

STATEMENT

by **Professor Albena Stoyanova Stoyanova, Engineer, DSc**

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on the materials presented for participation in the competition

for appointment to a **Professor's** academic position

at the Institute of Organic Chemistry with a Centre of Phytochemistry (IOCCP),

Bulgarian Academy of Sciences

higher education area: 4. Natural Sciences, Mathematics and Informatics,

professional field: 4.2. Chemical Science, research area: Bioorganic Chemistry, Chemistry of Natural and Physiologically Active Substances

There is one candidate registered to participate in the competition for a **Professor's** academic position as advertised in the State Gazette No 43/31 May 2019 and on the Internet page of IOCCP-BAS: **Assoc. Prof. Antoaneta Borisova Trendafilova-Savkova, PhD**, from IOCCP-BAS, the Laboratory of Chemistry of Natural Substances.

1. General Presentation of the Candidate's Procedure

The set of materials presented by Assoc. Prof. Trendafilova-Savkova, PhD, in electronic format **is in compliance with** the Regulations of IOCCP-BAS on the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria and **in full conformity with** the criteria for appointment to a Professor's academic position.

The materials, which have been prepared and arranged with exceptional precision, include: a list of the total number of scientific publications: 80, exclusive of the publications used in the PhD procedure (Diploma 24750/09 June 1997) and the procedure for appointment to an Associate Professor's academic position (Certificate 0000068/15 November 2011): 51; a list of 63 participations in scientific conferences; a list of 25 scientific research projects: the candidate has acted as participant in 21 of them (international: 9, funded by the Scientific Research Fund: 7, and funded by other sources: 5), and as project manager in 4 of them (international: 2, funded by the Scientific Research Fund: 2).

The assessment of the materials according to the respective criteria in compliance with Annex 1, which contains the Minimum Requirements of the Regulations of IOCCP-BAS on the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria, is as follows:

- for indicator A: 50 points;
- for indicator C: 13 publications: 3 in Q1, 8 in Q2, and 2 in Q3; or a total of 265 points;
- for indicator D: 20 publications: 5 in Q1, 4 in Q2, 7 in Q, and 4 in Q4; or a total of 358 points;

- for indicator E: 250 citations; or a total of 500 points;
- for indicator F: a total of 485.47 points (the topics of the scientific research projects are fully compliant with the research area of the competition).

The total number of points for all indicators is 1 658.47, or twice as high as the one specified in the minimum requirements, viz. 750.

I have known Assoc. Prof. Trendafilova-Savkova, PhD, since 2009, when UFT's Technological Faculty entrusted her with the duties of a scientific consultant of a PhD thesis prepared at the university. Over the years, I have had the chance of becoming acquainted with her research in the field of biologically active substances, their analysis in aromatic and medicinal plants, and evaluation of their biological activity. My personal impressions are that she is a hard-working, accurate and responsible researcher, very precise in her experimental work, constantly searching for new plant raw materials for analysis.

2. General Characteristics of the Candidate

In my opinion, Assoc. Prof. Trendafilova-Savkova's contribution can be classified as follows:

* **scientific contribution:** it enriches the knowledge of the chemical composition of plants

- phytochemical research including isolation, structural identification and quantitative evaluation of over 140 individual compounds, 24 of which are newly discovered, such as sesqui-, di- and triterpenoids, flavonoids, phenolic acids, furanocoumarins, sesquiterpene lactones, flavonoid glycosides, etc., in various species of medicinal plants of the *Artemisia*, *Inula*, *Jurinea*, *Centaurea*, *Anthhemis*, *Asterothamnus* and *Arnica* genera of the Asteraceae family, the *Alchemilla* genus of the Rosaceae family, the *Heracleum* genus of the Apiaceae family, the *Arum* genus of the Araceae family (a total of 22 publications: 5 in Q1, 7 in Q2, 5 in Q3, 3 in Q4, and 2 in others).

- evaluation of the chemical composition and biological activity of essential oils, some of them isolated for the first time, from different species of medicinal plants of the *Artemisia* and *Inula* genera of the Asteraceae family, of the *Sideritis*, *Panzeria* and *Thymus* genera of the Lamiaceae family, of the *Seseli* genus of the Apiaceae family (a total of 12 publications: 1 in Q1, 5 in Q2, 3 in Q3, 1 in Q4, and 2 in others).

* **applied scientific contribution:** with possible practical application

- optimisation of the conditions for extraction of biologically active substances from different medicinal plants, including monitoring of the effect of the extractant type and concentration, process temperature, ultrasound application, etc. (a total of 4 publications: 1 in Q2, 3 in others).

Assoc. Prof. Trendafilova-Savkova's pedagogical activity includes scientific consultancy for a PhD student who defended his thesis in 2011, research supervision for three diploma papers defended in 2009, 2013 and 2017 (the supervision of the diploma paper defended in 2013 has not been taken into account since the candidate's name is missing on the cover page of the diploma paper), and mentoring of two students in the Students' Practical Training programme.

The significance of the scientific and applied scientific contribution of Assoc. Prof. Trendafilova-Savkova's published materials has been recognised via the 250 citations in prestigious international scientific publications and the candidate's h-factor of 11.

3. Critical Comments and Recommendations

I have no critical comments concerning the materials presented.

My two recommendations are as follows:

1. Possibilities should be sought for the implementation of part of the scientific research related to the antimicrobial and antioxidant effect of the biologically active substances in pharmaceutical or cosmetic products.
2. The research on the chemistry and isolation of biologically active substances in the medicinal and aromatic plants studied can be compiled into a monograph or similar book so that they could be used in the training of graduate and post-graduate students.

CONCLUSION

The documents and materials submitted by Assoc. Prof. Antoaneta Borisova Trendafilova-Savkova, PhD, **are in compliance with** all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations on the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria, BAS's Regulations on the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria, and IOCCP-BAS's Regulations on the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria.

The candidate participating in the competition has presented a significant number of research works published after the materials used for the PhD procedure and the procedure for appointment to an Associate Professor's academic position. The candidate's work contains original scientific and applied scientific contribution which has received international recognition, and a representative part of it has been published by international academic publishers. Assoc. Prof. Trendafilova-Savkova's scientific qualification is **indisputable**.

The results achieved by Assoc. Prof. Trendafilova-Savkova, PhD, in her scientific research are **fully compliant with** the specific requirements of IOCCP-BAS's Regulations on the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria.

Having seen the materials and scientific works presented by the candidate and having analysed their significance and the scientific and applied scientific contribution contained therein, I have found sufficient grounds for a **positive** evaluation and for recommending that the members of the Scientific Jury prepare a report to the Scientific Council of the IOCCP-BAS suggesting that Assoc. Prof. Antoaneta Borisova Trendafilova-Savkova, PhD, be appointed to the academic position of Professor at IOCCP-BAS in higher education area: 4. Natural Sciences, Mathematics and Informatics, professional field: 4.2. Chemical Science, research area: Bioorganic Chemistry, Chemistry of Natural and Physiologically Active Substances.

04 September 2019

Statement prepared by:

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