

STATEMENT

In the competition for occupation of the academic position "Associate Professor" in the professional field 4.2. "Chemical Sciences", scientific specialty "Physicochemistry", published in the Newspaper of State no. 41 of 21.05.2019 by the Institute of Optical Materials and Technologies Acad. J. Malinowski ", BAS

with the candidate Assist. Prof. Ph.D. **Sylvia Emilova Angelova**

by Assoc. Prof. Deyan Subchev Dimov, **Member of the Scientific Jury.**

1. General characteristics of the applicant's research and applied activities.

Sylvia Angelova holds a Master's Degree in Chemistry from Sofia University "St. Kliment Ohridski ", specializing in Organic and Analytical Chemistry. She defended her doctoral dissertation in 2009 on the subject of: "Quantum-chemically calculated NMR parameters as a tool for the study of tautomeric and conformational equilibrium" at the Institute of Organic Chemistry with the Center of Phytochemistry-BAS, where in 2011 she holds the position of Assist. Prof. Ph.D. The total number of candidate publications published in the period 2000-2019 is 62, of which 52 are in Impact Factor or Impact Rank journals. She was the supervisor of 8 graduates and 2 postgraduate students.

The applicant participated in the competition with 28 publications divided into two groups, at which 34 citations of the articles in the group "B", indicator 4, and 64 citations of the articles in the group of "G", indicator 7 were noticed at the time of preparation of the report. She has 43 conference and poster presentations. The applicant participates in 11 projects, of which 5 under the NSF and 4 EBR projects and one international project. The total number of citations Ph.D. Angelova has at the moment is 243 and hers h-index is 10.

The number of points on the various indicators collected Assist. Prof. Ph.D is more than sufficient according to the requirements of the DASRB and IOMT - BAS Regulations.

2. Basic scientific and applied scientific contributions.

Applicant's research is mainly in the field of theoretical chemistry and more specifically in molecular modeling and quantum chemical calculation methods combined with NMR spectroscopy and X-ray diffraction analysis.

The major contribution of Silvia Angelova's publications is the study of new dyes, as potential components donating electrons in solar cells and fluorescent dyes, as biomarkers through quantum-chemical calculations. Information was obtained on the geometry and electronic structure of the dyes in the ground state and excited state of various tautomeric systems. Theoretical and experimental techniques are also cleverly used to prove and predict various mechanisms and processes in molecules, such as proton double transfer in the excited singlet state, equilibrium in the monomer-dimeric mixture, and prediction of the behavior of a complex tautomeric system under the influence of a static external electrical field.

Applicant's studies lead to the enrichment of knowledge on new and unexplored dyes and biological objects and open the door for their practical use. It is noteworthy that Dr. Sylvia Angelova works in diverse teams, indicating that she is a sought-after and established scientist who has a thorough knowledge of the field.

Conclusion

The materials presented by the applicant and above-mentioned indicators and the considered above contributions fully comply with the requirements of the DASRB and IOMT-BAS Regulations for the occupation of the academic position Associate Professor.

This gives me the right to propose to the members of the Scientific Jury to recommend to the Scientific Council of IOMT-BAS to **select Ph.D. Sylvia Emilova Angelova** for the occupation of the academic position of **Associate Professor**.

13.09.2019

Signature:

/ Assoc. Prof. Deyan Dimov /