

ATTITUDE

Submitted by Prof. PhD Alexander Eliyas, Institute of Catalysis - BAS

In regard to the competition for occupying the academic position “Professor”

In the professional direction 4.2 “Chemical Sciences”,

Scientific research specialty “Chemical Kinetics and Catalysis”,

for the Laboratory „Materials and Processes for Protection of Environment“ in the Institute of

General and Inorganic Chemistry - BAS,

Announced in Newspaper of State Issue 34 on 03.05.2022

On the basis of Order No.RD-09-102 dated 27th of June 2022, issued by the Director of the Institute of General and Inorganic Chemistry – BAS, I was appointed as member of the Scientific Jury for carrying out the competition procedure, announced by the Institute of General and Inorganic Chemistry – BAS for occupying the academic position of “Professor” in the Laboratory „Materials and Processes for Protection of Environment“ having one single candidate Assoc.Prof. PhD Ivanka Spasova. In the first meeting of the jury it was decided that I have to give my opinion preparing an Attitude, according to the regulations. Assoc.Prof. PhD Ivanka Spasova has submitted all the required documents, specified in the “Regulations for the Conditions and Order for Occupying Academic Positions in IGIC – BAS”.

The professional curriculum vitae of Assoc.Prof. Spasova started with elaborating Master Thesis and defending Master’s Degree at the University for Chemical Technology and Metallurgy in Sofia in the year 1983 in the field of technologies for organic synthesis and fuels. Then there follows elaborating PhD Thesis and acquiring PhD Degree on the synthesis and catalytic activity of oxide catalysts, defended in 1998 at IGIC – BAS. Further on her entire scientific research activity is connected with studies in the field of catalysis, focused on protection of the environment and more specifically neutralization of emissions of CO and NO. The application aspect of these investigations makes them especially useful and valuable considering the European measures for decreasing the carbon emission, causing global warming of the climate.

She was appointed to occupy the academic position of Associated Professor in 2012 in the research specialty „Chemical Kinetics and Catalysis” in IGIC – BAS. This chronology of her professional development and the occupied research positions prove that the candidate answers completely the requirements of the procedure for occupying of the academic position “Professor”.

Assoc.Prof. Spasova is the co-author of 71 research publications, out of which 56 are in journals having impact factor and 3 publications having SJR, which is equalized to the impact factor and 5 more articles conference proceedings. The total number of citations amounts to 586 citations, she has Index of Hirsch equal to 12. Assoc.Prof. Spasova has participated actively in a series of scientific research projects – 1 project with international participation and 16 other projects, based on national sponsorship – as one can see they have wide scope of her scientific research activities. I would lay the stress on the fact, that she is the co-author of 3 inventions, while at the same time she has large number of participations in scientific events – a total of 79 participations, proving without any doubt her high activity and outlining substantial scientific research contribution. Last but not least I would point out the fact that she was invited as reviewer in 3 procedures based on the Law for the Development of the Academic Staff in the Republic of Bulgaria and more over she has prepared other 11 peer reviewer’s opinions in other procedures based on LDASRB, she has large number of referee’s opinions on articles in journals – more than 40. All these data show that the high level of her personal scientific research development and the acquired competency, which has found wide recognition – this is also an evaluation of the expertise qualities of the candidate. I would also point out the fact that she was member of the National Expert Commission for Chemical Sciences of the

National Science Fund NSF and the fact that she was Deputy Chairman of the Scientific Council of IGIC-BAS. In addition she is member of the Union of Chemists in Bulgaria and also active member of the Bulgarian Catalysis Society, and here I take the opportunity to express my thankfulness as Chairman of the BCS Board for this activity.

The author's reference information for the contribution character of her works, submitted to me, proves that the basic part of her studies, are distributed between 4 thematic directions. Among them in my opinion as catalysis researcher, having in mind my field of competence, I would distinguish the investigations in the field of catalysts, deposited on carbon-containing materials for environmental protection and clean energy. Of course I do not underestimate the other research direction – adsorption capacity of carbon-silicon composites finding application for capturing CO in view of the applicability aspect in direction the lowering of carbon containing emissions, causing the global warming. I do not want to miss the topic: catalytic properties of spinels $MnFeO_4$ for complete oxidation of alkanes at low temperatures. Here I would like to make a recommendation – these spinels could be studied in another aspect – as photocatalytic materials similar to the widely known ilmenite, if these materials are of nanometer size semiconducting materials with appropriate band gap width, allowing measurement of their photocatalytic activity not only under UV-light irradiation, but also using visible light illumination.

Her scientific contributions can be estimated as a series of novelties in science and innovations in practice enriching the presently existing knowledge, and the most important aspect – to a great extent they are applicable in practice. In my opinion I am not competent to express an opinion about her contributions in the fourth direction – materials having bio-medical application for various medicines.

I have personal impressions from Assoc.Prof. Spasova from her participations in the international symposia on heterogeneous catalysis, organized by IC-BAS, and also her presentations in the national conferences on catalysis, organized by the Bulgarian Catalysis Society – in my opinion she is an erudite and efficient worker, having experience in experimental research work and competency in the interpretation of the results, having affinity towards scientific discussion and also serious theoretical knowledge and wide scope of scientific interests. She is highly qualified having experience in studying the properties of new materials having potential application for protection of the environment. Having acquainted myself with the submitted materials for the competition comes in addition to my personal impressions and all this allows me to claim that the scientific research indices of Assoc.Prof. Spasova are in complete accordance to the requirements of the law LDASRB and also the specific conditions, approved by the Scientific Council of IGIC-BAS for occupying the academic position „Professor”. I recommend with full conviction to the Scientific Jury and to the Scientific Council of IGIC-BAS to vote positively „YES” for the election of Assoc.Prof. Spasova for the position of „Professor” in the professional direction 4.2. „Chemical Sciences”, research field „Chemical Kinetics and Catalysis” to occupy the academic position of „Professor” in the Laboratory „Materials and Processes for Protection of the Environment“ at IGIC – BAS.

08.08.2022

Member of the Jury:

/Prof. PhD Alexander Eliyas/