

OPINION

by Prof. Dr. Eng. Liliana Zashkova Stoyanova, HTMU – Sofia,

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of materials submitted for participation in a competition for the academic position "Associate Professor"

Field of higher education 5. Technical sciences,

Professional direction 5.4 Energy,

Specialty "Industrial heat engineering"

In the competition for "Associate Professor", announced in State Gazette No. 54/ 25.06.24 and on the website of TU - Gabrovo for the needs of the Department of Energy Technology at the Faculty of Mechanical Engineering and Instrumentation, the only candidate took part. Plamen Yordanov Penchev, Ph.D

1. Overview of the content and results in the presented papers

Dr. Plamen Yordanov Penchev, who submitted documents in this competition, is currently the chief assistant in the Department of Energy Technology at TU - Gabrovo. In the previous years of his work, he had about 20 years of experience as a manager and contractor of companies in the field of Industrial Heat Engineering. He graduated with a degree in Industrial Heat Engineering from TU - Gabrovo. In 2007, he defended his doctoral thesis on the topic: "Intensification of heat transfer by combination of deep-spirally corrugated tubes and twisted tapes".

A total of 21 items participated in the competition. scientific publications plus an abstract of a dissertation work, of which 1 - with impact factor, 2 items - without impact factor in scientific journals abroad, 9 - items. articles in magazines in our country, 2 - in international conferences abroad in 4 in conferences in our country, with 67 citations and 13 scientific projects as a contractor. During the review of the scientific publications, I found that in 9 numbers he is the sole author, and in the others he is co-author in 1st, 2nd and 3rd place respectively. He wrote a monographic work on the topic: "Heat transfer enhancement with tube inserts:

how can we define the best benefit" The monographic work has a reviewer and I will not comment on it.

There are 1 items written book and 1 study aid. Reported for 33 pcs. built and implemented industrial installations.

2. General characteristics of the applicant's activity

2.1. Educational and pedagogical activity

Chief Assistant Plamen Penchev, in the years he worked at TU - Gabrovo, led lectures and exercises for Bachelor Degrees in the following disciplines: Heat exchange devices, Heat and gas supply, Refrigeration technology and Drying technology, for Master Degrees, as follows: Refrigeration installations, Refrigeration and freezing and Gas supply systems.

During this period, he was the head of 20 units. graduates. He participated in the preparation of the curricula, in the disciplines he leads. He is author of 1 textbook on "Gas Supply" and co-author of 1 textbook - study aid on "Heat Exchangers".

A characteristic feature of his pedagogical activity is that, with his participation and leadership, a number of stands were built, both for educational purposes and for scientific research.

Based on what was written above in this point, it is clear that the candidate has a serious pedagogical activity, which is one of the most important indicators for the academic position "Associate Professor".

In conclusion, I would like to note that Chief Assistant Professor Penchev is a well-established university teacher.

2.2. Scientific and scientifically applied activity

In terms of scientific topics, the presented scientific production, including the above-mentioned works, can be referred to the following scientific directions in the field of Industrial Heat Engineering, namely:

- Heat transfer augmentation techniques at limited pumping power.
- Determination of TA efficiency by minimization of generated entropy for cases TA with annular channels, with spiral strips, spirally wound springs, with dimpled tubes, with rolled tubes.

- Drying and dryers.
- Heat pump systems.
- Boiler water heating systems using solar collectors.

All scientific publications represent completed research individually solving specific tasks, reaching certain conclusions with a real contribution to science and practice.

From the presented table of the applicant's own results in terms of scientometric indicators, I found that his index covers 726 points (with which I agree), which is evidence that they exceed the requirements for this indicator (400) of the law of development and growth of the academic staff in the Republic of Bulgaria, as well as the regulations for its application.

2.3. Implementation activity

With conviction, I want to emphasize that this indicator of the requirements for the content of my opinion I would mark as one of the particularly strong points of the candidate. His many years of work in various companies in the field of Industrial Heat Engineering have given the exceptional opportunity to Chief Assistant Plamen Penchev to discover the real problems of the industry in the above area, to successfully solve the specific tasks and to implement them in the relevant enterprise. The built and implemented 33 industrial installations give the candidate a high rating in his implementation activity.

3. Contributions. Significance of contributions to science and practice

From the careful review of the original materials characterizing the candidate's work, including (monographic work and all scientific publications outside of it) scientific, scientific-applied and applied contributions are found. The same are very correctly attributed to those related, according to the author, to "Creation of new methods, approaches and algorithms" - 1 number scientific contribution, 7 numbers scientific and applied and 1 number of an engineering nature, as well as those related to "Obtaining and proving new facts", containing 5 numbers scientific and applied contributions and 3 numbers applied. I accept all contributions, but I want to note that they are well defined and reflect in fullness the most significant achievements of their author. However, I would like to support what has been said so far, that the candidate's education and work, the number of industry implementations and the famous team he works in have helped

him to accurately analyze his works and clearly specify his claims and the credibility of his contributions.

4. Evaluation of the candidate's personal contribution

From my review of the candidate's pedagogical and research and implementation activities, as well as from the list of his scientific output presented to me, it is clear that he works independently and in a team and has achieved good and valuable results for science and practice, due to which can reasonably be argued that he is a household name and well-known among the scientific circles of his scientific field.

5. Critical notes and recommendations

Without putting any doubt in such a well-organized and well-ordered teaching, research and implementation activity, which has a chief assistant. Plamen Penchev cannot possibly be devoid of some weaknesses and inaccuracies, which in no way affect the achievements and merits of his works.

Regarding the candidate's research work, I have no remarks and recommendations related to the setting of the tasks, their analyses, conclusions and conclusions. It is proper to point out that correct and accurate scientific research tools and methods were chosen when solving them, and the obtained results were analyzed very faithfully.

6. Personal impressions

I personally know Chief Assistant Plamen Penchev since the time when he defended his dissertation before the SSC on Energy Technologies and Machines, of which I was a member. He was distinguished by a very good knowledge of the problem solved in the work, with a good and meaningful technical statement. I have also met him at many conferences, where he reported works that were always interesting in theoretical and practical content. And last but not least, I know the candidate as a long-time associate of Prof. Ventsislav Zimparov, one of the leading names in the field of industrial heat engineering at home and abroad.

7. Conclusion

Bearing in mind the above, regarding the good and meaningful pedagogical, scientific research and especially innovative activity, the results achieved in his works and the actual contributions in them, I propose to the respected scientific jury to propose to the faculty council of the Faculty of Mechanical Engineering

and Instrumentation of TU - Gabrovo Ch. Assistant Dr. Eng. Plamen Yordanov Penchev to be elected "Associate Professor" in the field of higher education 5. Technical Sciences, professional direction 5.4 "Energy", specialty "Industrial Heat Engineering".

28.10.24

Jury member:...../signature/.....

/Prof. Dr. Eng. L. Zashkova/