

OPINION

on the basis of Order № ПД-16-098/02.10.2020 of the Rector of the University of Shumen

by member of the scientific jury Associate Professor Dr. Eng. Penka Yordanova
Kastreva,

Subject: The materials submitted for participation in a competition for the academic position "Associate Professor" in the specialty general, higher and applied geodesy, professional direction 5.7. Architecture, civil engineering and geodesy, Higher Education District 5. Technical sciences

In the competition for associate professor, announced in the State Gazette, issue 70 of 7 August 2020 on the website of the University of Shumen (<https://www.shu.bg/razvitiie-as/konkursi/konkursi-obnarodvani-v-dv-br-63-17-07-2020-g/>) for the needs of the Department of Geodesy at the Faculty of Technical Sciences, as the only candidate is **Chief assist. Dr. Eng. Krasimira Kuneva Kirilova.**

The competition was opened after decision № ФД-02-13 of 30.06.2020 (point 6.1.1) of the Faculty Council of the Faculty of Technical Sciences and presented a reference by the Head of the Department of Geodesy Associate professor Dr. Eng. Plamen Mihaylov for a workload of 565 hours in exercises in nine disciplines, led so far by chief assist. Dr. Krasimira Kuneva Kirilova.

1. Brief biographical data of the candidate

Chief Assistant Dr. Krasimira Kuneva Kirilova graduated in 2013 from the University of Shumen, Specialty "Geodesy", Educational qualification degree Bachelor and in 2014 the same specialty, Educational qualification degree Master.

In 2018 she defended her dissertation on the topic: "Study of the methods of modelling geoid in local areas of the territory of Bulgaria", as a result of which the scientific and educational degree "Doctor" in the scientific specialty "General, higher and applied geodesy" was awarded. From 2019 to the present she holds the academic position of "Chief Assistant" in the Department of Geodesy.

Between 2008 and 2009 she worked as a construction technician and in 2013-2014 she was a junior expert in Regional directorates for national construction control Southwest region - Blagoevgrad, where she applies knowledge and skills in the field of investment design related to the Law for spatial planning.

For a short period she worked as a geodetic engineer from geodetic practice and has proven achievements with the implementation of a number of geodetic projects in the field of cadastre, geodesy and investment design.

2. General description of the materials presented

The candidate Chief Assist. Dr. Eng. Krasimira Kuneva Kirilova participates in the competition with:

- **Monograph** - 1 number issue entitled "Basic concepts of satellite gravimetry – satellite gravitational gradometry and satellite tracking"; ISBN 978-619-201-414-8, University Publishing House "Bishop Konstantin Preslavski" Shumen, 2020 (pursuant to Article 53(3));
- **Ublications** – a total of 12 pieces (from 2014, 2016, 2019 and 2020) of which are:
 - published articles in journals **7 pieces** (**2 pieces** are published in "Geodesy, Cartography, Land Management", **2 pieces** in journal SocioBrain (on-line)

with Impact Factor for 2019 = 5.985, and for **3 pieces** a document for acceptance for printing is presented in an edition licensed in EBSCO – USA);

- published reports in yearbooks of the Faculty of Technical Sciences, Shumen University – **5 pieces**.

- **Reference to the minimum national requirements – 1 pc.** (document №8)
- **Reference to the original scientific contributions – 1 pc.** (document № 9)

The candidate also presents copies of diplomas for higher education and for the awarded educational and scientific degree "Doctor", CV according to a European model and Application to the Rector for admission to the competition.

3. Evaluation of the applicant, according to the terms and conditions for taking up the academic position "Associate Professor" of the Regulations implementing the Law on The Development of Academic staff in the Republic of Bulgaria

3.1. General characteristics and educational and pedagogical activity of the applicant

Chief Assist. Dr. Eng. Krasimira Kuneva Kirilova has acquired an educational and scientific degree "Doctor" in the same specialty "General, Higher and Applied Geodesy" in 2018.

According to biographical data, the applicant started his teaching activity as an assistant from 2014 to 2018, and from October 2019 as chief assistant.

In her teaching activity she was a scientific head of graduates and reviewed student thesis and course work.

3.2. Scientific and scientific application

3.2.1 Monographic work

The presented monograph was printed and published by the University Publishing House "Bishop Konstantin Preslavski" and can be found in the National Library as such in the COBISS system. It was reviewed by two reviewers and a scientific editor.

The topic affected in the monograph is current and affects the modern development of satellite gravimetry - a new strand of physical geodesy. The monograph looks at different methods for determining earth's gravitational field through satellite gravimetry (SG) systems and the satellite-to-satellite tracking system (SST).

3.2.2 Publications

The candidate presents 12 publications published in Bulgarian journals, scientific collections and yearbooks of the university. All articles and reports are related to the specialty in which an associate professorate procedure was opened. The themes refer to gravimetric measurements, their processing and output of precise local geoid models.

The research done related to the geoid model to serve as a height reference area in geodesy is a natural and deeper continuation of the theme of the dissertation work.

Co-authorship also addresses problems related to geodetic networks for the study of geodynamic processes of the Earth's crust.

3.2.3. Compliance with minimum national requirements for the scientific field "Technical Sciences"

A report submitted reflects the applicant's achievements in the following indicators:

- Group A – Protected dissertation work – 50 points;
- Group B – Monographic work – 100 points;
- Group G - Scientific publication in unreferenced journals with scientific review or in edited collective volumes – 200 points;
- Group D - Citations in monographs and collective volumes with scientific review – 51 points.

A total of **17 citations** from Bulgarian authors of six publications by Chief Assistant Doctor Engineer Krasimira Kirilova are known. All citations are from scientific publications from Yearbooks and Collections with scientific papers of the Faculty of Technical Sciences, Shumen University.

The citations are described by the applicant in the Citation Report (document № 6).

Total points – 401 points.

3.2. 4. Contributions (document № 9)

The applicant's overall research activity referred to in the document presented № 9 cites the contributions achieved, mainly in the field of gravimetric research and modelling of the local geoid.

The scientific contributions that stand out in the publications submitted for the competition have a theoretic and methodological nature. Theoretical and methodical contributions mainly concern: 1) analysis and summaries of theoretical productions in the field of satellite gravimetry for the study of the Earth's outer gravitational field; 2) proving by new means already existing problems, theories and technologies related to the use of modern technology, such as satellite gravitational gradiometry.

The scientific and applied activity of the applicant is related to the development of local geoid models for different nature territories of Bulgaria.

I recognize the candidate's contributions.

3.2.5 Additional indicators applicable to the area concerned (document № 7.1)

- **related to learning activities** – according to the document, the applicant leads lecture courses for the specialty of Geodesy, regular training in: "Cadastré" "Territorial Planning", "Cadastral Information Systems", "Urbanized Territories Device", "Applied Geodesy"; Guided exercises and practices on: "CAD Systems", "Training practice in geodesy", "Basics of cartography", "Geodesy", "Geodetic networks", "Cadastré", "Physical geodesy and gravimetry", "Geodesy modeling", "Specialized cadastré", "Vertical planning" and "Regulations" and working with students in the development of course projects;
- **research-related activities:** Member of the Chamber of Engineers in the Investment Design (Certificate of Full Design Capacity, Part Geodesy Registration № 14059)
- **participation in scientific projects**

In document № 7.1, the applicant states his participation in an internal research project on the topic: "Study the application of remote methods and technologies in the mapping of spatial objects" as a member of the collective.

4. Critical Notes

The candidate to step up the work of publishing scientific works in publications that are referenced and indexed in world-renowned databases of scientific information. To strengthen its participation in serious scientific for a at national and international level.

5. Personal impressions

Chief Assistant Doctor Engineer Krasimira Kuneva Kirilova stands out as an aspiring colleague in the field of science and educator, whose name is known among the scientific circles at the university where she works. At the national level it is recognizable with the publications of the scientific journal " Geodesy, Cartography, Land Management ".

I believe that the professional and scientific achievements of Chief Assistant Doctor Engineer Krasimira Kuneva Kirilova are at a sufficient level to take up the scientific position "Associate Professor" in the Department of Geodesy of shumen University.

6. Conclusion:

In accordance with the terms and conditions for the appointment of the academic position "Associate Professor" referred to in Articles 53(1) to 4 and of the Rules of Application of the Law on the Development of Academic Staff in the Republic of Bulgaria and in accordance with the results of the references referred to in Article 54(1). **I have identified the following:**

1. required materials are available;
2. the monograph has been peer-reviewed and published;
3. minimum national requirements for associate professor were achieved by a total of 401 points;
4. In accordance with the requirements of Article 53(5), plagiarism has been checked with Advego Plagiatus software 1.3.1.7* in scientific papers and has not been established

In view of the above, I propose that Chief Assistant Dr. Eng. Krasimira Kuneva Kirilova be selected as an "associate professor" of General, higher and applied geodesy, in professional field 5.7 Architecture, civil engineering and geodesy, District of higher education 5. Technical sciences.

9.11.2020

Member of the jury:

