

# OPINION

Regarding the application of **Assist. Prof. Kiril Mishev, PhD** in the competition for the academic position "**Associate Professor**" in the professional field 4.3 Biological sciences, scientific specialty "*Biochemistry*", Laboratory of "Regulation of gene expression", Institute of Plant Physiology and Genetics, Bulgarian Academy of Sciences (IPPG-BAS)  
announced in GG. 17/26.02.2021

from  
**Assoc. Prof. Dr. Nikolay T. Tzvetkov**

Head of Department „Biochemical Pharmacology and Drug Design“  
Institute of Molecular Biology „Roumen Tsanev“, Bulgarian Academy of Sciences (BAS)

## **General overview of the documentation and their compliance with the rules and criteria according to the Law on the Development of the Academic Staff (LDAS) of the Republic of Bulgaria and the Regulations of the Institute of Plant Physiology and Genetics at the Bulgarian Academy of Sciences for the academic position "Associate Professor"**

Assistant Professor Kiril Mishev, PhD is the only candidate in the competition for the academic position "Associate Professor" at the IPPG-BAS, announced on behalf of the laboratory "Regulation of gene expression". The set of documents presented for the competition complies with the requirements of the LDAS of the Republic of Bulgaria and the Rules for its application. The documents are well-arranged and convincingly show that, according to its scientific degree/position, scientific experience, research, publishing, and teaching activity, Assist. Prof. Kiril Mishev fully meets the requirements of the Rules of the Institute of Plant Physiology and Genetics at the Bulgarian Academy of Sciences for the academic position "Associate Professor" in the scientific specialty "*Biochemistry*" for the needs of the laboratory "Regulation of gene expression".

## **Education, career development, scientific, and professional experience on the scientific field**

Assist. Prof. Kiril Mishev has graduated at the Biological Faculty, Sofia University "St. Kliment Ohridski" in 2004 as a Master of Plant Physiology. In 2005 he has been assigned as Ph.D. student at the Institute of Plant Physiology and Genetics, BAS (IPPG-BAS). In 2009 he completed his Ph.D. with the title of his dissertation: "*Functional state of the photosynthetic apparatus and gene expression in chloroplasts in dark-induced natural aging*". Assist. Prof. Kiril Mishev received his educational scientific degree "Doctor of Philosophy" in 2010 (Diploma from the Higher Attestation Commission/VAC from 01.02.2010 in the scientific specialty "Plant physiology", IPPG-BAS). In 2008, Dr. Mishev has been appointed "Chief Assistant" in Biochemistry at IPPG-BAS, where he still works. Since 2010, Assist. Prof. Mishev very successfully applies his expertise and experience in the scientific fields of plant physiology, cell biology and biochemistry. During his career development Dr. Mishev has gained a remarkable work experience as a professional in a wide range of scientific areas as a co-worker at IPPG-BAS as well as a postdoctoral fellow in a number of prestigious international scientific institutions.

## **Specializations**

During his scientific career Assist. Prof. Mishev has specialized and worked as a visiting scientist in a number of renowned and internationally recognized scientific institutions such as: in 2007 - Institute of Plant Physiology at Martin-Luther University Halle-Wittenberg (Halle, Germany), 2010–2012 and 2014–2015 - Department of System Plant Biology, Flemish Institute of Biotechnology (Ghent, Belgium), 2018 – visiting scientist at the University of Hohenheim (Stuttgart, Germany), 2018 and 2019 - visiting scientist at the Institute of Experimental Botany at the Czech Academy of Sciences (Prague, Czech Republic).

During his professional career Assist. Prof. Kiril Mishev has been awarded with a number of prestigious national and international awards and grants. In 2007, he received a Doctoral Fellowship from the German Scientific Exchange Service (DAAD) to support his scientific research at the University of Halle-Wittenberg. In 2009, Assist. Prof. Mishev has been awarded with the prize for High scientific achievements in the field of plant biology (Award from the Rotary Club Sofia). During the years 2010–2015, Dr. Mishev received two prestigious international postdoctoral grants from the Flemish Agency for Innovation through Science and Technology (IWT) (2010–2012) and research grant from BASF SE (2014–2015). The specializations and invitations as a guest scientist in some of the worldwide leading organizations in the field of plant physiology, such as the Flemish Institute of Biotechnology (Ghent, Belgium), is an evidence of the international recognition of the experience, qualification and scientific expertise of Dr. Mishev.

## Scientific metrics

Assist. Prof. Kiril Mishev fulfils all specific requirements of the current competition for receiving the academic position "Associate Professor". In accordance with the regulations on the terms and conditions for acquiring scientific degrees and for holding academic positions in IPPG-BAS, the candidate for the academic position "Associate Professor" must have an h-index of not less than 8 (without self citations). According to the criteria, Assistant Professor Mishev fully meets the requirement to hold the academic position "Associate Professor" (h-index 8).

The candidate Assistant Professor Kiril Mishev has successfully defended his dissertation for the receiving of the scientific degree "Doctor" (Ph.D.). According to Indicator "A" of LDAS of the Republic of Bulgaria, Assist. Prof. Mishev fulfills the necessary minimum requirements for holding the academic position "Associate Professor".

In the present competition Assistant Professor Kiril Mishev participated with 16 scientific articles and review publications, all published in journals with high impact factor (JCR IF). According to Indicator "C" of the LDAS of the Republic of Bulgaria, Assist. Prof. Mishev participates with **4 Q1** scientific publications that are referenced and indexed in worldwide databases such as Web of Science and Scopus. It is noteworthy that the scientific articles selected in Indicator "C" have been published in many renowned international scientific journals, including *Nature Chemical Biology*, *Nature Communications*, *The Plant Cell*, and *PNAS*. Assist. Prof. Mishev fully meets the required minimum of 100 points for Indicator "C".

All **10 scientific and 2 review articles**, presented in a group of Indicators "D", were published after the acquisition of the scientific degree "Doctor" and the total JCR IF of all 12 publications of Assist. Prof. Mishev for the current competition is **98.964**. In 4 of the publications, Dr. Mishev is a leading (first or last) author. The total number of points for publications in which Dr. Mishev is a leading author is **87** (3 Q1 + 1 Q4). This number of points fully complies with the Regulations for the specific conditions for holding an academic position at IPPG-BAS: at least the half of the required number of points (**110**) for group of Indicators "D" needs to be formed on the basis of scientific publications in which the candidate is a first or corresponding author. The total number of points for Indicator "D" is **274** (required minimum of **220**). In addition, it should be noted the exceptional scientific activity of Dr. Mishev, which has participated in 23 scientific forums (international and national), where he has presented 8 talks.

The total number of citations noticed in the worldwide databases (Scopus, WoS) is **285**, and the number of cited articles is **19**. By the group of Indicators "E" Dr. Mishev significantly exceeds the required minimum of points (**570** points, required minimum is **100**).

From the presented official documentation it can be seen that during the period 2005–2021 Dr. Mishev has participated or was a leading researcher in **18** research and scientific-educational projects (9 national and 9 international). He was project leader/co-ordinator of 4 scientific projects (1 international). It should be mentioned that in the period of time 2013–2015 Dr. Mishev was a project leader from Bulgaria of bilateral project, completed under the Agreement between the Bulgarian Academy of Sciences (BAS) and Flemish Research Fund (FWO), which is an evidence of the valuable research activities of the candidate.

Based on the presented scientific metrics of the candidate as well as considering the official reference made, it is evident that Assist. Prof. Kiril Mishev meets and even significantly exceeded the general criteria for the minimum requirements that are defined by the LDAS of the Republic of Bulgaria and the Regulations for its implementation, as well as the Regulations of IPPG-BAS for holding the academic position of "Associate Professor" in "*Biochemistry*".

## Teaching activity

Dr. Mishev has a high-level teaching activity. In fact, since 2013 Dr. Mishev is a mentor for practical training of students from the Biological Faculty of the Sofia University "St. Kl. Ohridski" under the Operational programme "Human Resources and Development", as he was the supervisor of 8 internship students (1860 hours in total). I would like also to mention that in 2015 Dr. Mishev was the co-supervisor of a Master thesis work at the Flemish University of Applied Sciences and Arts (Ghent, Belgium).

## Scientific topics and achievements

The main scientific activity of Dr. Mishev is related to the period of his career development at the Institute of Plant Physiology and Genetics at the Bulgarian Academy of Sciences (IPPG-BAS). According to the presented report on the contributions of scientific papers, the list of publications and their citations, as well as the numerous contributions and to international and national scientific forums, it can be confidently stated that Dr. Kiril Mishev is a young, capable, and prosperous scientist. His research activities, reflected in the publications submitted for the competition, covers 4 scientific areas in the field of functional plant biology, as follows:

*The first scientific topic* is related to the study of molecular mechanisms for regulation of intracellular membrane traffic in plants. This scientific field has a significant interdisciplinary character, according to which Dr. Mishev has worked with scientific methods and approaches from the disciplines such as chemical biology, molecular and cell biology etc..

Within this scientific topic Dr. Mishev has participated in different projects associated with the identification and characterization of the mechanism of action (MoA) of new synthetic molecules, such as the growth inhibitor Secdin and

other small molecules, mostly discovered by using automated screening procedures of substance libraries. In this scientific field, Dr. Mishev has presented a total number of 5 scientific publications, one of which is a review article, and in another one he is a first author. It is also worth mentioning that in this scientific field Dr. Mishev has published the most high-impact factor publications.

*The second* research field of Assistant Professor Mishev is related to the establishment of mechanisms of hormonal regulation in plants and the interaction of phytohormonal signalling pathways. I would like to point out one of the scientific achievements of Dr. Mishev on the topic. Within this scientific topic Dr. Mishev and other scientists have applied for the first time in functional plant biology the induced protein aggregation approach using BIN2 kinase as a model system (publication Г7\_5). In this scientific field Dr. Mishev has published 5 publications, one of which is a review article. The very high quality of all publications in this topic is impressive.

*The third* research area of Assistant Professor Mishev is one of the most actual due to the fact that it is related to the adaptation of plants to changing environmental conditions. This is an extremely important topic concerning the impact of environmental stress conditions on the process of photosynthesis. Within this scientific field there are 4 publications presented, in two of which Dr. Mishev is the first author.

*The fourth* research field of Assistant Professor Mishev is related to the study of the structural and functional organization of ribosomal DNA in *Hordeum* (barley). Two research publications on this scientific topic are presented.

### **Conclusion**

From the review of the presented scientific production, gained and successfully developed high-impact scientific projects (international and national), participations in scientific forums and teaching activity it is clear that Assistant Professor Kiril Mishev is a young and talented researcher in the field of plant physiology with a strong interdisciplinary character of his research. Dr. Mishev as an experienced scientist, who, I am convinced, will achieve a lot of scientific success at the national and especially international level. In the years after his approbation, he demonstrated remarkable ingenuity, patience, original thinking, and perseverance in the search for new scientific knowledge. The scientific success of Dr. Mishev is reflected in the high-impact scientific metrics he has achieved. The scientific results have been published in many prestigious international journals with total JCR IF of all publications submitted to the current competition of **98.964**.

With his fundamental and applied scientific research, as well as with his active teaching activity, Assistant Professor Kiril Mishev meets all criteria of the Regulations of IPPG-BAS for the acquisition of the scientific position "Associate Professor". I recommend to the honourable scientific Jury to support the awarding of Assistant Professor Dr. Kiril Mishev as "Associate Professor" in *Biochemistry*.

Sofia, 17. June 2021

Signature:

Assoc. Prof. Dr. Nikolay T. Tzvetkov