UNIVERSITY OF ARCHITECTURE CIVIL ENGINEERING AND GEODESY

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REVIEW

By Prof. Dr. Eng. Plamen Bogdanov Maldzhanski, Faculty of Geodesy of the University of Architecture, Civil Engineering and Geodesy (UACEG), within the Department of 'Photogrammetry and Cartography'. This review pertains to the materials submitted for the academic position of "Professor" in the field of higher education, specifically 5. Technical sciences, within the professional field 5.7. Architecture, civil engendering and geodesy. The scientific specialty under review is 'Photogrammetry and remote sensing', in the discipline 'Photogrammetry and remote sensing' to meet the needs of 'Forestry and management' department at the Faculty of Forestry, University of Forestry. The position was announced by the Academic Council of the University of Forestry's decision No. 42/22Nov2023, publisged in the state newspaper No. 102/08Dec2023. The application period was two months, as advised on University of Forestry's website on 30Nov2023, under the procedure code FOR- P-1123-111. Associate Professor Maria Tsankova Asenova from the department of 'Forestry and Management' has participated in the contest. The review was prepared in compliance with the requirements of the Law for the Development of the Academic Staff in Bulgaria and the implementing regulations, as well as the University of Forestry Rector's order No. ZPS-23/ 23Jan2024, concerning the appointment of a scientific jury. The decisions of the jury were made at its initial meeting on 14Feb2024.

1. Concise biographical information

Assoc. Dr. Eng. Maria Tsankova Asenova completed her studies at UACEG in 1987, specializing in 'Geodesy, Photogrammetry, and Cartography' and received her diploma with the series АЯ №012455. In 2015, she successfully defended her doctoral dissertation titled 'Engancement of database architecture and spatial analysis within a specialized Geographic Information Systems (GIS) for forests". Since 1987, she has been emplyed at the University of Forestry in Sofia, progressing through various roles: from 1987 to 1989 as a research engineer; from 1989 to 1993 as an assistant; from 1993 to 1997 as a senior assistant; from 1997 to 2017 as a chief assistant; and from 2017 to the present as an associate professor. Between 1991 and 1995, she served as a specialist surveyor at Economic Directorate 'Mulet'. From 2020 to 2024, she is the Deputy. Chairman of the General Assembly of the Faculty of Forestry, and since 2022, she leads the "Forestry and Management" department within the Faculty of Forestry at the University of Forestry. She is proficient in both Russian and English, and possesses a brad range of skills in geodesy, photogrammetry, remote sensing, cartography, and GIS. She is a member of the Union of Surveyors and Land Planners in Bulgaria at the Fund of Scientific and Technical Unions, and the Bulgarian Cartographic Association, and the Bulgarian Geographical Society. she holds a certificate authorizing her to conduct cadastral activities, serves as an expert at the Forest Management Bureau of the Scientific Research Union at the University of Forestry, and has licenses for technical activities in compliance with the Law on Restitution of Ownership of Forests and Lands from the Forest Fund, as well as for implementing the Law on the Ownership and Use of Agricultural Lands.

2. Overview of the provided materials

Assoc. Prof. Dr. Eng. Maria Tsankova Asenova entered the contest with a diverse portfolio that includes: one *monograph (1 piece)*; a *chapter in a collective monograph* - **1 piece.**; a *published book derived from a defended PhD dissertation* - **1 piece.**; *educational resources* - **2 items**; a *textbook* - **1 item**; *schilary articles* - **33 issues**; *references in other works* - **41 items**; participation in *scientific and applied research projects* - **10 items.**; *contributions as an expert* - **4 items.**; *development of academic programs* - **3 items**; various *certificates and diplomas* - **11 items**; *mentorship of students* - **16 individual**;

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Regarding the scholarly articles in peer-reviewed journals: 10 have been featured in in SCOPUS and Web of Seines, 1 in Silva Balkanica and 4 in the 'Forest Science' journal. SCOPUS has indexed 8 of the citations.

In line with the stipulation of the Regulations for the execution of the Law for the Development of the Academic Staff in Bulgaria and the established scientometric criteria for field 5.7. Architecture, Civil Engineering and Geodesy, the materials submitted by the candidate for the contest are organized according to the recognized metrics as follows:

A set of measures	Professor	Necessary	Implemented
A	PhD research: 'Enhancement of database architecture and spatial analysis within a specialized GIS for forests'.	50	**50**
B	Monograph "Geoinformational approaches and solutions in the application of GIS for forest territories"	100	**100**
G	6.Published book based on the defended dissertation work for the attainment of the educational and scientific degree "Doctor": 6.1.*Asenova, M.* 2023. Enhancement of database architecture and spatial analysis within a specialized GIS for forests. Sofia, Publisher: Intel Entrans. ISBN: 978-619-7703-28-3, 212 c., signed copies (8 pages/1800 marks/page): 26.5	30	**30**
	7.1.*Asenova, M.* 2018. Evaluation and mapping of forest fire hazards using GIS: A case study from Bulgaria. Presented at the 7th International Conference on Cartography & GIS, June 18-23, 2018, Sozopol, Bulgaria, Proceedings, Vol .2, № 8, p. 978-986. ISSN: 1314-0604. 7.2.*Asenova, M.* 2018. A GIS-based analysis of tree health issues utilizing UAV imagery and satellite data. Proceeding of the 18th International Multidisciplinary Scientific GeoConference & EXPO 2018 (SGEM 2018), June 30 – July 9, 2018, Albena Resort, Bulgaria, Vol. 19, Issue 3.2, p. 813- 820. ISBN 978-619-7408-43-0, ISSN 1314-2704, DOI 10.5593/SGEM2018/3.2. 7.3. Tashev, A., ***M. Asenova,*** P. Pavlov. 2018. Recent findings on plant species of conservation importance in the Chepan Mountain (Western Stara Planina, Bulgaria). Proceedings of the 18th International Multidisciplinary Scientific GeoConference & EXPO - SGEM 2018, held from June 30 to July 9, 2018, at Albena Resort, Bulgaria, Vol. 18, Issue 5.2, p. 675–682. ISBN 978-619-7408-47-8, ISSN 1314-2704, DOI 10.5593/SGEM2018/5.2. 7.4. *Asenova, M.* 2019. Developing a GIS database for Viticulture in Bulgaria. Proceedings of the 19th International Multidisciplinary Scientific GeoConference & EXPO - SGEM 2019, held from June 28 to July 7, 2019, at Albena Resort, Bulgaria, Vol. 19, Issue 2.2, p. 799-806. ISBN 978-619-7408-80-5, ISSN 1314-2704, DOI 10.5593/SGEM2019/2.2. 7.5. Kovacheva, S., ***M. Asenova,*** I. Ivanov. 2019. Exploring Desigh Possibilities for a Distribution Network in the Alternative Tourism	200	**401.08**

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Supply Chain. Proceedings of the 19th International Multidisciplinary Scientific GeoConference & EXPO - SGEM 2019, held from June 28 to July 7, 2019, at Albena Resort, Bulgaria, Vol. 19, Issue 2.2, p. 939-945. ISBN 978-619-7408-80-5, ISSN 1314-2704, DOI 10.5593/SGEM2019/2.2.

7.6. ***Asenova, M.,*** Ivanova, Y, Karakia, V. (2019). Employing a GIS-based method to update Sofia's ancient tree database. Spatial Forest Science, Sofia, Volume 1, 2019, pages 27-40. ISSN 0861-007X.

7.7. ***Asenova, M.,*** M. Panayotov, N. Tsvetanov. 2019. Assessing the structural characteristics of ancient beech and mixed fir-spruce-beech woodlands through orthoimage, satellite observations, and topographical data. Sylva Balcanica, Sofia, № 20(3)'2019, pp. 5-17. ISSN 1311-8706. HI 8 SJR 0.110 2018.

7.8. ***Asenova, M.,*** M. Danailova. 2020. Utilization of NDVI indices to examine forests impacted by biotic elements through the use of UAV data. In Proceedings of the 8th International Conference on Cartography & GIS, 2020, Bulgaria, Vol. 1, p. 717-726. ISSN: 1314-0604.

7.9. **Asenova, M.** 2021. Tree health analysis and mapping of forest areas using specialized GIS data. 21-st International Multidisciplinary Scientific Geoconference SGEM 2021, August 14-22 2021, Albena Resort, Bulgaria, Conference Proceedings, ISBN: ISSUE 2.1 HARD COPY, pp. 803-810, ISBN 978-619-7603-22-4, ISSUE 2.1 DVD ISBN 978-619-7603-23-1. https://doi.org/10.5593/sgem2021/2.1/s11.94.

7.10. ***Асенова, М.,*** С. Ангелов. 2022. Изследване на повреди от абиотични фактори на горски насаждения чрез дистанционни средства. Наука за гората, Бр. 2/2022, с. 85-104. ISSN: 0861-007X.

7.11. ***Asenova, M.,*** M. Danailova. 2022. Automated mapping of forest tree crowns via UAV imagery. 8-th International Conference on Cartography & GIS, 2022, Bulgaria, Proceedings, Vol. 2, p. 181-190. ISSN: 1314-0604. In: Bandrova, Temenoujka & Marinova, Silvia & Konečný, Milan (Eds). (2022). 8ICCGIS Proceedings Vol. 2, ISSN: 1314-0604, pp. 51-56.

7.12. ***Asenova, M.,*** G. Donchev, E. Evangelov. 2022. Personal laser scanning for 3D mapping and forest inventory. 22-st International Multidisciplinary Scientific Geoconference SGEM 2022, July 2-11.07.2022, Albena Resort, Bulgaria, Conference Proceedings, Vol. 22, Issue 2.1, Book 2, pp. 347-354, ISBN 978-619-7603-40-8, ISSN 1314-2704, DOI Issue 10.5593/sgem2022/2.1, DOI 10.5593/sgem2022/2.1/s10.41.

7.13. ***Асенова, М.,*** Й. Иванов, Б. Григорова-Пешева, К. Петрова, П. Павлов. 2023. Методичен подход за избор на териториални единици и извършване на теренни измервания за изследване на системата „почва – почвени микроорганизми – дървесен състав". Наука за гората. Бр. 1/2023, с. 87-103. ISSN: 0861-007X.

7.14. **Asenova, M.,** M. Danailova. 2023. Forestry spatial data in Bulgaria - implementation as part of European information infrastructure. 23-rd International Multidisciplinary Scientific Geoconference SGEM 2023, July 1-10.07.2023, Albena Resort, Bulgaria, Conference Proceedings,

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1314-2704. DOI Issue 10.5593/sgem2023/, DOI 10.5593/sgem2023//s. 7.15. ***Асенова, М.,*** С. Стоилов. 2023. Технологията на ГИС при транспортно разработване на горски територии. София: Наука за гората, Год. 1, Суплемент 1, 2023, 91 с. ISSN: 0861-007X.		
8.1. ***Асенова, М.*** 2017. Изследване на състоянието на горски насаждения по цифрови изображения от безпилотни летателни апарати. Сп. „Управление и устойчиво развитие“, Година 19, Volume 67, София, ЛТУ. Кн. 6 /2017, с. 106-113. ISSN 1311-4506. 8.2. ***Асенова, М.,*** М. Савова, В. Тодоров, Й. Иванов, Д. Пеев. 2017. Проектиране на пространствена база данни на дървесната растителност на територията на Лесотехнически университет в София. Сп. „Управление и устойчиво развитие“, Година 19, Volume 67, София, ЛТУ. Кн. 6 /2017, с. 114-125. ISSN 1311-4506. 8.3. ***Асенова, М.,*** Г. Дончев. 2017. Контрол на изпълнението на горскостопанските дейности чрез мобилни ГИС приложения. XV международна научна конференция „Мениджмънт и инженеринг'17", 25-28 юни 2017 г., Созопол, ТУ, Сборник доклади, Том I., с. 111-121. ISSN 1314-6327. 8.4. ***Асенова, М.,*** С. Ковачева, 2017. Съвременни технологии за структуриране на разпределителни системи. XV международна научна конференция „Мениджмънт и инженеринг'17", 25-28 юни 2017 г., Созопол, ТУ, Сборник доклади, Том 1, с. 363-372. ISSN 1310-3946 ISSN 1314-6327. ***8.5. Asenova, M.***, S. Stoilov, G. Donchev. 2017. Mobile GIS Technologies for Management of Forest Roads and Control of Timber Transportation, International Scientific Conference on Aeronautics, Automotive and Railway Engineering and Technologies „BulTrans-2017“, September 11-13 2017, Sozopol, Bulgaria, ‚Proceedings, p. 111-114. ISNN1313-955X. 8.6. ***Асенова, М.*** 2018. Създаване на специализирана база данни на ГИС за опазване на горските територии от пожари. Сп. „Управление и устойчиво развитие“, Година 20, Volume 73, София, ЛТУ. Кн. 6/2018, с. 85-91. ISSN 1311-4506. 8.7. ***Асенова, М.*** 2018. Контрол на данните и откриване на несъответствия в цифровите модели на земеделски и горски територии чрез ГИС. XVI международна научна конференция „Мениджмънт и инженеринг'18", 24-27 юни 2018 г., Созопол, ТУ, Сборник доклади, ТОМ 2, 720-729. ISSN 1314-6327. 8.8. ***Асенова, М.,*** Г. Дончев. 2019. Приложения на технологията LiDAR за изследване на горски територии. Сп. „Управление и устойчиво развитие“, Година 21, Volume 79, София, ЛТУ. Кн. 6 /2019, с. 141-148. ISSN 1311-4506. 8.9. ***Асенова, М.*** 2019. Предимства на ГИС при създаването на отчети за статистически цели в горското стопанство. XVII международна научна конференция „Мениджмънт и инженеринг'19", 24-27 юни 2019 г., Созопол, ТУ, Сборник доклади, CD Том 2, с. 613-622. ISSN 1314-6327.		

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8.10. ***Асенова, М.*** 2020. Картографиране на здравословното състояние на горите по данни, интегрирани в среда на ГИС. Сп. „Управление и устойчиво развитие“, Година 22, Volume 85, София, ЛТУ. Кн. 6/2020, с. ISSN: 1311-4506. https://jmsd.bg/files/articles/85/85_M_Asenova_paper_2020.pdf

8.11. Dobrinkova, N., ***M. Asenova***. 2020. Framework for wildfire danger prediction system. 1-st International conference on Environmental protection and disaster RISKs, 29 September - 1 October 2020. Az-buki National Publishing House, Sofia, Proceedings. Part 1, 259-270. https://doi.org/10.48365/envr-2020.1.24

8.12. ***Асенова, М.*** 2020. Интегриране на данни от свободно достъпни ГИС платформи при управлението и контрола на горски територии. 18-та Международна научна конференция „Мениджмънт и инженеринг '20“, 13-16 септември 2020, Созопол, България, Сборник доклади, CD Том 1, с. 186-193. ISSN 1314-6327.

8.13. ***Asenova, M.*** 2020. Examination of the conditions of forest shelterbelts in Northeastern Bulgaria using GIS. XI International Agriculture Symposium „AGROSYM 2020“, Jahorina, October 8-11 2020, Bosnia and Herzegovina, Book of Proceedings, p. 1049-1054. ISBN 978-99976-787-5-1 COBISS.RS-ID 129999105.

8.14. Стоенчев, Н., ***М. Асенова***, Е. Стефанова. 2021. Някои възможности за използване на географски информационни системи за анализ на инвестиционната привлекателност на територията при локализация на мебелни предприятия в България. Сп. „Управление и устойчиво развитие“, Година 23, Volume 90, София, ЛТУ. Кн. 5/2021, с. ISSN: 1311-4506. https://jmsd.bg/files/articles/90/90-01_N_Stoenchev_M_Asenova_E_Stefanova_paper_2021.pdf

8.15. ***Асенова, М.*** 2021. Приложение на ГИС в технология за управление и опазване на горски територии, засегнати от природни нарушения. XIX-та Международна научна конференция „Мениджмънт и инженеринг '21“, 23-25 юни 2021, Созопол, България, Сборник доклади, CD, с. 65-71. ISSN 1314-6327.

8.16. ***Асенова, М.***, Н. Добринкова. 2021. Предизвикателства за обучението по ГИС по време на световната здравна криза. Сп. „Геодезия, Картография, Земеустройство“, СГЗБ-ФНТС, год. LXI, София, Бр. 5-6 /2021, с. 31 - 36. Геодезия, Картография, Земеустройство 5-6'2021 Геодезия, Картография, Земеустройство 5-6'2021 (joomag.com). ISSN 0324-1610.

8.17. ***Асенова, М.*** 2022. Обучението по Фотограметрия и Дистанционни методи в Лесотехнически университет. Сп. „Геодезия, картография и земеустройство“, СГЗБ-ФНТС, год. LXI, София, Бр. 1-2 /2022, с. 33 -38. ISSN 0324-1610.

8.18. ***Асенова, М.,*** С. Ангелов. 2022. Изследване на природни нарушения в горски територии чрез ГИС и безпилотни летателни системи. Сп. „Геодезия, картография и земеустройство“, СГЗБ-ФНТС, год. LXI, София, Бр. 3-4/2022, с. 14-24. ISSN 0324-1610.

9. Published chapter in collective monograph

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	M., Mikolas, M., Vostarek, O., Dushatko, M., Knir, T., Yanda, P., Kozak, D., Pavlin, Ya.2023. Beech forests in the old age phase - structure and natural dynamics, Forestry University, Sofia, ISBN: 978-619-7703-49-8, 130, Author cars (8 p./1800 chars./p.): Chapter 1: ***Asenova, M.*** and Donchev, G. 2023. Determining parameters of forests in old age phase using remote sensing methods and GIS. In: Panayotov et al., Beech forests in the old age phase - structure and natural dynamics, Forestry University, Sofia, pp. 10-47.		
D	12. Citations or reviews in scientific publications, referenced and indexed in world-renowned databases of scientific information or in monographs and collective volumes:	100	**169**
	13. Citations in peer-reviewed monographs and collective volumes:		
	14. Citations or reviews in non-refereed peer-reviewed journals:		
E	18.1.2017 BG05M2OP001-2.009-0034,договор: BG05M2OP001-2.009-0034 18.2.2018 Проект на НИС-ЛТУ, договор: Б-24/2018 г. 18.3. 2019-2020, договор: НИС-1007/2019 г. 18.4. 2019-2020, договор: НИС-Б-1005/27.03.2019 г. 18.5. 2020. договор: НИС - 1077/2020 г. 18.6. 2021-2024, contract:№ КП-06-Н56/7 от 2021 г. и Contract under НИС-Ф-1180/2021. 18.7. 2023 НИС-Б-1291/2023 г. 18.8. 2023 № НИС-Б-1292/2023 г.	150	**158.33**
	19.1. 2023-2024 FirEUrusk "FIREURISK - DEVELOPING A HOLISTIC, RISK-WISE STRATEGY FOR EUROPEAN WILDFIRE MANAGEMENT" with an acronym "FirEUrisk", financed by a European program „Horizon 2020" and approved by invitation: H2020-LC-CLA-2018-2019-2020/ H2020-LC-CLA-2020-2, with contract no: № 101003890. Head Assoc. Dr. Nina Dobrinkova. Position held: Assoc. Dr. Maria Asenova - external member of the project in ИИКТ-БАН, according to order № 285/20.10.2023 г.		
	20.1. 2019-2020 Project of NIS-LTU. Contract: NIS-B-1006/2019. "Determining parameters of old-growth forests and natural disturbances in them using modern GIS and remote sensing methods". Beneficiary: LTU		
	23.1. Tepeliev, Yu., R. Koleva, ***M. Asenova***. 2018. Photogrammetry and Remote Methods Textbook. Sofia: Publishing house at LTU. 279 pp. ISBN 978-954-332-166-7.		

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	24.1. *Asenova, M.* 2023. Guide to working with MapInfo Professional when developing a GIS project. Bulgarian, first edition, Author's cars (8 pages/1800 notes/page): 7. ISBN: 978-619-7703-31-3. 24.2. *Asenova, M.,* R. Koleva, M. Danailova, S. Stoyanova. 2023. Manual of Surveying Exercises. Sofia: Publishing house at LTU. 165 pp. ISBN: Author's Cars (8 p./1800 pts./p.): (in press).		
	Общо	**600**	**908.41**

Publications can be categorized in the following manner:

By type:
Reports – 19 pieces.
[7.1,7.2,7.3,7.4,7.5,7.8,7.9,7.11,7.12,7.14,8.3,8.4,8.5,8.7,8.9,8.11,8.12,8.13,8.15]
Articles – 14 items [7.6,7.7,7.10,7.13,7.15,8.1,8.2,8.6,8.8,8.10,8.14,8.16,8.17,8.18]

By importance:
- Publications in journals with an Impact factor – **15 issues**

[7.1,7.2,7.3,7.4,7.5,7.6,7.7,7.8,7.9,7.10,7.11,7.12,7.13,7.14,7.15];

By place of publication:
- Articles in refereed international journals – 5 [7.6,7.7,7.10,7.13,7.15];
- Reports in proceedings of international scientific conferences abroad – 10 issues [7.1,7.2,7.3,7.4,7.5,7.8,7.9,7.11,7.12,7.14];
- Articles in national journals – 9 issues [8.1,8.2,8.6,8.8,8.10,8.14,8.16,8.17,8.18];
- Reports in proceedings of international scientific conferences in Bulgaria – 7 issues [8.1,8.2, 8.3, 8.4,8.5,8.6,8.9];

According to the language in which they are written:
- In English – 14 issues [7.1,7.2,7.3,7.4,7.5.7.7,7.8,7.9,7.11,7.12,7.14,8.5,8.11,8.13];
- In Bulgarian – 19 issues;

[7.6,7.10,7.13,7.15,8.1,8.2,8.3,8.4,8.6,8.7,8.8,8.9,8.10,8.12,8.14,8.15,8.16,8.17,8.18].

By the number of co-authors:
- Independent - 13 items [7.1,7.2,7.4,7.9,8.1,8.6,8.7,8.9,8.10, 8.12, 8.13,8.15,8.17];
- With one co-author - 11 issues [7.8,7.10,7.11,7.14,7.15,8.3,8.4,8.8,8.11,8.16,8.18];
- With two co-authors - 7 issues [7.3,7.5,7.6,7.7,7.12,8.5,8.14];
- With three or more co-authors – 2 issues [7.13,8.2].

3. Reflection of the candidate's scientific publications in the literature (known citations)
Total - 41 citations;
- From Bulgarian authors - 28 citations;
- From foreign authors – 13 citations.

Eight of the citations are reflected in SCOPUS

4. General Characteristics of the Applicant's Activity

4.1. Educational and Pedagogical Activity (Work with Students and Doctoral Candidates)

Associate Professor Asenova has led and continues to lead lectures and practical sessions

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in the following disciplines: geodesy, photogrammetry and remote sensing, GIS, remote mapping methods, geodesy and grading, specialized GIS applications, and GIS and remote sensing for full-time Bachelor's and Master's degree students at the Faculty of Forestry, Faculty of Agronomy and the Faculty of Ecology and Landscape Architecture of the University of Forestry. She has supervised educational practices in disciplines such as forest management, photogrammetry and remote sensing, technology and mechanization of logging, forest roads, organization and planning of forestry, geodesy, botany, forest management, photogrammetry and remote sensing and general forestry, as well as forest taxation. She has prepared and successfully guided 16 graduate students who defended their diploma theses. Additionally, two doctoral candidates have been and are currently being trained under her supervision in the learning process.

4.2. Scientific and Scientifically Applied Activity

The contributions in this direction include the preparation and publication as an author, alongside two other co-authors, of a textbook titled 'Photogrammetry and Remote Sensing', two teaching aids ('Guide for Practical Sessions in Geodesy' with three co-authors and a self-published 'Guide for Working with MapInfo Professional'). She has developed six curricula and updated three. The candidate participated in ten scientific and scientifically-applied projects, nine of which are national (serving as the head of one) and one international.

4.3. Implementation Activity

As such, it can be noted that Associate Professor Asenova has been included in a scientific research team for the project "FirEURrisk", which is financed under the European program 'Horizon 2020'. She has also participated as an expert at "Geoservice" Ltd. and she has prepared GIS for the Educational and Experimental forestry 'Petrohan'. Her connection with practice allows her to form and find appropriate solutions to a number of practical tasks.

4.4. Contributions (scientific, applied science, applied)

Basic scientific contributions can be classified as applied science. These contributions encompass areas such as: photogrammetry and remote sensing methods (FDM) with forestry applications, and the use of geographic information systems (GIS) for forest management and their broader applications. Research in the realm of photogrammetry and remote sensing, as documented in various publications: (G7.1, G7.2, G7.7, G7.8, G7.9, G7.10, G7.11, G7.12, G8.1, G8.8, G8.10, G8.12, G9.1) includes developing methods for analyzing mature forests through automated image classification; employing terrestrial laser scanning for forest inventories; integrating photogrammetric and remote sensing techniques for to extract forest structural data within a GIS framework; utilizing vegetation for evaluating damage in forest plantations; and creating specialized and thematic forest maps using GIS technology, among others.

Within the realm of GIS applications for forestry: (B3.1, G7.14, G7.15, G8.3, G8.5, G8.6, G8.7, G8.9, G8.12, G8.13, G8.15, G8.18) the most significant contributions include: devising a method for data extraction within a GIS framework for national statistics at the level of territorial units; establishing a foundation for enhanced objectivity in the oversight activity of forest personnel and organizations through the use of GIS; implementing computerized analysis for monitoring timeber harvesting and managing the forest road infrastructure; constructing a GIS database structure for forest fire prevention and for interactive mapping on mobile devices; and developing automated queries for spatial data analysis to pinpoint potential illegal activities and areas at risk of or impacted by landslides and floods.

In the field of GIS applications and other related areas (7.3, 7.4, 7.6, 7.13, 8.2, 8.13), the main contributions can be summarized as follows: the creation of a GIS-based approach for

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updating the database of ancient trees in Sofia; the formulation of principles for designing a database in GIS for the purposes of mapping, providing a dendrological description and passporting of urban tree vegetation, as well asassessing its condition.

5. Evaluation of the candidate's personal contribution.

I value the candidate's personal contributions as substantial in the fields of: photogrammetry, remote sensing methods, GIS and their application in the fields of forestry and relatedareas. The candidate's good knowledge of theoretical issues from photogrammetry, remote sensing, GIS and geodesy, as well as knowledge of specific problems related to forest assessments, has allowed them to create theoretical models and program solutions in the subject area and to successfully apply them in the educational process and geodetic practice.

6. Critical notes

In essence, I have no critical remarks about the candidate's publication activity. I agree with the preferences and contributions, as well as the conclusions drawn from them. I can recommend a more active engagement with the doctoral students, with the aim of ensuring their successful completion of their doctoral studies.

7. Personal impressions

I have known Associate Professor Asenova since my student years at the UACEG. I was present during the selection and the competition for the possition of associate professor. She is an established researcher with a critical attitude towards the quality of the educational process and a demanding teacher with rich scientific potential. I believe that she endeavors to impart these qualities to her students.

8. Conclusion:

Bearing in mind the above and the fact that with regard to the scientometric indicators, according to the Regulations for the implementation of the Law for the Development of Academic Staff in Bulgaria, Assoc. Prof. Dr. Eng. Maria Tsankova Asenova meets the necessary requirements for occupying the position of "Professor", I propose that she be elected as "Professor" in the professional field 5.7 Architecture, Civil engineering and Geodesy, with the scientific specialty "Photogrammetry and Remote Sensing", in the discipline "Photogrammetry and Remote Sensing" for the needs of the department "Forestry and Management", Faculty of Forestry of the University of Forestry.

04.04.2024 г.

Reviewer:
/Prof. Pl. Maldzhanski/