R E P O R T

for competition for occupation of the academic position of "Professor" in the professional field 4.1."Physical Sciences", scientific specialty "Condensed matter physics (Wave processes)", according to the announcement in State Gazette no. 21 of March 3rd 2022

Applicant: DSc. Tinko Alexandrov Eftimov, Central Laboratory of Applied Physics - BAS

Reviewer: Dr. Tsvetanka Krumova Babeva, Professor at the Institute of Optical Materials and Technologies "Acad. J. Malinowski" (IOMT) - BAS

General description of the materials presented

The sole applicant in the competition is DSc Tinko Alexandrov Eftimov from the Central Laboratory of Applied Physics - BAS. He participates with 32 journal papers, 1 patent, 1 monograph and 4 book chapters (co-authored). All papers were published in referred journals with impact factors, which were classified as follows: 1st quartile -9 papers, 2nd quartile -8 papers, 3rd quartile -2 papers, 4th quartile-13 papers. Book chapters have been published in journals of Q4 category with SJR. It is noteworthy that some of the papers were published in very prestigious journals such as *J. of Lightwave Technology* (IF 4.439), *Optics & Laser Technology* (IF 4.393), *Journal of Luminescence* (IF 4.1), *Sensor* (IF 3.847), *Optical material* (IF 3.754) etc., which proves undoubtedly the high scientific level of the obtained results. A total list of 147 citations and a list with over 20 essential citations are presented. The papers from the competition were cited 117 times. The reference in Scopus inquired on August 2nd 2022 shows 534 citations (excluding self-citations) and *h*-index of 11.

DSc Eftimov meets the minimum national requirements, the requirements of ZRAS-BAS and those of IFTT-BAS, and his indicators for individual groups significantly exceed the minimum: group A - 50 points (out of at least 50), group B - 100 points (not required), group V – 328 points (out of at least 100), group G – 331 points (out of at least 220), group D – 296 points (out of at least 200), group E – 319 points (out of at least 150). All publications and citations of the applicant presented in this competition were not used either in his habilitation procedure or in acquiring PhD and Doctor of Science degrees.

General characteristics of the applicant's scientific, applied and teaching activities

DSc. Tinko Eftimov works mainly in the field of fiber optics, developing fiber-optic structures and sensor systems for monitoring the temperature and the change in the refractive index of the medium near the fiber. The change can be due to a variety of external stimuli, including the presence of bacteria and viruses attracted and retained on the surface of the fiber through specially developed methodologies. For this reason, fiber

optic structures can be used as transducers for optical biochemical sensors. Active work is currently underway in the field of fiber optics, and efforts to improve and refine the structures continue aiming at expanding the range of applications and commercialization. Competition is severe, which makes it even more difficult to keep up-to-date. Without a doubt, I can say that the contributions of Dr. Tinko Eftimov in the field are substantial and recognizable, which makes them even more valuable As support, I will mention the response in the literature (over 500 citations), the numerous publications in refereed and reputable journals (over 100 papers are referenced in Scopus) and invitations to work abroad**.**

As for the teaching activity of the applicant, I can say that it is impressive. DSc Eftimov is a long-time university lecturer and has worked both in Bulgaria (Plovdiv University and Technical University - Sofia) and abroad - University of Quebec, Gatineau, Quebec, Canada and in the Laboratory of Communication, Helsinki University of Technology, Espoo, Finland. He has developed and delivered numerous courses. He was the supervisor of two successfully awarded PhD students, as well as the supervisor of 11 master's and 32 bachelor's theses at Plovdiv University. I should mention the strong contribution of the applicant for propagation of physics through more than 30 public demonstrations on physics in different cities of Bulgaria with a university team of PU in the period 2008-2016.

DSc. T. Eftimov has been, and is currently, the project leader of projects funded by Bulgarian National Science Fund and the Natural Sciences and Engineering Research Council of Canada. He has participated in the working teams of numerous projects for scientific research and scientific infrastructure.

Basic scientific and applied scientific contributions

I characterize the basic scientific and applied scientific contributions of the applicant as "*enrichment of existing knowledge and theories and application of scientific achievements in practice*". The contributions are obtained in two main areas:

- Development of fiber optic structures for application in sensors and refractometry;
- Emission analysis of i) food products in order to develop an express and non-contact identification method and ii) glasses, crystals and liquids for engineering applications.

Proof of the applied character of the applicant’s contributions is filing the patent. The applicant participated in the competition with a patent for the development of an acoustic fiber-optic sensor system for acoustic monitoring of extensive marine and terrestrial areas. Knowing DSc Tinko Eftimov, I have no doubt about the significant personal contribution of the applicant in the results.

I do not have critical remarks and recommendations.

CONCLUSION

The sole applicant in the competition, DSc Tinko Alexandrov Eftimov, presented a sufficient quantity and quality of materials that not only fully comply with the minimum national requirements as well those of BAS and ISSP - BAS for the academic position of "Professor", but also exceed them. The research and applied activities of the applicant are in an up-to-date field; the results obtained contribute positively to the field and are visible in the international research society. The applicant's teaching activity is impressive. The candidate has rich scientific and administrative experience.

Based on all written above, I give my positive assessment and strongly recommend the esteemed Scientific Jury to support the application and propose to the Scientific Council of ISSP - BAS to award DSc Tinko Alexandrov Eftimov the academic position "Professor" in professional field 4.1. Physical sciences.

Date: 2nd August 2022

Reviewer:

/Prof. Dr. Tsvetanka Babeva/