

REPORT

concerning

the materials submitted for a competition for the academic position of associate professor in the scientific specialty 4.2. Chemical Sciences (Unit operations in the Chemical and Biochemical Technology) for the needs of the laboratory "Transfer processes in multiphase media" - Institute of Chemical Engineering - BAS, published in the State Gazette No 37 / 07.05.2021

The only candidate who submitted documents According to the announced competition, is Dr. Dimitar Nikolaev Kolev.

Dr. Kolev graduated from HIMEE "Lenin" Sofia in 1988 with a master's degree, specialty "Heat and Mass Transfer Equipment". He obtained his PhD degree in 2005 at IChE. He has worked consecutively in IChE as a technologist, in "Ecosystem" ST as a manager, in "Unitech" - Ltd. as technical director, in "Trade and Technology Company" LLC as executive and technical director. Dr. Kolev was a part-time lecturer at UMG "St. Ivan Rilski" Sofia in 2006-2007 and 2010-2012

The candidate for associate professor Dr. Dimitar Kolev presented for the competition a total of 37 publications, distributed as follows:

In journals with IF - 7: *Applied Thermal Engineering* (Q1) - 1; *Chemical Engineering and Processing-Process Intensification* (Q1) - 4; *Bulgarian Chemical Communications* (Q4) - 2.

In journals with SJR - 1: *Journal of Chemical Technology and Metallurgy* (Q3) - 1;

In journals without impact factor - 10: *Journal of Environmental Protection and Ecology* - 1; *Comptes rendus de l'Académie bulgare des Sciences* - 2; *Chemical Engineering Transactions* - 1; *Advances in Bulgarian Science* - 1; *International Scientific Publications: Materials Methods & Technologies* - 3; *International Scientific Publications: Ecology & Safety* - 1; *Utilities Magazine* - 1.

D. Kolev is the only author of one publication, and in 7 he is the first author.

Reports from scientific forums printed in full - 9.

Patents - 10, of which 7 in Bulgaria and 3 abroad. Two of the patents have been introduced into production. Two of the patents are independent, and in 5 he is the first author.

The listed publications are cited 54 times, and 3 of the patents are cited 17 times, with the author's *h*-factor being 6.

D. Kolev has participated in 2 projects with NSF and has been part of the team in six implementations in industry.

Dr. D. Kolev has given lectures and exercises in 9 disciplines, including "Fuel Equipment and Technology", "Gas and Heat Supply", "Gas Equipment", "Heat and Power Engineering" etc. in UMG "St. Ivan Rilski" during the academic years 2006/2007, 2010/2011 and 2011/2012.

The total rating of Dr. Kolev, according to the current system for evaluation of the qualities of researchers in IChE is 50,465 points (45,785 from scientific activity) and exceeds the minimum threshold, required to maintain an application for habilitation. The candidate fulfills all other additional requirements for holding the academic position "Associate Professor" at IChE-BAS.

There are some inaccuracies in the presented IF and SJR data of the publications. Below is an adjusted table of the minimum required points by groups of indicators:

Group of indicators	Content	Minimum for Associate Professor	Of the candidate
A	Indicator 1	50	50
B	Indicator 2	-	-
C	Indicators 3 or 4	100	124
D	Sum of indicators from 5 to 10	220	390
E	Sum of points in indicators 11	60	104
F	sum of the indicators from 12 to the end	-	-

The total number of points is 668 with a required minimum of 430.

The main scientific and industrially focused interests of Dr. Kolev are in the following fields: waste gas purification, waste heat recovery, new heat exchanger's design and characterization of highly efficient packing for heat and mass transfer devices.

The main contributions in the submitted materials of the competition can be systematized as follows:

- A new element for a redistributive layer with low hydraulic resistance has been invented and its characteristics have been determined (publ. II.1, I.1, I.6, I.9, I.12);
- A new type of plate heat exchanger has been invented and its efficiency has been proven (publ. II.2, I.4, 15 and 18).
- A method has been selected and an experimental installation has been constructed to characterize new high-performance packings (publ. I.5, I.7, I.10);
- A technology has been developed for cleaning the flue gases of small and medium-sized SO₂ boilers (publ. I.11 and I.16).
- A new gas turbine cycle is proposed, in which air and water vapor are supplied to the combustion chamber and the characteristics of the gas turbine cycle are calculated (publ. II.5 and I.8).

CONCLUSION:

The presented materials in volume and quality meet the requirements of the Internal Regulations of IChE, the Regulations on the terms and conditions for obtaining scientific degrees and holding academic positions in the Bulgarian Academy of Sciences, the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for LDASRB. I fully support the candidate in the competition for the academic position of associate professor in the scientific specialty "Unit Operations in the Chemical and Biochemical technology" and I will vote "Yes", the esteemed jury to propose to the Scientific Council of IEES to appoint Dr. Dimitar Kolev as Associate Professor.

Sofia

09.09.2021

(Prof. Dragomir Yankov, PhD)