

## OPINION

On a competition to occupy academic position of Associate Professor

Professional field: 4.2. Chemical Sciences

Scientific specialty: Chemical Kinetics and Catalysis

Requesting laboratory: Materials and Processes in Environmental Protection, Institute of  
General and Inorganic Chemistry, Bulgarian Academy of Sciences

Announcement: State Gazette No. 47, 4 June 2021

Reviewer: Assoc. Prof. Nikolay Ivanov Velinov, PhD

Institute of Catalysis, Bulgarian Academy of Sciences, Sofia, Bulgaria

This opinion was prepared in accordance with Order No. ПД-09-110/29.07.2021 issued by the Institute of General and Inorganic Chemistry (IGIC) of the Bulgarian Academy of Sciences (BAS).

Assistant Professor Daniela Dimitrova Stoyanova, PhD, being a member of the requesting lab at IGIC-BAS, is a sole applicant. The candidate has submitted all the necessary documents in accordance with Rules on the Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions at IGIC-BAS.

Daniela Stoyanova graduated from Institute of Chemical Technology in 1993, speciality Inorganic and electrochemical production. Since 1996, she has been working as a research chemist at IGIC-BAS. In 2002, she defended her thesis entitled: Copper-cobalt oxide catalysts supported on lanthanum-modified aluminosilicate composites and  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> for waste gas purification, and received her PhD degree in Chemical Kinetics and Catalysis (scientific specialty 01.05.16). In 2003, she was appointed Research Fellow Third Degree, in 2004 - Research Fellow First Degree and since 2010 she holds the academic position of Assistant Professor at IC-BAS.

Daniela Stoyanova is co-author of 38 publications that have found significant repercussions in the specialized scientific literature with a total number of 154 citations. She is co-ator of a patent entitled: Spinel-like catalyst for exhaust gas purification and method for its production. For participation in this competition, she submitted 26 publications of which are in impact factor (IF) or Scopus rank (SJR) issues. The entries included in the competition do not repeat those submitted for acquisition of the doctoral degree. Applicant's leading role and significant personal contribution to research and analysing results is supported by the fact that she is the first author of 11 publications.

As a habilitation thesis, the candidate has presented 10 publications aimed at the synthesis of materials intended for the purification of waste gases from vehicles and energy

from emissions of nitrogen oxides and carbon monoxide. The main contributions of these publications can be summarized in two ways:

1. Synthesis of polyoxide composites based on  $\text{Al}_2\text{O}_3$ , natural mineral raw materials and  $\text{MgO}$ , for preparation of supports with suitable mechanophysical and physicochemical parameters, used for support of active components and applied in a wide range of catalysts;

2. Research and development of supported catalysts with content of metal oxide active phase with high catalytic activity and applicability in the processes of purification of gaseous fluids in the chemical, energy industry and auto transport.

Outside the habilitation work, publications are presented related to the synthesis and investigation of materials similar to those presented in the habilitation report, but with a broader environmental focus - for purification of gases and waters from various pollutants. The publications have contributed to the search for new, more efficient and promising materials with applications such as catalysts for  $\text{CH}_4$  combustion and  $\text{CO}$  oxidation; photocatalysts for the decomposition of dyes, acetylsalicylic acid and oxidation of ethylene in the gas phase, corrosion-resistant mono- and poly-component oxide coatings obtained by chemical methods on various types of metal substrates.

Submitted information about fulfilment of minimum requirements under Article 5 of the aforementioned IGIC-BAS Rules shows that Assistant Professor Stoyanova exceeds minimum points score requirement for each indicator to apply for the position of Associate Professor

**Conclusion:** Applicant Assistant Daniela Dimitrova Stoyanova meets the requirements to occupy an academic position of Associate Professor in accordance with Act for the Development of the Academic Staff in the Republic of Bulgaria, Rules for the Implementation of Act for the Development of the Academic Staff in the Republic of Bulgaria, and Rules on the Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions at IGIC-BAS. I give a positive assessment and strongly support Assistant Professor Daniela Dimitrova Stoyanova, PhD, to occupy the academic position of Associate Professor in professional field 4.2. Chemical Sciences and scientific specialty Chemical Kinetics and Catalysis at Institute of General and Inorganic Chemistry of the Bulgarian Academy of Sciences.

14.09.2021  
Sofia

Member of the Scientific Jury:  
(Assoc. Prof. Nikolay Velinov, PhD)