

## STATEMENT

from Prof. DSc Sonia Varbanova Ilieva,

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on the materials submitted for the competition for the academic position of **'Associate Professor'** at the Department of Inorganic Chemistry, Faculty of Chemistry and Pharmacy, Sofia University in higher education professional field **4.2. Chemical Sciences (Theoretical Chemistry)**

In the competition for the academic position 'Associate Professor' announced in the State Gazette, issue 52/02.07.2019, **Chief Assistant Dr Miroslava Aleksandrova Nedyalkova** from the Department of Inorganic Chemistry, Faculty of Chemistry and Pharmacy, Sofia University is the only candidate.

The electronic and hard copy materials submitted by Dr Miroslava Nedyalkova **meet all the requirements** of the Law for the Development of the Academic Staff in the Republic of Bulgaria and the relevant regulations for its implementation. The applicant meets and exceeds the criteria (minimum requirements) for the academic position 'Associate Professor', as well as the additional requirements of the Faculty of Chemistry and Pharmacy.

M. Nedyalkova graduated as a Master of Pharmacological and Medical Biophysical Chemistry at the Faculty of Chemistry, Sofia University in 2006. She carried out joint doctoral studies at Sofia University (HF) and the University of Barcelona. In 2014 she defended her PhD thesis *Computational study of nanoparticles: effect of metal ions, solvent and citric acid* under the supervision of Dr Sergio Madurga. The collaborative research studies with the supervisor and the group from the University of Barcelona has continued further. In 2017 Dr Nedyalkova became a Chief Assistant at the Department of Inorganic Chemistry, Faculty of Chemistry and Pharmacy.

Dr Nedyalkova has published a **total of 31 scientific publications** (with 76 citations, h index 4), including one book and one monograph, with 23 publications being in Impact Factor (IF) journals. To participate in the present competition, she has submitted **15 scientific papers and 1 monograph**, which is not presented as a habilitation work. The publications correspond to the subject of the competition and do not repeat the papers included in her doctoral thesis. The scientific articles are published in reputed international journals with impact factor and are distributed in the appropriate quarters as follows: 8 - in Q1 and 7 - in Q2, thus clearly demonstrating the **quality of the research studies**. The average impact factor (IF) of these publications is 3.13, varying from 1.087 (*Journal of AOAC (Association of Official Agricultural Chemists) International*) to 7.346 (*Advances in Colloid and Interface Science*), with some journals significantly increasing their IF over the years (e.g., *J. Materials Science & Technology* from 3.609 in 2017 to 5.05 for 2018/2019). Nedyalkova is the leading (corresponding) author in 9 out of 16 publications, submitted for the competition, that clearly shows her personal contribution to the research. In my opinion these facts clearly demonstrate the level of Dr Nedyalkova scientific work and therefore, the Associate Professor position is a natural result in her scientific career.

**The overall scientific activity** of Dr Nedyalkova is in the field of theoretical chemistry: chemometrics and molecular modeling with the application of QM and MD theoretical calculations. The

main contributions of the scientific developments are presented in the documentation, for each publication, participating in the present competition.

**The presented habilitation work** is dedicated to one of the main topics in the candidate's scientific work - nano QSAR research - a very important topic, at the "state of the art" in the nano field, considering from one side the way nanotechnologies are entering our modern life and on the other - the inability to experimentally study potential side effects, because of their significant dependence on the time factor, for example. The development of new QSAR models for the evaluation of toxicity and other effects of nanoparticles, in combination with computational methods of chemistry, has both scientific and applied contributions, related to environmental risk assessment.

It is clear from the documentation provided that **M. Nedyalkova scientific work has a distinct international character**: she conducted specializations and visits to foreign scientific laboratories (Switzerland, Austria, many times at the University of Barcelona); she has established fruitful cooperation with research groups in Bulgaria and abroad (University of Barcelona, Gdansk University of Technology, Faculty of Pharmacy, MU, Sofia); she has participated in a number of national and international scientific congresses/conferences. The awards and international scholarships demonstrate her successful scientific work. Her participation in national and international projects, incl. as a coordinator or as a member of the management team, is remarkable **The educational and pedagogical activity** of Dr Nedyalkova is reflected in the information provided: she has had a full academic workload, was a supervisor for a graduate student diploma and a consultant for two PhD students.

## CONCLUSION

Based on the above analysis, the submitted for the competition materials, the high scientific level of the research work, the results obtained that represent a definite scientific achievement, as well as my personal opinion for the candidate as an erudite scientist and lecturer, I am convinced in my **positive assessment** and firmly recommend the Scientific Jury to prepare a report-proposal to the Faculty Council for the selection of **Dr Miroslava Aleksandrova Nedyalkova** in the academic position of '**Associate Professor**', professional field **4.2. Chemical Sciences (Theoretical Chemistry)** at the Department of Inorganic Chemistry, Faculty of Chemistry and Pharmacy, Sofia University "St. Kl. Ohridski".

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Sofia

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