

OPINION

on the competition for the academic position of ASSOCIATE PROFESSOR
at the Central Laboratory of Applied Physics, Bulgarian Academy of Sciences, Plovdiv
In Professional Field 4.1 Physical Sciences within Area 4 Natural Sciences, Mathematics and
Informatics, speciality Condensed Matter Physics, announced in State Gazette No. 55 of 08.07.2025

Candidate: Senior Assistant Professor Dr Hristo Todorov Kisov,
Central Laboratory of Applied Physics, BAS

This opinion has been prepared by Prof. DSc Veselin Todorov Donchev, Faculty of Physics, Sofia University “St. Kliment Ohridski”, in his capacity as a member of the scientific jury for the competition, pursuant to Order No. 32/21.08.2025 of the Director of the Central Laboratory of Applied Physics, BAS.

Hristo Todorov Kisov is the sole candidate in the competition. For participation in the competition, the candidate has submitted 28 publications, 2 patents, and one patent application. Of the publications, 15 are indexed with an Impact Factor and 12 with SJR. With respect to quartiles, 8 publications are in Q1, 3 publications are in Q2, 3 publications are in Q3, 1 publication is in Q4, and 1 publication has neither quartile ranking nor SJR. Hristo Kisov is the first author in 7 of the works. The total number of citations of the publications is 39, and according to *Scopus*, his h-index is 4. Also presented are co-author declarations regarding the candidate’s contribution to the individual publications, certificates and documents from the Patent Office of the Republic of Bulgaria, civil contracts and attestations for conducted teaching activity, and two confirmations for supervision of diploma students.

Hristo Kisov graduated in Engineering Physics from the “Paisii Hilendarski” University, Plovdiv, with a specialisation in Laser Engineering and Technologies in 1996, obtaining the degree of Master of Physics. He was an external doctoral student at the same university from 2005 to 2009, but to date remains disenrolled with the right to defend. Immediately after that, he became a full-time doctoral student at the Technical University of Sofia, Plovdiv branch, Department of Laser Technology and Electronics, and in 2013 was awarded the degree of *Doctor* in Professional Field *Electrical Engineering, Electronics and Automation*, scientific speciality *Quantum Optoelectronics*. From 1999 to 2017, he worked in several companies and institutes. At present, he is employed as Chief Assistant Professor at the *Institute of Optical Materials and Technologies “Acad. Y. Malinovski”*, BAS (since 2017), and at the *Central Laboratory of Applied Physics*, BAS, Plovdiv (since 2021).

Hristo Kisov’s research activity is characterised by valuable scientific and applied contributions. They can be summarised as the development of new material media and laser systems, and their application in the design and investigation of elements based on biological substances. In particular, non-resonant (random) lasers have been developed and studied, based on media containing two types of organic dyes, incorporated in a solid-state polymer matrix and in solutions with nanoparticles. Some of the results are of pioneering significance. The candidate’s

contributions also include the development and optimisation of laser systems and technologies for the deposition of thin nanometric layers of biological materials under vacuum. As a result, the first vacuum system at IOMT–BAS was created for obtaining thin layers of biological substances on diffraction gratings, and a highly efficient biosensor was fabricated. It is worth also noting the theoretical developments and model calculations of surface plasmon excitation in gratings assisted by liquid crystals, as well as the penetration of laser radiation into opaque (dental) tissues.

The candidate's scientific contributions are characterised by the development of new systems and methods, as well as by the application of scientific achievements in practice.

Hristo Kisov has teaching experience as a part-time lecturer at the *Agricultural University, Plovdiv*, and at *Plovdiv University*, as well as during his doctoral studies at the *Technical University of Sofia – Plovdiv branch*. He has delivered lectures on “*Laser technology*” and “*Measurement of Laser Parameters*”, as well as numerous seminars and laboratory exercises in general physics and on specific issues related to optoelectronics, such as “*Measurement of Laser Parameters*” and “*Laser technology and Optoelectronic Devices*”, among others. He has supervised **nine diploma students**, all of whom successfully defended their theses.

I consider that the candidate's accumulated experience in research and teaching is an excellent prerequisite and fully meets the requirements for the position of Associate Professor. The documents he submitted for the competition comply with and exceed the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (RB) and its implementing regulations in RB, as well as in the Central Laboratory of Applied Physics, BAS.

I have known Hristo Kisov since 2023, when he was a student in the Master's program “*Microelectronics and Information Technologies*”, in which I teach two courses. Hristo was a diligent student and justly received excellent grades on both examinations.

In view of all presented above, I hereby give my **positive assessment** and recommend that the esteemed commission propose to the respected Scientific Council of the Institute of Electronics, BAS, to elect **Senior Assistant Professor Dr Hristo Todorov Kisov** to the position of **Associate Professor** in Professional Field 4.1 *Physical Sciences*, speciality *Condensed Matter Physics*.

Sofia, 06.10.2025

Signature:

/Prof. DSc Vesselin Donchev /