

## OPINION

by

**Prof. Dr. Nikolay Tonev Stoyanov,**

**University of Mining and Geology “St. Ivan Rilski”**

Regarding a competition for the academic position of **Professor** in the field of higher education 4. *Natural Sciences, Mathematics and Informatics*, professional field 4.4. *Earth Sciences*, scientific specialty *Systems and Devices for Environmental Protection*, announced in the SG, Issue No. 1 of 06.01.2026, for the needs of the Department of *Engineering Geoecology* at the Faculty of Geology and Exploration, University of Mining and Geology “St. Ivan Rilski”.

The statement has been prepared on the basis of a decision adopted at the first meeting of the Scientific Jury, established by Order No. RD-13-7 of 10.02.2026 issued by the Rector of the University of Mining and Geology “St. Ivan Rilski”, held on 19.03.2026 (№ 1).

The sole participant in the competition is Assoc. Prof. Dr. Anatoliy Tsankov Angelov, who has been a member of the academic staff of the Department of Engineering Geoecology since 1996. Within this department, he successively obtained the scientific degree “Doctor” in 2009, the academic position of Associate Professor in 2011, and since 2012 to the present has been Head of the same department.

The set of documents and materials submitted by the candidate complies with the formal requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, its Implementing Regulations, and the Rules for the Appointment to Academic Positions at the University of Mining and Geology “St. Ivan Rilski”. No omissions have been identified in the administrative procedure conducted thus far.

### **Publication Activity**

In the competition for the academic position of Professor, Assoc. Prof. Dr. Anatoliy Angelov participates with 67 scientific publications produced after the acquisition of the academic rank of Associate Professor. The works submitted fully correspond to the professional field and scientific aspect of which the competition has been announced.

The list includes 12 publications—articles and conference papers in scientific journals and proceedings indexed in the global scientific databases Scopus and Web of Science (WoS); 53 publications in non-indexed peer-reviewed journals and reviewed volumes from scientific forums such as conferences and symposia; 1 publication classified as a study or a chapter in a collective monograph; and 1 textbook.

These outputs are appropriately distributed within the report documenting compliance with the minimum national and institutional scientometric requirements for the academic position of Professor under indicator groups “B” and “G”. Only the textbook is included in the assessment of scientometric indicators, and it has been correctly assigned to group “E”.

It makes an outstanding impression that 2 publications are in Q1-ranked journals, 3 publications in Q2, 4 publications in Q3, and 3 publications in Q4.

The six publications included in the habilitation report under indicator group “B” address topics closely related to the tools and methods for solving various environmental problems, which can be thematically grouped into several areas: (i) advancement of the concept of microbial fuel cells; (ii) treatment of acid mine drainage using bioelectrochemical systems; (iii) development of hybrid photo-bioelectrochemical systems; and (iv) development of carbon nanomaterials as electrocatalysts for bioelectrochemical systems.

All submitted publications are co-authored, which is logical and justifiable given the complex nature of the research and the requirement of teamwork involving specialists from different fields.

The candidate is the lead author of 10 publications, 6 of which are indexed in Scopus. This demonstrates his ability to conduct and lead research activities with a high quality of results. It is also noteworthy that over 85% of all scientific works have been published in English, which significantly enhances their international visibility and dissemination.

The candidate has presented papers at international scientific conferences and congresses held in Bulgaria, Spain, Serbia, and Turkey.

### Citations of Scientific Publications

The report submitted by Assoc. Prof. Dr. Anatoliy Angelov regarding compliance with indicator group “D” attests to the very high quality of his scientific output and the strong research interest it has attracted. The number of citations identified by the candidate in the period following the acquisition of the academic rank of Associate Professor is 78, all of which are in publications indexed in internationally recognized databases—Scopus and Web of Science (WoS).

### Participation in Research and Educational Projects

Evidence of the successful professional development of Assoc. Prof. Dr. Anatoliy Angelov after his habilitation in 2013 is his leadership of 11 national research and educational projects, as well as his participation in 1 international research project and 14 national research and educational projects. In addition to the significant scientific results achieved through the projects led by the candidate, these projects are also well supported financially. According to the submitted report, the total funding attracted amounts to BGN 424000. The stated quantitative indicators are accurately reflected in the report on compliance with the minimum scientometric requirements under indicator group “E”.

### Teaching Activity. Supervision of PhD Students

The candidate demonstrates highly substantial teaching activity. For the period 2021–2025, the courses he has delivered (lectures and practical classes) comprise of 10 academic disciplines, five of which are taught to Bachelor’s degree students and five to Master’s degree students. The candidate’s average annual teaching workload for the period is approximately 600 contact hours, which significantly exceeds the minimum teaching load required for academic staff at the University of Mining and Geology “St. Ivan Rilski”. He is also a co-author of the university studybook “A Practical Guide to Industrial Wastewater Treatment Exercises”.

Within a relatively short period over the past ten years, Assoc. Prof. Dr. Anatoliy Angelov has established his own school of highly qualified young researchers. According to data from the National Centre for Information and Documentation, during this period five PhD students have successfully defended their dissertations under his supervision—four in the scientific specialty *Systems and Devices for Environmental Protection* and one in *Water Treatment Technologies*. These data have been correctly included in the submitted report under indicator group “E”.

### Science Indicators

The summarized data presented in Table 1 on the scientific applied research, and teaching activities of Assoc. Prof. Dr. Anatoliy Angelov demonstrates that he fully meets the minimum national and institutional scientometric indicators required for the academic position of **Professor**, and in some indicator groups significantly exceeds them.

**Table 1. Scientometric Indicators for the Academic Position of Professor**

Indicators	Minimum requirement	Fulfilled by the candidate
Group A	50 points	50 points
Group B	100 points	120 points
Group C	200 points	419 points
Group D	100 points	395 points
Group E	150 points	635 points
Total:	600 points	1619 points

## **Main Scientific and Applied Research Contributions**

The principal contributions within the works of Assoc. Prof. Dr. Anatoliy Angelov provide new knowledge and expand contemporary understanding across a range of diverse, yet directly related thematic areas within the scientific field of the competition: (i) advancement of the concept of microbial fuel cells and analysis of the factors determining their efficiency; (ii) methodological approaches involving the application of bioelectrochemical systems for the treatment of acid mine drainage and mining wastewater; (iii) optimization of biomethanation and biogas production through microbial electrolysis cells during anaerobic degradation; (iv) active and passive systems for the treatment of mining wastewater; (v) development of hybrid photo-bioelectrochemical systems and investigation of the underlying processes; (vi) development of carbon nanomaterials as electrocatalysts for bioelectrochemical systems; (vii) treatment of municipal solid waste leachate; (viii) environmental monitoring and bioremediation of sites impacted by mining activities; (ix) environmental risks associated with unconventional energy technologies.

In general terms, the candidate's main contributions fall into the categories of scientific, applied methodological, provision of new data, and enrichment of existing knowledge.

## **Critical Remarks and Recommendations**

No substantial shortcomings in the candidate's scientific work have been identified that would warrant critical remarks. Only two recommendations, oriented toward his future development. The first is to prepare a monograph summarizing the results of his scientific research. The second is to further deepen his work related to the application of innovative water treatment methods, including electrochemical decomposition, photocatalytic oxidation, nanotechnologies for adsorption, ultrafiltration, and efficient sludge treatment methods.

## **Personal Impressions**

Assoc. Prof. Dr. Anatoliy Angelov is well known for two decades and have very positive impressions from our collaborated work. The candidate is highly industrious, exceptionally meticulous, responsible in his scientific activities, an erudite professional, an excellent lecturer, and a successful leader. It is key that the person possesses strong literature awareness and computer literacy, extensive practical experience, and well-established teamwork skills.

## **Conclusion**

The set of documents and materials submitted by the candidate demonstrates that, in terms of scientometric indicators, the scientific and applied contributions contained therein, and the relevance of the research topics addressed, fully comply with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, its Implementing Regulations, and the Rules for the Appointment to Academic Positions at the University of Mining and Geology "St. Ivan Rilski".

**This provides sufficient grounds for us to give a positive assessment of the candidate's scientific and professional activities and to strongly recommend that the esteemed members of the Scientific Jury prepare a report-proposal to the Academic Council of the Faculty of Geology and Exploration at the University of Mining and Geology "St. Ivan Rilski" for the election of Assoc. Prof. Dr. Anatoliy Tsankov Angelov to the academic position of Professor in professional field 4.4. *Earth Sciences, scientific specialty Systems and Devices for Environmental Protection.***

Sofia, 20.04.2026.

Evaluation prepared by:

**/ Prof. Dr. Nikolay Stoyanov /**