OPINION

on the materials submitted for participation in a competition for „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 „Furniture Technology"

In the competition for professor, published in the State newspaper, issue 102 / 07. 12.2021 and on the site of the University of Forestry with the code WWI-P-1121-74 for the needs of the Department of „Furniture Production" at the Faculty of Forest Industry, as a candidate participate Assoc. Prof. Dimitar Hristov Angelski Ph.D., Faculty of Forestry, Department of „Furniture Production".

Prepared the opinion: Bozhidar Georgiev Dinkov, Ph.D., Professor in a Professional Field 6.5 Forestry, from University of Forestry / retired.

1. Brief biographical data about the candidate

Assoc. Prof. Dimitar Hristov Angelski graduated from the University of Forestry, Sofia, majoring in „Mechanical Wood Technology" in 1999, Master's Degree. He started his teaching career at University of Forestry, as a part-time assistant in 2000. In 2001 he was elected as an Assistant Professor, in 2005 as a Senior Assistant Professor, and in 2008 as a Chief Assistant Professor. After successfully defending a dissertation in 2010 on "Research on the processes of plasticization and bending of solid wood parts" under the supervision of Prof. Andrey Kavalov, the candidate was awarded an educational and scientific degree "Doctor" in " Technology, mechanization and automation of the woodworking and furniture industry". In 2015, after a competition, he was awarded the scientific title of "Associate Professor". Since 2016 he has been Vice Dean of the Faculty of Forestry until now.

He speaks English and Russian well.

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 Assoc. Prof. Dimitar Angelski for the academic position of "Professor" fully comply with those required by the Rules of the Development of academic staff at the University of Forestry, namely:

- CV on European model;

- notarized copies of: diploma of higher education; diploma for the acquired educational-scientific degree "doctor"; scientific title "Associate Professor";

- medical certificate; certificate of conviction; self-assessment report for fulfillment of the minimum national requirements under art. 2a, para. 2, 3 and 4 for the academic position of "professor"; list of publications and scientifically applied results; reference to known citations, etc. All submitted documents are available in electronic format

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

Assoc. Prof. Dimitar Angelski has been a lecturer at the University of Forestry for more than 20 years, as an Assistant Professor from 2001 to 2005, Senior Assistant Professor from 2005 to 2008, Chief Assistant Professor from 2008 to 2015 and until now - Associate Professor. During this period, he gave lectures in the disciplines "Furniture Technology", "Furniture Production", "Technologies for decorative design of furniture" and "Technological design of furniture companies" and exercises in the disciplines "Materials and processes for the formation of protective and decorative coatings", "Workshop on furniture production"," Design of park and forestry facilities made of wood". For the training of the students together with Prof. Andrey Kavalov they publish the textbook "Furniture Technology" and the monograph "Non-traditional methods for smoothing wood surfaces". He is a research supervisor of 53 graduates and one doctoral student who have successfully defended their dissertations.

I believe that the candidate can conduct a very good level of pedagogical and educational activities and I appreciate his pedagogical training as fully consistent with the academic position of "professor". To achieve this level, he was undoubtedly helped by the large volume of training courses he passed - 14 in number, such as: methods and tools for e-learning; use of modern methods for teaching ICT; work with specialized software (2D and 3D modeling, etc.), etc.

4. Evaluation of the scientific, scientific-applied and publishing activity of the candidate

General description of the presented materials

The candidate Assoc. Prof. Dimitar Angelski participated in the competition with:

- Textbooks - 1;
- Publications - 50 pcs.
- Projects - 17 pcs.

From the publications 10 pcs. are habilitation reference (habilitation work); 18 pcs. are articles and reports published in scientific journals, referenced and indexed in world-famous databases of scientific information; 22 pcs. have been published in non-refereed peer-reviewed journals or in edited collective volumes.

A reference to the minimum national requirements under Art. 2a, para. 2 for the academic position "professor" (points collected from all indicators are 1122.15).

4.1 Participation in scientific, applied and educational projects

Assoc. Prof. Dimitar Angelski participates in the following scientific, applied and educational projects:

- funded by University of Forestry under Ordinance 9 - five projects, two of which are headed by Assoc. Prof. Angelski;

- national educational projects - 4;

- projects financed by the training and experienced forestry of University of Forestry - 8, including 4 pcs. from "Yundola" Training and Experimental Forest Range and 4 pcs. from Petrohan - Training and Experimental Forest Range.

4.2 Characteristics of published scientific results

From the presented publications and creative achievements of the candidate I accept for evaluation the ones published in magazines, scientific papers and collections of conferences and symposiums. Materials peer-reviewed, as well as teaching aids, research and educational projects, are not accepted for evaluation. Publications not related to the title of the announced competition in furniture technology (publications №№ 7.7, 7.10, 7.11, 7.15, 7.16 and 7.17) are also not accepted for evaluation. Other materials submitted and not accepted for evaluation will be considered in the overall evaluation of the qualities and creative achievements of the candidate.

The publications in English are presented in original and translated into Bulgarian, as are the current requirements. For the collective publications there are no protocols for the individual participation in the works of each of the authors, so it is assumed that it is equivalent.

4.3 Reflection of the candidate's scientific publications in the literature (known citations)

Assoc. Prof. Angelski has 25 citations, of which

- Citation in scientific journals, referenced and indexed in world-famous databases with scientific information - 16;
- Citation in monographs and collective volumes with scientific review - 7 pcs.;
- Cited in non-refereed journals with scientific review - 2 pcs.

According to the type of citations:

- In refereed journals and collections of scientific forums - 23 citations;
- In textbooks, monographs, dissertations, etc. - 2 citations.

4.4 Contributions in the works of the candidate (scientific, scientific-applied, applied)

Contributions to scientific papers are related to solving theoretical and practical problems in furniture production. They can be grouped in the following areas:

- plasticization and bending of furniture elements;

- facing of furniture surfaces;

- smoothing of wood surfaces in order to prepare for the formation of film protective decorative coatings;

- application of paint and varnish materials on furniture surfaces;

- other areas related to the production of furniture and wood products.

1. Scientific contributions:

- compiled and solved one-dimensional linear and non-linear models for calculation of the non-stationary temperature distribution along the thickness of solid wood parts subjected to unilateral heating for the purpose of plasticization before bending (№ 7.1 and № 8.3);

- a methodology for mathematical modeling and research of two interrelated problems has been developed: temperature distribution along the thickness of flat wooden parts subjected to unilateral heating before bending and energy consumption in this process. (№ № 7.2, 7.4, 7.6, 8.8);

- it has been proven that a guaranteed one hundred percent uniformity is achieved if for smoothing wooden surfaces in order to prepare for protective decorative coatings, lapping

devices are used, which have a flexible supporting base and provide the necessary pressure (№№ 8.11, 8.12);

- a methodology for calculation and study of the following two interrelated parameters has been developed: 1D non-stationary temperature distribution when subjected to unilateral temperature distribution when subjected to unilateral convective heating flat wooden furniture elements before varnishing and change of their average mass thermal conductivity (№№ 7.3, 7.5, 7.12, 8.5, 8.6);

- a mathematical model and numerical approach for calculating the specific energy consumption required for convective heating of flat furniture elements before their varnishing have been developed. (№№ 7.8, 8.7).

2. Scientific-applied contributions:

- using a 1D non-linear mathematical model, the change in temperature field along the thickness of wooden parts subjected to one-sided heating before their subsequent bending is calculated and the change in their average mass coefficients of thermal conductivity and thermal conductivity coefficients of their heated surface is determined. (№ 8.9);

- an approach has been developed to calculate the heat flux required to heat flat wood parts by unilateral heating in order to plasticize them. (№ 8.4);

- a regime for production of curvilinear furniture details from glued wood fiber boards on thermovacuum membrane press has been compiled (№ 8.15);

- the resistance of curved furniture units, production by gluing of wood fiber boards and internal filling of slats, using three types of glue (№ 8.18);

- developed a mode for lining bent furniture elements with PVC foil and polyurethane glue (№ 8.16);

- the influence of the grid size of the sandpaper during sanding of the surface to be lined on the adhesive strength of adhesive joints between wood fiber boards and PVC foil has been established (№ 8.17);

- it was found that the feed rate has the most significant effect on the adhesion strength and the degree of hardening of polyurethane coatings applied to veneered wood fiber boards. It has been determined that at a feed rate in the range of 1 to 3 m / min, significant radiation exposure is realized, which leads to low adhesion strength of the coatings. (№№ 8.18, 8.20);

- the primary influence of the number of applied layers on the arithmetic mean deviation of the lacquer coating profile has been proved (№ 8.13).

3. Applied-practical contributions:

- the influence of the type of adhesive on the adhesive strength of adhesive joints in the positional laminating of particle board with oak veneer has been established (№ 8.14);

- nomograms have been compiled to determine the final roughness in the uniformity of the lapped surfaces during deformation smoothing by lapping with working tools on a "rigid" and "semi-elastic" basis, by changing the mode parameters, linearly distributed pressure load and number of impacts (№ 8.12);

- it has been established that the long-term protective effect of coatings is achievable only in case of indirect effects of solar radiation on wood (№ 8.10);

- the adhesion strength of different types of paint coatings applied on spruce and oak was determined (№ 8.2);

- monograms have been compiled to determine the arithmetic mean deviation of the profile of the acrylic lacquer coating by changing the grain size of the sandpaper, the amount of primer and the number of coats applied. (№ 8.13);

- It was found that coatings with nano-based lacquer system have higher adhesion strength compared to similar conventional lacquer systems (№№ 8.21, 8.22);

- the water permeability of nano-based lacquer coatings applied on larch, merant and red oak wood was determined (№ 8.21);

- high-performance technology for making imitation woodcarvings from rigid molded polyurethane foam is proposed (№ 8.1).

5. Assessment of the candidate's personal contribution

In the materials presented at the competition, I accept that most of the results achieved are the personal work of the candidate. The above data convincingly show that the scientific, scientific-applied and applied-practical contributions mentioned in item 4 are mainly the personal work of the candidate or have been achieved under his leadership and with his active participation.

6. Critical remarks

The materials presented by Assoc. Prof. Dimitar Angelski for the competition for professor are well designed, without significant errors, with a clear statement of the goals, the results and conclusions. The scientific works of the candidate are well formed and arranged, in each of his publications there is an introduction, main content of the work, conclusion, cited literature sources. However, the citation of the same article (publication) in all contributions (scientific, scientific-applied and applied-practical) can be considered as a critical note, as the publications №№ 7.2, 7.6, 7.7, 8.8, 8.11, 8.12. I recommend the candidate to continue to work seriously and effectively in the field of education and science and to pass on his knowledge not only to students but also to more doctoral students.

7. Personal impressions

I have known Assoc. Prof. Dimitar Angelski since his student years. He is a good pedagogue, modest, correct in his relations with students and teachers. He has proven that he can solve research problems on his own, and he is a useful and active executor in collective developments. In his work he has managed to enter the scientific field in which he is habilitated and to build himself as a good pedagogue and professional in the field of furniture production.

8. Conclusion

The topicality and the positive assessment of the good pedagogical activity, the active participation in research topics and the research publications in our country and abroad meet

the requirements according to the Rules of the Development of academic staff at the University of Forestry.

In connection with the above, I propose that Assoc. Prof. Dimitar Hristov Angelski, Ph.D. be elected as a „Professor" in the discipline „Furniture Technology" in the Professional field 6.5 Forestry, scientific specialty „Technology, mechanization and automation of the woodworking and furniture industry".

Prepared the opinion:

/ Prof. Bozhidar Dinkov /

Opinion submitted to: