

## OPINION

by: Albena Georgieva Jordanova, Professor of Biochemistry, Professional field: 4.3. Biological Sciences, Faculty of Medicine, Sofia University "St. Kliment Ohridski"

on the documents in a competition for the academic position "**Associate Professor**" in the field of higher education: 4. Natural sciences, mathematics and informatics, Professional field: 4.3. Biological Sciences, Scientific specialty: Biophysics, for the needs of the section "Lipid-Protein Interactions" at the Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences, announced in State Gazette, no. 32/ 04.26.2022.

Only candidate for participation in the competition: assistant professor Anelia Stefanova Kostadinova, PhD

### **1. Correspondence of the applicant's submitted documents with the required documents, according to the Regulations for occupying academic positions at the Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences**

All documents, presented in electronic version by assistant professor Anelia Kostadinova, fully meet the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its application and the Regulations for occupying academic positions at the Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences.

### **2. Brief biographical data about the candidate**

From the presented CV of Anelia Kostadinova, it can be seen that after graduating of the Nacional Aprilovska High school in Gabrovo in 1986, she continued education in the Faculty of Biology of the Sofia University "St. Kliment Ohridski", where he obtained the educational and qualification master's degree in "Cell Biology and Developmental Biology". In 1995 he started working as a biologist at the Institute of Biophysics, BAS, where he successively rose to assistant (2003) and assistant professor (2006). Her dissertation work on "*Modulation of interaction of cells with polymer surfaces and membranes*" in professional field: 4.3. Biological Sciences, scientific specialty: Biophysics, with scientific supervisor Prof. George Altankov was defended successfully in 2011 and she received the educational and scientific PhD degree. From the assurance attached to the documents, it can be seen that at the

present time Associate Professor Anelia Kostadinova has worked in her specialty at the Institute of Biophysics and Biomedical Engineering, BAS for 30 years.

### **3. Evaluation of the candidate's scientific, applied scientific and publication activities.**

The scientific research activity of assistant professor Anelia Kostadinova, PhD was carried out mainly in the "Lipid-Protein Interactions" section at the Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences, as well as in the "Electroinduced and Adhesive Properties" section at the same institute. Assistant professor Kostadinova's scientific publications, with which she participated in the current competition, are focused on the following scientific topics:

- Study of the interaction of different cell lines with synthetic and natural materials and their application in modern biomedicine. The biocompatibility and applicability of the tested materials were investigated by determining cytotoxicity and following changes in the cell adhesion phenotype, cell contacts and cell boundary complex. The obtained results have a fundamental contribution and enrich the knowledge about the mechanisms in the studied molecular interactions.
- Study of interactions between cell membranes and amphiphilic molecules of natural or synthetic origin and the changes in cell morphology, cell-cell and cell-extracellular matrix contacts. The scientific-applied contribution of these studies is aimed at the potential antitumor action of these molecules in *in vitro* model systems.
- Analysis of lipid-protein and lipid-lipid interactions in model membranes and cell models, investigating the influence of oxidized lipids on the arrangement and membrane organization, as well as the behavior of some membrane proteins.

In the current competition Associate Professor Anelia Kostadinova participated with **5 scientific publications** in referenced and indexed journals in world-famous databases (*Web of Science, Scopus*) (**indicator B4**), as well as **12 scientific articles**, also published in referenced and indexed journals in world-famous databases (**indicator D7**). The requirement "*that the candidate has at least 8 scientific articles in journals with an impact factor, which, at his discretion, he can distribute between criteria B4 and D7*" is met. According to **indicator D8** (*Published book chapter or monograph*), the book chapter: *Modifications of the polymer surface aimed at improving cell adhesion and interaction* (2019), Importance & Applications of Nanotechnology Publisher, MedDocs Publishers LLC, Online edition: <http://meddocsonline.org>, 2019, ISBN: 978-81-941833-0-3 with authors: Kostadinova A, Keranov I. The minimum requirements of the National Center for Information and



Documentation and of the Regulations for occupy the academic position "Associate professor" at Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences by groups of indicators in a professional field: 4.3. Biological Sciences are described in the table below. For comparison, the indicators of assistant professor Anelia Kostadinova for the participation in the current competition also are shown.

Group of indicators	Content	Minimal National Requirements for an Associate Professor	Minimal Requirements of Institute of Biophysics and Biomedical Engineering, BAS for an Associate Professor	Scoring of Assoc. Prof. Anelia Kostadinova, PhD
A	Indicator 1	50	50	50
B	Sum of indicators 3 or 4	100	100	105
Г	Sum of indicators from 5 to 10	200	220	235
Д	Sum of indicators from 10 to 12	50	60	64
<b>TOTAL NUMBER OF POINTS BY INDICATORS A-Д</b>		<b>400</b>	<b>430</b>	<b>454</b>

According to **indicator A.1. Dissertation work for awarding the educational and scientific PhD degree** assistant professor Anelia Kostadinova has presented an abstract and a diploma for obtaining the educational and scientific PhD degree for her PhD thesis "*Modulation of interaction of cells with polymer surfaces and membranes*" in professional field: 4.3. Biological Sciences, Scientific spatiality: Biophysics. The dissertation was successfully defended in 2011 and, according to the national requirements for the current competition, gives the necessary **50 points** for this indicator.

Regarding **indicator B.4. Scientific publications in publications that are referenced and indexed in world-renowned databases of scientific information**, the candidate in the competition has submitted **5 scientific articles** (two of them are in Q1-journals; another two - Q2-journals, and one presentation – in Q3) published in the period 1999-2022. In two of the publications, Dr. Kostadinova is the first author, and the all points from her publications cover the necessary legal requirements are **105 points**, with the minimum required 100 points.

**12 scientific articles** published in the period 2012-2022 were presented by the assistant professor Dr. A. Kostadinova for meeting the requirements under **indicator Г.7. Scientific publication in journals that are referenced and indexed in world-famous databases with scientific information**. In six of them she is the first author. According to **indicator Г.8. Published chapter of a book or monograph** A. Kostadinova presented her book chapter *Modifications of the polymer surface aimed at improving cell adhesion and interaction* (2019), in which she is a co-author with Ivan Keranov. The total sum of the points for the

indicators in group  $\Gamma$  of the candidate ( $\Gamma.7.+ \Gamma.8.$ ) is **235 points** with a required minimum of 220 points, according to the requirements of the Institute of Biophysics and Biomedical Engineering, BAS for the academic position "Associate Professor".

The candidate in the competition has submitted evidence of 32 citations to meet the requirements of **indicator Д** - *Citations in scientific publications, monographs, collective volumes and patents, referenced and indexed in world-renowned scientific information databases (Web of Science and Scopus)*. The total number of points for this indicator is 32 citations x 2 points = **64 points**, with a minimum of 60 points required. In Scopus, Dr. A. Kostadinova has an h-index of 6, as well as 194 citations of 25 scientific publications from 1999 to now (<https://www.scopus.com/authid/detail.uri?authorId=55652248900> ). In addition, Dr. Anelia Kostadinova has numerous specializations abroad, participation in the editorial boards of 3 international scientific journals, supervision of 5 graduate students, as well as permanent teaching activity at the Faculty of Biology of Sofia University from 2004 until now.

## 5. Conclusion

After careful consideration and analysis of the submitted documents for participation in the announced competition for the academic position "Associate Professor" in the field of higher education: 4. Natural sciences, mathematics and informatics, Professional field: 4.3. Biological Sciences, Scientific specialty: Biophysics, for the needs of the "Lipid-Protein Interactions" section at the Institute of Biophysics and Biomedical Engineering, BAS, announced in State Gazette, no. 32/04.26.2022, I confidently state that the candidate assistant professor Anelia Stefanova Kostadinova, PhD, meets the minimum national requirements of the National Center for Information and Documentation and complies with the terms and conditions defined by the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its application and the Regulations for occupying academic positions at Institute of Biophysics and Biomedical Engineering, BAS.

**I CONVINCEDLY SUGGEST assistant professor Anelia Stefanova Kostadinova to occupy the academic position "Associate Professor"** in the field of higher education: 4. Natural sciences, mathematics and informatics, professional fields: 4.3. Biological Sciences, Biophysics, for the needs of the section "Lipid-Protein Interactions" at the Institute of Biophysics and Biomedical Engineering, BAS.

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