



## OPINION

On the materials submitted for participation in a competition for „Associate Professor“ in the field of Higher education 6. Agricultural sciences and veterinary medicine, Professional field 6.5. Forestry, scientific specialty „Technology, mechanization and automation of the woodworking and furniture industry“ in the discipline „Wood cutting and cutting tools“

In the competition for associate professor, published in the State Gazette issue 102/01.12.2020 and on the site of the University of Forestry with the code WWI-AsP-1120-51 for the needs of the Department of „Woodworking machines“, at the Faculty of Forest Industry, as a candidate participate Chief Assistant Prof. Pavlin Biserov Vichev Ph.D., Faculty of Forestry, Department of „Woodworking machines“.

**Prepared the opinion:** Prof. Zhivko Bonev Gochev, Ph.D., Professor in a Professional field 6.5. Forestry, scientific specialty „Technology, mechanization and automation of the woodworking and furniture industry from University of Forestry – Sofia, Faculty of Forest Industry.

### **1. Brief biographical data for the candidate**

Ch. Assistant Professor Dr. Pavlin Bisserov Vichev was born on October 11, 1978 in Sofia, where he graduated from the Technical School of Communication. In 2008 he graduated as a master engineer in „Woodworking and Furniture Production“, specialization „Woodworking Machinery and Equipment“ at the Faculty of Forest Industry (FI) of the University of Forestry (UF) - Sofia.

From 2001 to 2009 he worked in the company „Consult Engineering – KIM“ Ltd., as a sales consultant and sales director. After a competition, he was accepted as a full-time assistant in the discipline „Wood cutting and cutting tools“ at the Department of Woodworking Machinery (WWM), FI of UF (2010-2016). From June 2016 until now he has held the academic position of „Chief Assistant Professor“ at the Department of WWM of FI - UF. In 2015 he obtained an educational and scientific degree „Doctor“ (Ph.D.) in the scientific specialty „Technology, mechanization and automation of the woodworking and furniture industry“.

### **2. Correspondence of the submitted documents and materials of the applicant according to the Rules of the Development of academic staff at the University of Forestry**

The documents and materials submitted by the candidate under the announced competition for the academic position of „Associate Professor“ in the Professional field 6.5. Forestry, scientific specialty „Technology, mechanization and automation of the woodworking and furniture industry“ in the discipline „Wood cutting and cutting tools“ are in full compliance with the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASRB). № 17/25.02.2020) and the Regulations for development of the academic staff of UF, including:

- European CV;
- Notarized copies of: higher education diploma, bachelor's and master's degree; diploma for Ph.D.; official note for held academic position; medical certificate; criminal record certificate; certificate of internship in the specialty; reference-self-assessment for

fulfillment of the national minimum requirements under art. 2a, para. 2, 3 and 4 for the academic position of „associate professor“; a list of publications and other scientific and applied results after taking the academic position of „chief assistant professor“; reference for known citations; documents and written materials certifying professional and creative activities and performances within the meaning of art. 67, para. 2; references for: management of defended doctoral students; prepared curricula; scientific teaching and expert activity; monograph and book; declaration under art. 313 of the Criminal Code for reliability of the submitted information.

All submitted documents are uploaded on CD.

**In conclusion, the candidate for the academic position of „Associate Professor“ has submitted all the necessary documents required under art. 60 (4) of the Regulations for development of the academic staff of UF and LDASRB.**

### **3. Assessment of the candidate's educational and pedagogical activities (work with students and PhD students)**

Ch. Assistant Professor Dr. Pavlin Vichev has been working as a lecturer at UF for more than 11 years. During this time he was assigned to train students in the following disciplines: „Wood cutting and cutting tools“ (WCCT), exercises for full-time and part-time training, specialty „Technology of wood and furniture“ (TWF), Bachelor's degree; lectures on WCCT, part-time study, specialty TWF, Bachelor's degree; lectures and exercises in the discipline "Interior Acoustics", specialty „Engineering Design (Interior and Furniture Design)“ (ED/IFD), Bachelor's degree; lectures on the subject „Metal Science“, full-time and part-time education, specialty TWF, Bachelor's degree; exercises in the discipline „Machines and tools for wood processing“, specialty „Business Management“ (BM), full-time education, Bachelor's degree. His average annual workload for the last five (5) years is 373 hours, of which 339 hours of classroom employment.

He is the supervisor of three (3) successfully defended the graduate and has prepared 30 reviews of diploma theses developed in the Department of WWM, including 18 for bachelor's degree and 12 pcs. for Master's degree. He participates in the development of curricula for the disciplines „Wood cutting and cutting tools“ (special TDM); "Interior acoustics" (special ID / IDM); "Metal Science" (special TWF); „Machines and tools for wood processing“ (special BM); „Tools and cutting processes“, specialty „Computer technology in the furniture industry“ (CTFI), Bachelor's degree; „CNC machines and technologies“ (special CTFI).

The training of students in the respective disciplines is conducted at a high professional level. With the active participation of Ch. Assistant Professor Dr. Pavlin Vichev has built a very good material and technical base equipped with modern equipment and machinery for wood cutting and cutting tools, CNC machines and technologies, hand tools and acoustics. He has also published teaching aids: a monograph („Acoustic characteristics of woodworking machines working by cutting“) and a book based on the dissertation for the award of the degree of Ph.D.

My general assessment is that Ch. Assistant Professor Vichev conducts pedagogical, teaching and organizational activities at a high level, which is due to the established authority and respect among students and teachers of the Faculty and the University. The specialization



in the Department of Woodworking at the Faculty of Woodworking at the Technical University of Zvolen, Republic of Slovakia, also contributed to his good professional training; teacher mobility under the Erasmus + program at the University of Applied Sciences Salzburg, Austria; participation in seven (7) training courses for advanced training, as well as proficiency in Russian and English.

6 official notes, certificates and feedback are presented, which confirm the candidate's participation in various forums, events, public lectures and trainings organized by the Faculty of Forest Industry.

**The pedagogical preparation of Ch. Assistant Professor Dr. Pavlin Vichev, his work and the results achieved are at a high level and fully meet the requirements for the academic position of „Associate Professor“.**

#### **4. Assessment of candidate's scientific, scientific-applied and publishing activities**

General description of the presented materials

The candidate Ch. Assistant Professor Dr. Pavlin Bisserov Vichev participates in the competition with:

- Monographs – 1 number, independent, 192 pages, 2020;
- Books - 1 number, independent, 170 pages, 2020;
- Publications - 36 numbers (articles and reports before scientific forums):
  - in foreign journals indexed in Web of Science (WoS) and Scopus - 2;
  - in Bulgarian journals indexed in WoS and Scopus - 3;
  - in foreign journals indexed outside WoS and Scopus - 6;
  - in Bulgarian journals indexed outside WoS and Scopus - 6;
  - in proceedings of international scientific forums, indexed in WoS and Scopus - 4;
  - in proceedings of international conferences not indexed in WoS and Scopus - 15.
- Projects - 13 numbers, incl. 3 numbers financed by LTU; 4 numbers financed by the Training and Experimental Forest Ranges (EFR) of the University of Forestry; 3 numbers national-educational and 3 infrastructure projects.

##### **4.1 Participation in scientific, scientific-applied and educational projects**

Ch. Assistant Professor Dr. Pavlin Vichev participates in 13 projects, of which he identifies as research the 3 with his participation, funded by LTU; 3 national-educational projects with his participation; 3 infrastructure projects, in two of which as a coordinator in the construction of training and demonstration centers at FFI, and in one as a participant and 4 projects funded by EFR of UF, in three (3) of them as a manager.

##### **4.2 Characterization of published scientific results**

❖ The monograph and 1 book presented at the competition include in an appropriate way the results of the research work of the candidate in some modern woodworking machines, their noise characteristics and the factors influencing them, including type, construction, and characteristics of cutting tools, characteristics of machined materials, cutting mode.

❖ Ch. Assistant Professor Dr. Pavlin Vichev has presented for participation in the competition, after the award of Ph.D., 36 publications in scientific journals and proceedings of international scientific conferences, most of them abroad, in the following editions:

- 2 pcs. in foreign journals referred to in WoS and Scopus, in English, of which 1 independent and 1 in which the candidate is the first co-author (5,6%);
- 3 pcs. in Bulgarian journals indexed in WoS and Scopus, in English, in which the candidate is the first co-author in 2 publications and in 1 - fourth co-author (8,3%);
- 4 pcs. in proceedings of international conferences indexed in WoS and Scopus, in English, of which 1 is the first co-author and 3 - the second co-author (11,1%);
- 5 pcs. in foreign journals indexed outside WoS and Scopus, in English, of which 1 is a second co-author; in 1 - third co-author, in 3 - fourth co-author (13,9%);
- 6 pcs. in Bulgarian journals indexed outside WoS and Scopus, of which 1 independent in English; 2 independent in Bulgarian; 1, in which he is the first co-author in Bulgarian and 2 in Bulgarian, in which he is the third co-author (16,7%);
- 2 pcs. in foreign journals not indexed in WoS and Scopus in English, of which 1 is a second co-author and 1 is a fourth co-author (5,6%);
- 14 pcs. in proceedings of international scientific conferences not indexed in WoS and Scopus, of which 2 in Bulgarian in 1, of which the candidate is the first co-author and in 1 is the fourth co-author; 4 in English, in which he is a second co-author; 1 independent in English; 2 in English, in which he is the first co-author; 2 in English, in which he is a third co-author and 3 in English, in which he is a fourth co-author (38,8%).

Published by Ch. Prof. Dr. Pavlin Vichev scientific results and data presented in Annex 2 of National Center for Information and Documentation (NCID) form a total of 366,81 points, of which 266,81 points from 36 publications, which is **66,81 points more than the minimum national requirements for holding the academic position of „Associate Professor“ in a Professional field 6.5. Forestry.**

*No plagiarism was noticed in the materials published by the candidate in the competition.*

**The scientific and scientific-applied activity of Ch. Assistant Professor Dr. Pavlin Vichev can be assessed as significant and widely reflected in our country and abroad.**

#### **4.3 Reflection of Candidate's Scientific Publications in Literature (known citations)**

In the documents presented by Ch. Assistant Professor Dr. Pavlin Vichev is attached a list of a total of 7 known citations (without self-citations) of his works by other authors and copies of evidence.

**According to the type of citations, they are divided as follows:**

- In journals indexed in WoS and Scopus - 3 citations;
- In Bulgarian journals indexed outside WoS and Scopus - 2 citations;
- In proceedings of scientific forums - 2 citations.

According to the report presented in Appendix 2 of NCID, the total number of points is 65 with a requirement of 50 points for the academic position of „Associate Professor“ in the Professional field 6.5. Forestry.

#### **4.4 Contributions to the candidate's work (scientific, scientific-applied, applied)**

In the present opinion, the object of evaluation for the candidate's contributions are 17 scientific papers out of the total of 38 presented. The candidate's contributions in the following publications are not evaluated due to my co-authorship in them: №№ Г7.1; Г7.2; Г7.5; Г7.6; Г7.9; Г8.2; Г8.8; Г8.9; Г8.10; Г8.12; Г8.13; Г8.14; Г8.15; Г8.16; Г8.17; Г8.21; Г8.23; Г8.24; Г8.25; Г8.26 and Г8.27. I am obliged to note that the listed publications contain significant results in the field of the announced competition on „Wood cutting and cutting tools“, and in which publications Ch. Assistant Professor Pavlin Vichev has a well-deserved contribution.

After analyzing the scientific works of the candidate and the scientific, scientific-applied and applied contributions declared by him, they can be accepted as:

##### **❖ Scientific contributions:**

- Development and experimental verification of a methodology on the power energy parameters of the process of longitudinal plane and profile milling of solid wood.
- Development and experimental verification of a methodology for the equivalent sound pressure level at the workplace of woodworking machine operators, depending on the cutting mode and the geometry of the cutting tools.

##### **❖ Scientific and applied contributions:**

- The influence of the construction of the milling tools on the quality of the processed surfaces of solid wood details has been established, under different kinematic conditions.
- The influence of the processed material and the cutting height on the sound pressure level as a result of the work of: a circular machine with moving mass was determined; a shaper machine with lower spindle arrangement, sawmill band saw with with cartridge and band resaw.
- Scientific and applied facts about the type and characteristics of the factors that influence the change of the vibration intensity of a shaper machine with a lower spindle position have been established.
- The sound-absorbing characteristics of white pine wood in the frequency range from 100 Hz to 2000 Hz have been determined, which affect both the sound pressure level generated during their processing by cutting and the acoustic parameters of the rooms in which the wood from this wood type is used in interior design.
- Development and application of dynamic models for the study of free non-damping, damping and forced spatial vibrations of woodworking shaper machine with lower spindle position.
- Establishing the main factors influencing the change of power and cutting force in longitudinal plan milling of solid wood parts.



- The efficiency and effective power for sharpening planer knives with abrasive tools made of polycrystalline diamond have been determined, and the specific consumption of this abrasive material has been established.

❖ Applied contributions:

- The influence of the number of V-belts on the operation of the cutting mechanism of a shaper machine with a lower position of the spindle at idle and in operation has been established.
- The natural frequencies and the natural forms of the free spatial vibrations of a shaper machine, its spindle and the rotor of the driving electric motor are determined.
- The free attenuating spatial vibrations of a lower spindle shaper machine, the rotor of the drive motor and its spindle have been established.
- The forced spatial vibrations have been established as a result of imbalance of the rotor for the drive motor of a shaper machine with a lower spindle position.

### **5. Assessment of the applicant's personal candidate**

The documents, scientific papers and evidence submitted by the candidate are very well structured and no significant gaps have been identified. Most of the results achieved in the materials submitted by the candidate in the competition are his personal work, as 7 of them are independent, and in 9 of the collective developments he is in first place. Based on this, I accept that the above-mentioned contributions to the competition for associate professor are the personal work of the candidate or have been achieved with his active participation.

### **6. Critical remarks**

In the works of the candidate and the presented creative achievements with which he participated in the competition, I did not find significant omissions such as wrong statements and approaches, incorrect methods and summaries or incomplete analysis of the results.

The contributions presented by the applicant can be summarized in a more concise and generalized form.

I allow myself to recommend to the candidate, in his future work, to publish his papers in journals with impact factor, as well as to strengthen the presentation of his scientific results in the ORCID system, which maintains a register of unique identifiers for scientists and transparent models of linking their research activities and results.

I also allow myself to recommend to Ch. Assistant Professor Pavlin Vichev to continue to work actively and purposefully as a lecturer and scientist, passing on his experience to both students and Ph.D. students under his leadership.

### **7. Personal impressions**

I know Ch. Assistant Professor Dr. Pavlin Vichev from his student years. My personal impressions expanded and took shape after he started working as an assistant in the Department of Woodworking Machinery and our joint, for 11 years, fruitful work. I dare say that during these years he established himself as a good and respected teacher and scientist. It is distinguished by its collegiality, active work, fresh ideas and proposals, both in the field of education and in science, which it always brings to an end. Ch. Assistant Professor Dr. Pavlin Vichev is very active in the organizational work of FFI and UF, which can be seen from the

official notes presented in the various forums organized with his participation. He is chairman of the „Commission on PR of FFI, internet and Facebook pages of the faculty“. His contribution to the improvement of the material and technical base of the faculty should not be missed. At his initiative and active participation, two Training and Demonstration Centers were built and equipped with the financial support of FESTOOL and BLUM.

With his many years of work as a scientist and teacher, mastering and using modern computer technology and mathematical methods, Ch. Assistant Professor Dr. Pavlin Vichev has successfully entered, as a good professional, in the scientific field in which the competition was announced.

## **8. Conclusion**

The topicality and significance of the achievements of Ch. Assistant Professor Vichev, results in the field of educational, scientific process and practical work, gives me reason to assume that all the requirements of LDASRB and the Regulations for the development of the academic staff of UF for the academic position of „Associate Professor“ are met.

**In connection with the above, I propose that Chief Assistant Prof. Pavlin Biserov Vichev Ph.D. be elected as a „Associate Professor“ in the discipline „Wood cutting and cutting tools“ in the Professional field 6.5. Forestry, scientific specialty „Technology, mechanization and automation of the woodworking and furniture industry“.**

Prepared the opinion:

/ Prof. Zhivko Gochev, Ph.D./

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