

REPORT

for the achievements of Assoc. Prof.D.Sc. Sevjan Ahmedov Hakkaev, sole participant in a competition for professor, in the professional field 4.5. Mathematics (Mathematical Analysis) in the Department of Mathematical Analysis of the Bishop K. Preslavski University at Shumen, announced in the State Gazette issue 55 / 12.07.2019. by Stanimir Troyanski, D.Sc., Associate Member of the Institute of Mathematics and Informatics, Member of the Bulgarian Academy of Sciences (e-mail stroya@um.es, GSM ++ 359 888722759), appointed by Order No. ПД-16.091 / 11.09.2019 of the Academic Board of the competition.

S. Hakkaev graduated from the Faculty of Mathematics and Informatics of the University of Shumen in 1993. Since 1995 has worked in the Department of Mathematical Analysis at the same university. After a successful doctoral studies (1998 - 2002), he defended his Ph.D. thesis in 2004. In 2007, was elected Associate Professor. Since 2010 he is a Doctor of Mathematics. S. Hakkaev teaches the basic courses in Mathematical Analysis. He reads specialized courses: Functional Analysis and General Topology. In addition, he lectured as a guest lecturer at the University of Kansas, Kansas, United States, during the winter semester of the 2010/11 academic year, during the summer semester of the 2011/12 academic year, at Yeditepe University, Istanbul, Turkey. S. Hakkaev is author of 34 publications. His scientific interests are shaped by the beneficial influence of his supervisor Prof. K. Kirchev. Generally speaking, Mathematical Physics problems and related problems of Nonlinear Partial 2

Differential Equations are considered. In particular, the stability of solitary waves of different equations, nonlinear dispersive equations, the inverse spectral scattering problem. In order to work in this field, he has mastered, a huge mathematical tools, constantly follows the new results in these fields and creatively applies them, showing ingenuity and specific approach. In general S. Hakkayev combines the powerful and well-developed methods of the Partial Differential Equations with the ideas of Functional Analysis. Together with K. Kirchev, he start with Benjamin-Bona-Mahony type equations. Over time, it goes on with the Camassa-Holm equations, the Korteweg-de Vries equation, the nonlinear Schrodinger equation, the Boussineq equation, the Klein, Gordon, Zakharov equations, the Holm-Staley equations, the Ostrovsky equation, and the many others. One textbook on ordinary differential equations and 12 papers are presented for the competition. The textbook and all articles were published after 2010, i.e. after the election of S. Hakkayev as Associate Professor and obtaining the scientific degrees "Doctor" and "Doctor of Mathematical Sciences". Articles have been published in prestigious specialized journals such as SIAM Journals, Advances in Differential Equations, Nonlinear Analysis, Zeitschrift fuer Angewandte Mathematik und Physik, and general mathematical journals such as Proceedings of the Royal Society of Edinburgh: section A Math., Indiana University Math. J . All journals have Impact Factor. Their quartile distribution according to Scopus and Web of Science is: Q1-7, Q2-4, Q3-1. 87 citations have been noted. The papers were written with co-authors. From the unity of the subject, we can assume that S. Hakkaev is the initiator of writing most of them. This is confirmed by his continued scientific positions at the universities where his co-authors work: August 2007-July 2008 Institute of Mathematics and Statistics, Sao Paulo University, Sao Paulo, Brazil, August-December 2010 and May-June 2018, Department of Mathematics, University of Kansas, Lawrence, Kansas, USA. In addition, there are long-term visits to Zhejiang Normal University, Jinhua, China, Faculty of Arts and Sciences, Department of Mathematics and Computer Sciences, Istanbul Aydin University, Istanbul, Turkey. S. Hakkaev is a reviewer of more than 10 well known journals. For instance Journal of Differential Equations, Journal of Mathematical Analysis and Applications, Nonlinear Analysis, Physics Letters A and others. In my opinion, the results of the presented papers are more than enough both in quality

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and quantity for obtaining the academic title of professor. I strongly recommend the Honorable Jury to elect Assoc. Prof. Sevjan Ahmedov Hakkaev as PROFESSOR in the 4.5 Mathematics (Mathematical Analysis).

Sofia, November, 1st 2019.

A handwritten signature in black ink, appearing to read "S. Troyanov". The signature is written in a cursive style with a long, sweeping underline that extends to the right.