

OPINION

By Prof. Stefan Tsakovski, PhD

Faculty of Chemistry and Pharmacy – Sofia University “St. Kliment Ohridski”,

Chair of the Scientific Jury appointed with Order № RD-09-129

of the of the Director of the Institute of General and Inorganic Chemistry,

Bulgarian Academy of Sciences

Regarding the call for the academic position “Professor”,

Area of Higher Education 4. Natural sciences, Mathematics and Informatics,

Professional Field 4.2. Chemical sciences (Analytical Chemistry)

for the needs of the Atomic Spectroscopy Methodology Laboratory,

Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences

published in the State Gazette issue 46 dated 26 May 2023

Eligibility materials

In the call for the academic position “Professor”, there is a single applicant – Assoc. Prof. Albena Kirilova Detcheva-Tchakarova, PhD. The set of materials provided by the applicant is in accordance with the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADASRB), the Regulations on its implementation, and the Internal Rules of the Institute of General and Inorganic Chemistry – Bulgarian Academy of Sciences.

General presentation of the career development of the applicant

Albena Detcheva graduated from the Faculty of Chemistry, Sofia University “St. Kliment Ohridski” in 1985, speciality “Inorganic and Analytical Chemistry”. Her scientific career has started at the Institute of Applied Mineralogy – Bulgarian Academy of Sciences (1985-1988) and since 1988 she has continued her scientific career at the Institute of General and Inorganic Chemistry – Bulgarian Academy of Sciences. In 2000 she acquired the educational and scientific degree “Doctor of philosophy” and since August 2007 she has been an Associate Professor. Assoc. Prof. Detcheva has had long term research stays at the Free University, Amsterdam, Netherlands and the Friedrich Schiller University, Jena, Germany. In the period 2004-2006 she has been working as an independent expert affiliated with the Institute of reference Materials, Joint Research Centre of the European Commission, Geel, Belgium.

Evaluation of the applicant’s research profile

Evaluation of the scientific metrics

Assoc. Prof. Albena Detcheva participates in the current procedure for the academic position “Professor” with 21 publications, which have not been used in the previous scientific advancement calls of the applicant. They are distributed among the criteria of the Regulations for implementation of ADASRB in the following way – 6 in Criteria C (all referenced and indexed in the world scientific information databases Web of Science and Scopus) and 15 (incl. two book chapters) in Criteria D. In the list of publications, 3 are published in Q1 journals, 7 – in Q2 journals, 6 – in Q3 and 3 – in Q4 journals. Therefore, I conclude that the results are published in recognisable and well-established journals, which is a positive indication of the quality of the performed research. The prominent contribution to the results in the collaborative studies is evident from the leading role in many of them – in 13 publications she is the first author and in 4 – the second author. Assoc. Prof.

Detcheva has 110 citations on the publications with which she participates in the current procedure, all in scientific journals, referenced and indexed in Web of Science and Scopus. This is an indication of significant interest among the scientific community in the field.

Overall Assoc. Prof. Decheva has 442 citations of her scientific publications, and the Hirsch index according to Scopus is 12, with excluded self-citations of all authors (as of 13.09.2023). These values are a good indicator of the applicant's scientific recognition.

An essential component of scientific work is participation in research projects. Assoc. Prof. Dercheva demonstrates intensive project activities – according to the presented applicant's report, she has been a participant/consultant in eleven projects and team leader of one national research project.

The outcomes of the applicant's research have been presented in 25 oral communications and 124 posters of various national and international scientific forums.

Assoc. Prof. Detcheva has two patent letters for “Device for the introduction of liquid samples in flow systems” and participation in a scientific and applied development related to the direct analysis of solid samples by Electrothermal Vaporization ICP Optical Emission Spectrometry (ETV-ICP-OES) for the needs of „Aurubis Bulgaria“, Pirdop.

Evaluation of the scientific contributions

Based on the presented Habilitation extended report, as well as the research publications, I estimate the scientific contributions of Assoc. Prof. Detcheva as interdisciplinary and applied scientific. Many of the studies are performed in collaboration with a number of research teams from Bulgaria and abroad. These elements of interdisciplinarity and active research collaboration determine Assoc. Prof. Detcheva as an advanced researcher.

The research investigations of Assoc. Prof. Detcheva are in the field of analytical chemistry. I estimate the scientific contributions in the Habilitation extended and short report as original and correctly formulated and can summarize them as follows:

1. Application of ETV coupled to ICP-OES for analysis of solid samples.
2. Development and application of green analytical methods.

Evaluation of the applicant's teaching activities

According to the applicant's report on the teaching load Assoc. Prof. Detcheva has been a lecturer in the programme of the European Commission TrainMiC (“Training in Metrology in Chemistry”), in the Master programme “Spectroscopic analysis” of the Plovdiv University “Paisii Hilendarski”, in the Master Programme “Modern Spectral and Chromatographic Analytical Methods” of the Faculty of Chemistry and Pharmacy, Sofia University, and the Doctoral Programme of the Training Center of the Bulgarian Academy of Sciences. Assoc. Prof. Detcheva has been a co-supervisor of four pre-graduation interships' students and four PhD students.

Fulfilment of the minimal national requirements and the specific criteria of the Institute of General and Inorganic Chemistry

The comparative analysis on the fulfilment of the minimal national requirements for holding the academic position "Professor", as well as the minimal requirements of the Institute of General and Inorganic Chemistry – Bulgarian Academy of Sciences has indicated that the applicant fulfils and exceeds the above requirements.

Conclusion

The materials submitted for participation in this call meet and exceed the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations on its implementation, and the Internal Rules of the Institute of General and Inorganic Chemistry – Bulgarian Academy of Sciences.

The materials of the call, as well as my personal impressions from Assoc. Prof. Detcheva, give me a reason to conclude that she is a well-established researcher with high academic standards and significant research activities, which are essential for the development of the Atomic Spectrometry Methodology Laboratory of the Institute of General and Inorganic Chemistry – Bulgarian Academy of Sciences.

Based on what has been previously said, I give a positive assessment and recommend to the respected members of the Scientific Jury to vote for the appointment of Assoc. Prof. Albena Kirilova–DetchevaTchakarova, PhD, as a Professor in the Area of Higher Education 4. Natural sciences, Mathematics and Informatics, Professional Field 4.2. Chemical Sciences (Analytical Chemistry) for the needs of the Atomic Spectrometry Methodology Laboratory of the Institute of General and Inorganic Chemistry – Bulgarian Academy of Sciences.

16.09.2023 г.

Member of the Scientific Jury:

/Prof. Stefan Tsakovski, PhD/