



## APPRAISAL

by Prof. Dr. Boris L. Shivachev

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regarding the competition for the academic position of "Professor" in the professional field 4.2 Chemical Sciences, scientific specialty "Bioorganic Chemistry, Chemistry of Natural and Biologically Active Substances", for the needs of the Section "Molecular Design and Biochemical Pharmacology", Institute of Molecular Biology "Acad. Roumen Tsanev", Bulgarian Academy of Sciences (announced in the State Gazette, issue 114/24.12.2025).

Candidate: Assoc. Prof. Dr. Nikolay Tzvetkov Tzvetkov

### 1. General Overview of the Procedure

In the announced competition for the academic position of Professor in the professional field 4.2 Chemical Sciences, the sole candidate is Assoc. Prof. Dr. Nikolay Tzvetkov Tzvetkov, Head of the Section "Molecular Design and Biochemical Pharmacology" at the Institute of Molecular Biology "Acad. Roumen Tsanev" – Bulgarian Academy of Sciences (IMB–BAS). The submitted set of documents and scientific materials has been prepared in accordance with the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation, as well as the internal regulations of the Bulgarian Academy of Sciences and IMB–BAS. The documentation includes a curriculum vitae, a list of scientific publications, abstracts of the scientific works, a report on the fulfillment of the minimum national requirements, a habilitation report summarizing the scientific contributions, and copies of the publications submitted for the competition. The materials are clearly structured and contain all necessary documents required for an objective evaluation of the candidate's scientific and professional achievements.

### 2. Brief Biographical Information

Assoc. Prof. Dr. Nikolay Tzvetkov Tzvetkov is an established scientist in the field of bioorganic and medicinal chemistry. He obtained his doctoral degree (Dr. rer. nat.) in 2005 from Bielefeld University, Germany, following the successful defense of a dissertation in the field of organic synthetic chemistry and photochemistry. Prior to returning to Bulgaria, he gained substantial international experience as a researcher and lecturer at the University of Bonn and other research institutions, as well as through collaborative research projects with the pharmaceutical industry. In 2018, he was appointed Associate Professor at the Institute of Molecular Biology "Acad. Roumen Tsanev" – BAS, and since 2019 he has served as Head of the Section "Molecular Design and Biochemical Pharmacology". In this role he leads a

research team and actively contributes to the development of scientific projects and the training of young researchers and doctoral students.

### **3. Research Activity**

The scientific research of Assoc. Prof. Tzvetkov is focused on the synthesis, design, and investigation of biologically active organic compounds, as well as on the development of new approaches in medicinal chemistry. His research topics include organic synthesis, photochemical reactions, molecular design, and computational modeling of biologically active molecules. A significant part of his work is dedicated to the development of novel molecules with potential pharmacological activity and to the investigation of their physicochemical and biological properties.

The candidate is the author and co-author of a substantial number of scientific publications in international journals indexed in the Web of Science and Scopus databases. Many of these papers have been published in high-impact scientific journals, which attests to the high scientific level of the conducted research. His works are characterized by clearly defined scientific objectives, methodological rigor, and original scientific results.

### **4. Analysis of the Publications and Scientific Contributions**

The publications submitted for participation in the competition are closely related to the scientific specialty "Bioorganic Chemistry, Chemistry of Natural and Biologically Active Substances" and reflect the main research directions of the candidate. In these studies, new approaches for the synthesis of complex organic and polycyclic molecules have been developed, mechanisms of photochemical and radical reactions have been investigated, and the potential applications of the synthesized compounds as biologically active substances have been explored. Some of the publications also address the use of modern molecular modeling techniques and virtual screening approaches in the development of potential drug candidates. The candidate's scientific output is substantial and includes more than 100 publications in international peer-reviewed journals indexed in Web of Science and Scopus, with a considerable proportion appearing in first and second quartile (Q1 and Q2) journals. Assoc. Prof. Tzvetkov's publications have achieved high citation impact, with more than 6000 citations in Scopus and an h-index of 25, demonstrating the significant visibility and influence of his scientific results within the international research community. The obtained results are characterized by scientific novelty, sound experimental justification, and relevance for the development of modern medicinal chemistry. They demonstrate a consistent development of research topics and clearly defined scientific contributions that advance both the fundamental

understanding of organic reactions and the practical aspects of designing new biologically active molecules.

### **5. Scientific, Organizational, and Expert Activities**

In addition to his active research work, Assoc. Prof. Tzvetkov has also developed significant scientific and organizational activities. He participates in national and international research projects and maintains active collaborations with several universities and research institutions. The candidate is a member of international scientific organizations and serves as a reviewer for scientific articles in reputable international journals. These activities demonstrate his scientific authority and recognition within the international scientific community.

### **6. Conclusion**

Based on the submitted materials, the scientific publications, and the overall research activity of the candidate, I conclude that Assoc. Prof. Dr. Nikolay Tzvetkov Tzvetkov is a well-established scientist with significant scientific achievements and international recognition. His scientific output, participation in research projects, and scientific-organizational activities fully meet the requirements for the academic position of Professor in the professional field 4.2 Chemical Sciences.

On the basis of the above considerations, I give my positive opinion and recommend that the Scientific Council of the Institute of Molecular Biology – BAS elect Assoc. Prof. Dr. Nikolay Tzvetkov Tzvetkov to the academic position of Professor.

Date: 20 April 2026

Reviewer: PROF. DR. BORIS L. SHIVACHEV