

OPINION

by Assoc. Prof. Dr. Eng. Georgi Evgeniev Chernev,
Department of Silicate Technology, University of Chemical Technology and Metallurgy
regarding the materials submitted for participation in a competition for the
academic position of "Associate Professor"
in the Department of Physical Chemistry, Faculty of Chemistry and Pharmacy, Sofia
University "St. Kl. Ohridski",
Mon 4.2. Chemical Sciences, scientific specialty Physical Chemistry

In the competition for "associate professor", announced in the State Gazette, issue 5 of 17.01.2025, the candidate is senior assistant professor Dr. Nina Georgieva Danchova, member of the Department of Physical Chemistry, at the Faculty of Chemistry and Pharmacy of Sofia University "St. Kliment Ohridski".

The materials presented by senior assistant professor Dr. Nina Georgieva Danchova on electronic media meet the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB) and the regulations for its implementation at Sofia University. The candidate meets and exceeds almost twice the criteria for holding the academic position of "associate professor" at the Faculty of Chemistry and Pharmacy of Sofia University "St. Kliment Ohridski". The candidate senior assistant professor Dr. Nina Danchova graduated from the Higher Education Commission with a Bachelor's degree in 2007 at Sofia University "St. Kliment Ohridski", Faculty of Chemistry, Sofia. Sofia, Department of Chemistry and Physics, in 2008 she graduated with a Master's degree in the same faculty in the specialty "Materials Science". In the period from 2009 to 2012 she was a doctoral student in the Department of Physical Chemistry, Faculty of Chemistry and Pharmacy, Sofia University in the professional field 4.2. Chemical Sciences, with the topic of the dissertation "Obtaining and properties of doped sol-gel materials" and scientific supervisor Prof. Stoyan Gutsov.

The scientific contributions of Senior Assistant Professor Nina Danchova, presented within the competition, have been published in a total of 22 scientific publications in the period from 2008 to 2022, 19 of them are in Scopus, and 17 issues with quartiles, respectively Q1- 1 issue; Q2 - 12 issues; Q3 - 2 issues; Q4 - 2 issues. One patent has also been presented to the scientific contributions. In addition to them, the candidate has 3 more publications in national or

international journals. According to the attached reference, the publications of Senior Asst. Prof. Dr. Nina Danchova have been cited 275 times together with self-citations, and excluding them, their number is 209, according to a Scopus reference.

From the presented materials it is evident that the scientific developments of Senior Asst. Prof. N. Danova are in fruitful cooperation with research groups from Bulgaria and abroad. She has participated in the development and implementation of a number of scientific projects, and has presented the scientific results at a number of prestigious national and international scientific forums.

The overall scientific activity of Senior Asst. Prof. Dr. Nina Danchova is characterized by depth and complexity in the study of the sol-gel synthesis of aerogel powders, granules and layers based on silicon, zirconium and titanium, as well as the preparation of composite materials based on them. The obtained results contain both fundamental and contributions aimed at specific applications. The field of scientific research of the candidate is relevant and can be summarized as the preparation and characterization of the structure and properties of aerogels, their stability and applications. In particular, the influence of various precursors on the properties of the obtained final products, as well as their main chemical, physicochemical, thermal and optical properties is studied.

The presented habilitation work is directly related to the main topic of the candidate's scientific work and summarizes the research in the field of aerogels. It is based on six scientific publications. The conducted research is aimed at the preparation and study of nanoporous silica aerogels and the study of their thermal properties. Preparation of silica aerogel composites containing a europium phenanthroline nitrate complex and monitoring of their luminescent properties. Preparation of functionalized hydrophobic aerogel granules and the study of their optical properties. Studies on the influence of the nature of the precursor and the conditions of sol-gel synthesis and the drying conditions on the structure and thermal properties of TiO₂ aerogels.

The candidate's teaching and pedagogical activity is very serious, since 2012 she has been appointed as a senior assistant in the Department of Physical Chemistry of the Faculty of Chemistry at Sofia University "St. Kliment Ohridski", where I teach and conduct my teaching activities. She leads laboratory exercises in Physical Chemistry I and Physical Chemistry II. She is the titular teacher of the Physical Chemistry course, lecturer of the courses in Ceramic Materials, Dispersed Systems in Ceramic Technologies and the elective course "Optical Materials".

CONCLUSION

In conclusion, I believe that Senior Asst. Prof. Dr. Nina Danchova meets all the requirements of the Law, the Regulations for its implementation and the recommended requirements of the Faculty of Chemistry of Sofia University for holding the academic position of "Associate Professor".

Based on the above and the materials submitted for the competition, the high scientific level of research work, the results obtained, which represent a certain scientific achievement, I confidently give my positive assessment and propose that Senior Asst. Prof. Dr. Nina Danchova be elected to hold the academic position of "Associate Professor" in the Department of "Physical Chemistry" at the Faculty of Chemistry and Pharmacy of Sofia University "St. Kliment Ohridski" in the professional field 4.2. Chemical Sciences, scientific specialty "Physical Chemistry".

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Sofia

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