

The only candidate for the academic position "Associate Professor" in Laboratory "High Temperature Oxide Systems" at IGIC-BAS is Chief Assistant Dr. Albena Dimitrova Bachvarova-Nedelcheva.

Chief Assistant Bachvarova graduated in University of Chemical Technology and Metallurgy - Sofia in 2000, Specialty "Materials Science", Department "Technology of silicates", MSc degree chemist-engineer. She obtained a PhD degree at the UCTM-Sofia during 2005. The scope of her dissertation is "Glass formation and phase formation in selenite systems on the type $\text{SeO}_2\text{-Ag}_2\text{O-M}_n\text{O}_m$, $\text{SeO}_2\text{-CuO-M}_n\text{O}_m$ ($\text{M}_n\text{O}_m = \text{B}_2\text{O}_3, \text{MoO}_3$)". Since 2005 year she starts the career in Institute of General and Inorganic Chemistry- Bulgarian Academy of Sciences. Mrs. Bachvarova's work experience in Institute is total 14 years, of which eight on the position "Chief Assistant".

In respect to the announced competition, the candidate has submitted all the necessary documents, according to the terms and conditions predefined in the Law on the Development of the Academic Staff in Republic of Bulgaria and the relevant Regulations, in the period specified in the announcement within two months of its publication.

The total number of publications of Chief Assistant Albena Bachvarova-Nedelcheva is 61, four of which are on the topic of her PhD thesis and they are presented in Appendix "List of all publications". For participation in the competition, the candidate has stated 28 papers, of which ten are included in the habilitation work and eighteen - others. All presented articles are published in referenced and indexed in scientific databases (ISI WoS or Scopus) journals. It is worth noting that most of the publications are in journals possessing the highest quartile, Q1. The activity of the candidate, expressed by dissemination of her science achievements to the community is as follows: total number of citations (by Scopus) is 242, of which 206 were represented for the participation in the competition; the value of the H- Index according to Scopus is 9 (see Appendix A).

Chief Assistant Bachvarova-Nedelcheva is an active participant in two National Projects, funded by the National Science Fund (NSF) on topics directly related to her scientific qualification. She participated in a project for bilateral cooperation between Bulgaria and India, also funded by NSF. Due to her high scientific experience in the field and professional qualification, Mrs. Bachvarova often is invited as a reviewer in a number of prestigious international journals, such as Journal of Non-Crystalline Solids, Optical Materials, Functional Materials Letters, Journal of Molecular Structure, etc. The candidate has been awarded four times for the participation in various international and national scientific events. The good organizational skills of Mrs. Bachvarova-Nedelcheva are the reason to her joined as a scientific secretary in three international seminars: SizeMat1 - 2006;

MetEcoMat - 2007 and SizeMat2 during 2010. Chief Assistant Bachvarova-Nedelcheva is a scientific advisor of four successfully defended students at the department "Technology of silicates", UCTM - Sofia as well as of three PhD students. Two of them have already defended their PhD theses and one PhD student is still in preparation of the thesis.

The publications submitted to the competition in and out of habilitation work have emphasized fundamental character. The articles included in Group of Indicators B, indicator 4, thematically are a continuation and upgrading of the investigations related to the topic of Mrs. Bachvarova's PhD thesis. The papers presented in the other group of indicators (G, indicator 7) deal with the application of different techniques, such as sol-gel, mechanochemically activation and combustion for synthesis of nanosized TiO₂ powders in two- and three-component systems with the participation of different network formers. The published results are original and contribute to the field of gel and phase formation in multi-component systems, with the participation of TiO₂ and other non-traditional network formers (TeO₂; ZnO; SeO₂, etc.).

Photocatalytic and antibacterial activities of the obtained nanoscaled powders were investigated towards degradation reactions of organic dyes (MG; RB5) and *E. coli*. These studies are directly related to the effective treatment of industrial and household waste waters, containing different pollutants with hazardous impact on the environment and human health.

Presented by Chief Assistant Bachvarova-Nedelcheva materials for the competition show full compliance of the candidate with the mandatory conditions and the mandatory quantitative criteria and scientific metrics according to the national requirements (§4 (2); §25 of LDAS, §57 (2) of LDASR as well as the additional requirements, specified in the IGIC additional Rules for occupying the academic positions "Associate Professor".

As personal impressions by the candidate, I can say the following: I know Mrs. Albena Bachvarova-Nedelcheva since she has joined to the team of IGIC. During these years, she is distinguished by her extremely hard working, organization and discipline. Chief Assistant Bachvarova fulfills every task, no matter if scientific or administrative, with great responsibility and diligence. She is not a conflict person and works nicely in a team.

Conclusion: The candidate Chief Assistant Albena Bachvarova-Nedelcheva fully responds to the mandatory and specific conditions, as well as to the scientific criteria for occupying the academic position of "Associate Professor" in IGIC – BAS.

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/Assoc. Prof. Dr. Ivan Uzunov/