientific and scientific-applied contributions in the field of molecular modeling of new materials and present her as a qualified researcher in the field of theoretical chemistry.

CONCLUSION

The volume and high quality of the scientific contributions reflected in the presented materials, as well as the overall activity of the candidate in the field of theoretical chemistry, give me reason not only to recommend the esteemed Scientific Jury to prepare a report-proposal to the Faculty Council of FHF of Sofia University "St. Kliment Ohridski" for election of Dr. Julia Romanova in the academic position of "Associate Professor" in a professional field 4.2. Chemical sciences, scientific field "Theoretical Chemistry", but also to express my admiration for the achieved results.

Blagoevgrad, November 2021.

Signature:



Assoc. Prof. Dr. Zh. Velkov