

## OPINION

on the competition for associate professor

### 4.2. Chemical Sciences (Theoretical chemistry)

announced in the Official State Gazette, issue 52 of 2 July 2019.  
candidate Assistant Prof. **Miroslava Alexandrova Nedyalkova PhD**

There is one candidate participating in the associate professor competition at the Faculty of Chemistry and Pharmacy, Sofia University St. "Kl. Ohridsky" - Dr. Miroslava Alexandrova Nedyalkova. Miroslava Nedyalkova graduated from the Faculty of Chemistry and Pharmacy at Sofia University in 2005 obtaining Master degree in "Pharmacological and Medical Biophysical Chemistry". In 2014 she defended her PhD thesis in Theoretical and Computational Chemistry on the topic "Computational study of nanoparticles: effect of metal ions, solvent and citric acid" at Sofia University and University of Barcelona. From 2007 to 2016, Miroslava Nedyalkova held an assistant professor position and later a researcher at the same institution. Many specializations at different universities in Spain, Austria, Germany, France and Switzerland are worth to be noted.

The scientific activity of Dr. Miroslava Nedyalkova covers 29 scientific articles, one monography and one book chapters, 23 of them, published in international journals with an impact factor. The candidate participates in the competition with 15 publications and one monography divided according to the requirements of the law into two groups. The information provided by the candidate does not clarify the total number of citations on the mentioned papers. A reference to SCOPUS database has shown that the submitted works have been cited 46 times, which covers both the national and recommended requirements of the Faculty of Chemistry and Pharmacy. Dr. Nedyalkova has participated in both national and international projects. She has also participated in more than 15 national and international conferences. She has received numerous awards including a Fulbright Scholarship.

Dr. Nedyalkova's studies, included as publications in the current competition, focus mainly on two scientific directions – chemometrics and computational chemistry. In the part where chemometrics is prevalent, an interesting approach is to use the method of partial least squares on nutritional proteins in order to determine their potential ability to cause allergic reactions. The methods of hierarchical and non-hierarchical clustering were used as well as cross-sectional covariance analysis. In the field of computational chemistry, results have been obtained by means of molecular dynamics, ab initio and semi-empirical methods. The combination of both approaches describing the behavior of various physicochemical systems has led to several very good publications dedicated to the search for nanoparticle descriptors and their application of structure / property relationships. A QSAR approach has been developed to describe the application of superparamagnetic iron nanoparticles, which are applicable in the fields of medicine, cosmetics, toxicology and many others. Many scientific projects that Dr. Nedyalkova has dedicated herself to over the years are also noteworthy. I am also a participant in two of them and my impression is that she is very diligent about their organization and management. I can say that organizing scientific projects and events is Dr. Nedyalkova's principal strength.

The scientific publications presented show that Dr. Nedyalkova is a scientist having rich and varied professional experience, who is developing in an interesting scientific field.

In conclusion, I believe that PhD, Assistant Professor Miroslava Alexandrova Nedyalkova meets all the requirements of the law for occupying the academic position of Associate Professor.

Based on the above, I propose Miroslava Alexandrova Nedyalkova to be elected Associate Professor at the Faculty of Chemistry and Pharmacy of Sofia University.

Sofia,  
6/11/2019

Having prepared the opinion:

Assoc. Prof. Dr. Veselin Petrov