

# REVIEW

by Prof. Eng. Georgi Todorov, BAS corr.- member  
Technical University of Sofia  
Faculty of Industrial Technology  
Department of "Production Technologies and Systems"  
of the materials submitted for participation in the contest  
for occupying the academic position "Associate Professor" in  
field of higher education 5. Technical sciences,  
by professional direction 5.13. General Engineering,  
specialty "Quality Management"

In the contest for associate professor, announced in the State Gazette, no. 54/25.06.2024 and on the website of TU-Gabrovo for the needs of the Department of "Mechanical Engineering and Instrumentation" at the Faculty of "Mechanical Engineering and Instrumentation", Dr. Tsvetelin Kirilov Georgiev, chief assistant in the Department of "Technology of Mechanical Engineering and Metal Cutting Machines", Mechanical and Technological faculty at the University of Rouse "Angel Kanchev".

## **1. Brief biographical data**

In 2001 Tsvetelin Georgiev graduated from the "Angel Kanchev" University of Ruse, majoring in "Mechanical Engineering Technologies and Management" with the professional qualification "mechanical engineer - manager". In 2013 also at the University of Ruse, he defends the ONS "doctor" with a dissertation on the topic "Quality assurance of cast iron with spheroidal form of graphite". In 2003 was appointed assistant in 2006. - for senior assistant, and in 2009 - for the main assistant department "Technology of mechanical engineering and metal cutting machines", Faculty of Mechanical Engineering at "Angel Kanchev" University of Ruse.

## **2. General description of the presented materials**

Pursuant to the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria (PPZRAS) and the Law on Higher Education and the Regulations for the Acquisition of Scientific Degrees and the Occupancy of Academic Posts at the Technical University - Gabrovo ch. assistant Dr. Tsvetelin Georgiev has submitted the following materials for participation in the contest for the academic position "associate professor":

- Monograph "Research and applications of the PDCA cycle in quality management systems" (Rousse University Academic Publishing House, Ruse, 2023);

- 6 scientific publications in publications that are referenced and indexed in world-famous databases with scientific information (6 in Scopus and 5 in Web of Science);
- 11 scientific publications in non-refereed peer-reviewed journals or in edited collective volumes;
- textbook "Renewable energy sources and technologies" (Publishing Center of Ruse University "Angel Kanchev", Ruse, 2012);
- textbook "Renewable energy sources and technologies. Exercise Guide" (Publishing Center of Ruse University "Angel Kanchev", Ruse, 2012).

The quantitative indicators of the criteria for occupying the academic position "associate professor" have been fulfilled as follows:

- national requirements: 580 points out of the required 400 points;
- minimum requirements of TU-Gabrovo: fulfillment in terms of the total number of publications (17 against the required 15) and citations (42 against the required 5), and fulfillment in terms of textbooks (1 item) and teaching aids (1 item).

### **3. Reflection of the candidate's scientific publications in the scientific community (known citations)**

The candidate's scientific research has received a wide response in the scientific community in the form of citations. The attached citation lists (all attached citations are from foreign researchers) cover:

- citations or reviews in scientific publications, referenced and indexed in world-famous databases with scientific information: 7 nos. (7 in Scopus and 5 in Web of Science);
- citations or reviews in non-refereed journals with scientific review: 35 nos.

### **4. Overview of the content and results in the presented works**

The research and scientific-applied activity of ch. assistant Dr. Eng. Tsvetelin Georgiev, presented in his publications, is mainly directed in the field of quality management. It serves as a starting point for research in the areas of: management systems, quality of higher education, metrology and metrological quality assurance, innovation management, etc. All the listed areas are also covered in the sections of the presented monograph.

The thematic area "Quality Management" includes publications that laid the foundations for the first bachelor's degree in Bulgaria "Quality Management and Metrology", created as a result of the European project for the Euro-QLIO virtual campus. The main results covered in the publications of this topic area include:

- development of a study plan, study programs and study materials on quality management and metrology;
- systematization of the requirements for the competences and training of engineers in quality, metrology and industrial logistics;
- a virtual campus model linked to a distance learning platform based on Moodle.

The Management Systems topic area includes publications related to various types of management systems. In its main part, the candidate's selection of articles covers the period from 2014, immediately before the publication of ISO 9001:2015, to 2024. when the sixth edition of ISO 9001 is being developed. Included are two plenary reports at an international scientific conference in Istanbul, Turkey (2015 and 2016), one plenary report at the National Scientific and Practical Conference "Quality - for a Better Life '2021" , Sofia, as well as two reports awarded with a diploma and a crystal prize "The Best Paper" from the Scientific Conference of Ruse University "Angel Kanchev" and the Union of Scientists – Ruse (2014 and 2017).

The results in the presented papers from the thematic area "Management Systems" include:

- a new original model of interactions between processes from ISO 9001;
- critical comparative analysis of the chronology (over a period of about 20 years) and trends in the development of management systems;
- analysis of quality management systems in the field of education and proposals for updating the implemented quality system of Ruse University "Angel Kanchev", part of Project 2017-RU-01 Improvement of the internal system for evaluating and maintaining the quality of education and of the academic staff at the University of Rouse "Angel Kanchev";
- SIPOC diagrams based on the PDCA cycle were developed and a maturity model of the quality management system in education was implemented, etc.

## **5. General characteristics of the applicant's activity**

### **5.1. Educational and pedagogical activity (work with students and doctoral students)**

The candidate Ch. assistant Dr. Tsvetelin Georgiev has over twenty years of teaching experience at Angel Kanchev University of Ruse. During this period, he led lectures and exercises in dozens of disciplines in the OCS "bachelor" (15 in the field of the contest) and "master" (18 in the field of the contest), as well as one discipline in the ONS "doctor". Among these disciplines stand out: Introduction to Quality, Design Quality Assurance, Quality Management Systems, Statistical Techniques in Quality Management Systems, Total Quality Management and Six Sigma, Management Systems Audit , Audit practice, Professional English practice, Specific management systems, etc.

He gave lectures within the Erasmus Program in Belgium, Greece, Portugal, Romania, Serbia, Turkey and France. At the University of Ruse, Erasmus taught students from Armenia, Estonia, Spain, Italy, Latvia, Romania, Turkey, Finland and France. He is a guest lecturer on the CEEPUS program in Kosovo within 5 different editions of the University of Prishtina International Summer University, UPISU.

A certificate for his educational and pedagogical activity is his award for "Wake-up call" of the Faculty of Mechanical Engineering at the "Angel Kanchev" University of Ruse, determined and awarded by the Student Council.

### **5.2. Scientific and scientific-applied activity**

Ch. Assistant Professor Dr. Tsvetelin Georgiev is the author of over 110 scientific publications, 22 of which are indexed in Scopus (with 41 citations) and 10 in Web of Science (with 18 citations).

He has delivered plenary reports at scientific conferences in Bulgaria, Turkey, Romania and the United Arab Emirates. He is a member of the scientific committees of 19 conferences and a reviewer of reports from 21 scientific conferences and journals.

Member of professional organizations in the fields of:

- quality: Association "Club 9000" (regional coordinator for Ruse), Union of Quality Specialists in Bulgaria, The American Society for Quality (ASQ);
- metrology: Union of Metrologists in Bulgaria (member of the Board), The International Metrological Confederation (IMEKO) (member of the supervisory board and of 2 technical committees);
- innovation: The International Society for Professional Innovation Management (ISPIM).

He is the winner of the Danubius Young Scientist Award 2018, presented by the Austrian Ministry of Education and Scientific Research and the Institute for the Danube Region and Central Europe (IDM).

He participated in 8 international scientific projects, 19 intra-university projects financed by the Research Fund of the University of Ruse, as well as in Project BG-RRP-2.013-0001-C01 "Research University of Ruse" (researcher R2).

In the period 2020-2024, he is the head of the Center for Transfer of Technologies and Intellectual Property at "Angel Kanchev" University of Ruse.

### **5.3. Implementation activity**

In the materials for the contest for the academic position "associate professor", ch. assistant professor Dr. Tsvetelin Georgiev presented documents for implementation in 3 organizations:

- "Vitte Automotive Bulgaria" EOOD, Ruse: 84 trainings on topics related to quality management in the automotive industry such as: Risk Analysis (FMEA), Advanced Product Quality Planning and Control Plan (APQP & Control Plan), Analysis of the Measurement System (MSA), Statistical Process Control (SPC), Produced Automotive Parts Approval Process (PPAP), Cause and Effect Diagrams (RCA) and Report 8D;
- "Osam" AD, Lovech: control plan, statistical control of the process, cause and effect diagrams, risk analysis, analysis of the financial effect of implementing a quality management system;
- Ralomex AD, Zavet: development and application in the company's production of methods for organoleptic quality control.

### **6. Contributions (scientific, scientific-applied, applied)**

The most significant part of the contributions is as a result of the monograph "Research and applications of the PDCA cycle in quality management systems" submitted for participation in the contest for the academic position of "associate professor".

#### **Scientific contributions:**

- developed a unique in type and degree of detail diagram of the connections between all processes of the QMS. It is presented as an original digital model of the interactions between ISO 9001 processes, which is based on the full set of individual diagrams developed by the author for each clause of the ISO 9001:2015 standard.
- a methodology was created for the analysis and determination of the interrelationships between the processes of the quality management system;

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

- a comparative analysis was made of the basic structure of ISO 9001:2015 and that of other ISO standards for management systems; to each clause with requirements of ISO 9001:2015, modern standards, guidelines and good practices are indicated, including guidelines for auditing according to ISO 19011:2018 and applicable statistical tools from ISO 10017:2021;
- the elements of the quality management system that must be monitored and measured are systematized;
- the practically unlimited applicability of the PDCA cycle has been proven in a number of fields (engineering, the automotive industry, education, finance, customs, post and courier services, printing, sports, etc.), management systems and "quality tools" (APQP, control plan, FMEA, MSA, SPC, PPAP, RCA, 8D, A3);
- the role of the PDCA cycle has been confirmed in numerous ISO standards for management systems;
- it has been confirmed that ISO standards for management systems contribute to the implementation of the UN Sustainable Development Goals (UN SDGs) and global well-being;
- the understanding has been improved and the meaning of the requirements, resulting commitments and expected results related to key terms such as "efficiency", "effectiveness", etc. has been clarified;
- systematized the requirements for the competences and training of quality, metrology and logistics engineers. These competences are the basis of the creation of the curriculum of the first Bachelor's degree in Bulgaria "Quality Management and Metrology".

#### **Applied Contributions:**

- conditions have been created for better awareness that the cycle "plan - do - check - act" (Plan - Do - Check - Act, PDCA) is applicable to management both at the system level and at the process and activity level;
- the impact of IWA 2 and ISO 21001 on quality management systems in the field of higher education was investigated;
- specific proposals are given for updating and supplementing the implemented internal university system for evaluating and maintaining the quality of training and academic staff at the Angel Kanchev University of Ruse;
- according to the new methodology for organizing the processes of the QMS, training was conducted for internal auditors at the "Angel Kanchev" University of Ruse;
- the "Internal Audits" process in an educational organization has been improved by applying SIPOC charts. The SIPOC model, borrowed from the Six Sigma methodology, has been applied creatively;
- a detailed list with detailed additional information and an up-to-date reference of the ISO standards is provided, supporting the professional mastery of the requirements for management systems;
- the monograph reveals new horizons of future development by providing guidelines for adapting the management systems of organizations to Industry 4.0 and to its counterpart - Quality 4.0.

#### **7. Evaluation of the candidate's personal contribution**

The candidate's personal contribution is objectively supported by the facts that the monograph and 6 of the scientific publications under the contest are by a single author ch. Assistant Dr. Tsvetelin Georgiev. In another 8 publications, he is the first author.

**8. Critical notes and recommendations**

I have no significant comments on the procedure

**9. Personal impressions**

I do not have direct personal impressions, but based on the contest materials, I would give a positive assessment of the candidate.

**10. Conclusion:**

**Based on my impressions with the presented materials for the contest, the relevance and significance of the scientific, scientific-applied and applied contributions contained in the research and the pedagogical activity carried out, I find it completely justified to propose Ch. assistant professor Dr. Tsvetelin Kirilov Georgiev to be elected as an "associate professor" in the field of higher education 5. Technical sciences, professional direction 5.13. General Engineering, majoring in Quality Management.**

**11.11.2024,**

**Sofia**

**Author: ...../signature/.....**

**/Prof. DSc. Georgi Todorov, BAS corr. Member/**