

R E V I E W

Authored by Prof. D.Sc. Dimitar Andonov Dichev of Technical University – Gabrovo (TUG) concerning materials submitted for participation in competition for awarding the academic position of “Associate professor” in professional field 5.13. General Engineering, scientific major “Quality Management”
Candidate: Chief assistant professor Tsvetelin Kirilov Georgiev

1. Information about the competition

The competition for awarding the academic position of “Associate professor” in TU-Gabrovo was announced in the State Gazette, issue 54 from 25.06.2024 and on the website of TU-Gabrovo to address the needs of Department “Mechanical and Precision Engineering” which is a constituent unit of the Faculty of Mechanical and Precision Engineering.

2. Information about the candidate

There is one applicant for participation in the competition – Chief assistant professor Tsvetelin Kirilov Georgiev, PhD, full time academic lecturer in the department of “Machine Tools and Manufacturing (MTM)” at the University of Ruse "Angel Kanchev". The candidate has fully complied with the normative quantitative and qualitative requirements of the Act for Academic Staff Development in Republic of Bulgaria (ASDRB) in its part “Terms and Conditions for Awarding the Academic Position of Associate Professor”.

Chief assistant professor Georgiev, PhD, holds a Master's degree in Technical Sciences with a degree in Mechanical Engineering Technologies and Management and a PhD in Material Science and Technology based on a dissertation on "Quality Assurance of Spheroidal Graphite Cast Iron".

Ts. Georgiev, PhD, began his teaching career in 2003 at the University of Ruse "Angel Kanchev" on a basic employment contract, and before that he was a PhD student at the same university. He speaks English, Russian, Romanian, Spanish, German, French and Chinese. It should be noted that the candidate for associate professor is the only Bulgarian who is currently a member of the International Confederation of Measurement Technologies (IMEKO). This membership underscores his recognition at the international level and his commitment to the development of measurement sciences in Bulgaria. Georgiev, PhD, participated in the competition with scientific materials that do not repeat the presented publications for acquiring the degree of Doctor and for occupying the academic position of Chief Assistant.

3. Overview of content and results in the submitted works

The candidate's scientific papers submitted under the competition can be classified into the following three generalized groups: habilitation, scientific publications - articles in journals and conference reports, textbook and textbook. The analysis of the materials received by Georgiev, PhD, shows that they meet and exceed in quantitative terms the relevant minimum national requirements within the meaning of the ASDRB, the Regulations for its Implementation and the Regulations of the Technical University of Gabrovo.

The monograph impresses with its precise layout and extremely well-structured content. The text is logically arranged, making it easier for the reader to follow the main concepts and topics related to quality management through the PDCA cycle. The author has skillfully integrated an analytical approach with a practical orientation, providing clear and consistent explanations of various aspects of the topic. Each chapter is elaborated and enriched with practical examples and visuals, contributing

to a deeper understanding of the issues at hand. The structure of the presentation reflects the author's overall consideration and in-depth knowledge in the field, making the monograph a valuable source for professionals in the field of quality management and for researchers looking for practice-oriented solutions.

The candidate for associate professor has a significant number of scientific publications, including 17 papers, which indicates active and continuous participation in scientific research. His publications are distributed both in Bulgaria and abroad, and 6 of them are indexed in prestigious databases such as Scopus and/or WoS. It is noteworthy here that 3 of the articles are with IF and/or SJR. These facts testify to the high quality and scientific value of his research. The presented publications of the candidate for associate professor cover a wide range of topics in the field of quality management, education and standardization. In their articles, the candidate examines both the theoretical foundations and practical applications of quality management and related international standards. Among the main highlights are approaches to quality improvement through the PDCA cycle, the importance of social responsibility for the quality of educational processes, the integration of ISO standards for quality, environment and energy, as well as the contribution of standards to the UN Sustainable Development Goals. He is actively engaged in research published in international peer-reviewed journals and symposia, which highlights the significance and international recognition of his work. In the majority of publications, Dr. Georgiev is the first author, which emphasizes his leading role in the development and coordination of research. This is indicative of his active contribution and skills in organizing the scientific process, as well as his in-depth knowledge of the topic.

The last group of materials includes a textbook and a manual for laboratory exercises. The textbook "Renewable Energy Sources and Technologies" is a collective work that provides an in-depth analysis of renewable energy sources in Romania and Bulgaria. The candidate for associate professor has developed the part dedicated to the statistical processing and presentation of measurement results, where the main statistical terms and numerical characteristics of random variables, including estimates of mean values and scattering, are exposed. The systematic approach and the clear structure of presentation reflect the high level of professionalism and the characteristic style of work of Georgiev, PhD. In the study guide with the same name, the candidate participates in the development of two practical exercises. The first is dedicated to the evaluation of solar radiation, and the second is dedicated to the study of a photovoltaic cell. Both exercises offer a practical approach to analysis and measurement in the field of renewable energy.

4. Reflection of candidate's scientific publications among the scientific community

From the reference provided by the candidate at the time of submission of the documents, it is evident that Georgiev's, PhD, publications have been noticed by the world scientific community, with a total number of citations of 37. In confirmation of this, I will note that in the world-famous databases (Web of Science and/or Scopus) 5 citations of the candidate's publications have been found. Although at the moment the candidate's publications in these databases have only 5 citations, their high scientific value and their publication in refereed and indexed journals in world-famous databases suggest a significant increase in the number of citations in the near future.

5. General description of candidate's activity

5.1. Teaching and pedagogical activity

Chief assistant professor Ts. Georgiev is an established university teacher. He began his teaching career in 2003 and went through all stages of his career development consecutively, which logically and fully deservedly should continue by awarding the academic position of Associate Professor. In support of this statement of mine, I can point out that the Department of MTM of the

University of Ruse "Angel Kanchev" has highly appreciated his teaching and pedagogical skills and has assigned him to lead lecture courses in 20 disciplines in the EQD of Bachelor and Master.

5.2. Scientific and scientific-applied activity

The scientific and applied activities of the candidate for associate professor cover important research and practical aspects in the field of quality management, standardization and renewable energy sources. His works demonstrate thoroughness, analyticalism and the ability to structure complex concepts in a clear and accessible way. The candidate's research shows a significant contribution to both theoretical foundations and practical applications in these areas, including through the use of statistical and mathematical methods for analysis and evaluation.

The candidate for associate professor has also actively participated in a number of international scientific and educational projects, including initiatives such as *TeCCh-Ed* to create a curriculum enriched with climate change technologies, *BENEFIT* in the field of precision agriculture and *ESCOLA*, aimed at training students in engineering disciplines. In addition, his participation in *the DESK* project for the preservation and transfer of knowledge in vocational education further highlights its dedication to the development of sustainable solutions in education. These projects demonstrate his commitment to global scientific and educational challenges, allowing him to increasingly contribute his knowledge and expertise to innovation and sustainable development in their respective fields.

Combining his leading role in his publications and his active participation in projects, Georgiev, PhD, has established himself as a researcher with competencies and experience that meet the modern requirements of the scientific community. His work brings significant theoretical and practical contributions that have a positive impact on the development of scientific and educational practice.

5.3. Implementation activities

The implementation activity of the candidate for Associate Professor includes participation in the introduction of a quality management system in the company "Osam" AD, Lovech, confirmed by a certificate of successfully implemented project. Although the candidate has participated in only one implementation, his scientific works contain a number of results with practical applicability, which have already found or can easily find a place in practice. This shows his desire to connect theoretical developments with real applications, which contributes to the development of management and production processes in modern industry.

6. Contributions. Significance of contributions for science and practice

Since the candidate has not classified his contributions by categories – scientific, scientific-applied and applied, I consider the contributions to be scientific-applied and applied and I arrange them according to the sequence in which they are presented in the author's reference. This arrangement provides a clear logic of the presentation and reflects the degree of applicability of the results.

A. Scientific contributions

A1. Proving by new means essential new aspects of already existing scientific fields, problems, theories, hypotheses:

- Contribution 1 to "Contributions of the Monograph" – development and visualization of the PDCA cycle for quality management.
- Contribution 6 to "Contributions of Scientific Articles" – application of SIPOC diagrams to improve internal audits in an educational organization.

A2. Creation of new classifications, methods, constructions, technologies:

- Contribution 2 to "Contributions of the Monograph" – a digital model of the interactions between ISO 9001 processes.

- Contribution 3 to "Contributions of the Monograph" – comparative analysis of ISO standards and methodology for the process approach.
- Contribution 2 to "Contributions of scientific articles" – development of a two-dimensional and 3D model of a quality management system (QMS).
- Contribution 3 to "Contributions of Scientific Articles" – a study of the impact of IWA 2 and ISO 21001 on quality in education.
- Contribution 5 to "Contributions of Scientific Articles" – a creative application of the SIPOC model from Six Sigma in educational organizations.

B. Applied Scientific Contributions

B1. Creation of new classifications, methods, constructions, technologies:

- Contribution 5 to "Contributions of the Monograph" – proving the wide applicability of the PDCA cycle.

B2. Obtaining corroboratory facts:

- Contribution 7 to "Contributions of the Monograph" – applicability of the PDCA cycle in various industries and management systems.
- Contribution 8 to the "Contributions of the Monograph" – reaffirming the importance of the PDCA cycle for sustainable development and in the context of Industry 4.0.
- Contribution 4 to "Contributions of Scientific Articles" – specific proposals for improvement of the intra-university quality system.

7. Evaluation of candidate's personal contribution

For me, the personal contribution of the candidate Ts. Georgiev, PhD, to the results obtained from the educational-pedagogical, scientific and scientific-applied activities is indisputable and significant. The presence of a serious circle of co-authors is evidence of the scale and significance of the studied problems and the ability to work in a team in important scientific fields. It should be strongly emphasized that the serious scientific results, specific applications and citations obtained are largely due to the personal efforts, ideas, expertise and organizational qualities and skills of Georgiev, PhD.

8. Critical remarks and recommendations

The above-mentioned merits of the materials presented by the candidate dominate categorically in my entirely positive assessment. Chief assistant professor Tsvetelin Georgiev has made significant contributions in the protected area, but in order to expand his impact and applicability, it is advisable to focus on several key aspects. First, it is recommended that the candidate for associate professor structure his contributions to scientific papers with a clearer classification of scientific, scientific-applied and applied results. Such an arrangement would reflect his ability to synthesize extensive and multi-layered material, facilitating the orientation of readers and reviewers and emphasizing his ability to summarize complex information. Additionally, I would recommend, directing future research towards interdisciplinary areas that expand the applicability of the developed methodologies, this would enhance the impact of achievements within the framework of quality management and standardization. At the same time, it would contribute not only to deepening his main specialty, but also to expanding his contribution to new areas of application.

9. Personal impressions

I have known the candidate for associate professor Georgiev, PhD, for more than ten years. I highly appreciate and admire his responsibility, intellect, professionalism and dedication in his work, as well as his careful and correct attitude towards colleagues.

10. Conclusion

In view of the above, **I propose to the esteemed jury that Chief assistant professor Tsvetelin Kirilov Georgiev, PhD, be awarded the position of „Associate Professor”** in:

higher education area - 5. Technical sciences,
professional field - 5.13. General Engineering,
scientific major – Quality Management

08.11.2024

Reviewer: /signature/
 /Prof. Dimitar Dichev, D.Sc./