

## Chief Assist. Nataliya Stankova, PhD

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Nataliya Stankova, PhD, Chief Assistant Professor, graduated from the Language High School "Acad. Lyudmil Stoyanov" (Blagoevgrad) in 2004. In 2009, she graduated her bachelor's degree in Ecology and Environmental Protection at Sofia University "St. Kliment Ohridski" and master's degree in Ecology and Protection of the Environment at Sofia University "St. Kliment Ohridski" in 2010.

She defended a thesis at Space Research and Technology Institute – Bulgarian Academy of Sciences in 2017 with the scientific specialty "Remote studies of the Earth and planets" on the topic "Using remote aerospace methods and data to study the consequences and state of forest ecosystems after a fire".

She started working as an Ecologist in 2012 in the Aerospace Information Department of Space Research and Technologies Institute - Bulgarian Academy of Sciences, from 2015 until 2017 she worked as an Assistant, and from 2017 until now she works as an Assistant Professor.

Her main research interests are in the field of ecological monitoring, monitoring of natural disasters, monitoring of dynamics and post-fire recovery processes of forest vegetation using remote sensing methods, interpretation of satellite images and GIS.

Author and co-author of 28 scientific publications with 52 citations. She presented scientific results at 18 national and international conferences. She worked on 10 scientific and scientific-applied projects.

She is a member of EARSel.

## Participation in scientific and scientific-applied projects

2. "Information Complex for Aerospace Monitoring of the Environment" (ICASME) – Contract BG161PO003-1.2.04-0053-C0001 under OP „Development of the Competitiveness of the Bulgarian Economy 2007-2013”, procedure BG161PO003-1.2.04 „Development of Applied Studies in Bulgarian Research Organizations”
2. "Joint research with aim of practical application for preservation of the natural resources and environment in the border region between the municipalities Pehchevo and Simitli" 2007SV16IP O 0007-2011-2-106, funded by the "Cross-border Cooperation Bulgaria - Macedonia 2007 - 2013"
3. "Increasing the qualification of PhD students and young scientists in the field of monitoring of natural disasters and phenomena associated with space weather", Contract BG 051PO001 – 3.3.06 – 0051, Operational Program "Human Resources Development", "European Social Fund", July 2013/October 2015
4. Marking the boundaries of the National Park "Pirin", the reserves "Bayovi Dupki – Dzhindzhirica", "Ulen" and "Tisata", and the buffer zone of the World Heritage – UNESCO with permanent signs on the ground. Project № DIR-5113325-3-91 "Sustainable management of the National Park" Pirin" and the Reserve "Tisata". OP "Environment 2007-2013"
5. Learning Toxicology Through Open Educational Resources (TOX-OER), KA203 Strategic partnership, Erasmus+, Project Number- 2015-1-ES01-KA203-015957, 01.09.2015 – 31.08.2017
6. "Study of the condition and effects of forest ecosystems after fire using remote aerospace methods and data", Project № DFNP-110 / 11.05.16, Program for career development of young scientists, BAS, 11/05/2016 - 11/05/2017
7. Modeling of forest ecosystems regeneration processes after fire based on orthogonalization of multispectral satellite data, Project № DFNP-17-80/28.07.2017, Program for career development of young scientists and PhD students in BAS, 2017
8. Judicially- technical expertise according to letter No. 1020/14.09.2017 of the Plovdiv Military Court under NOHD No. 245/2016.
9. Forest Disturbance Inventory using Remote Sensing (FoReS), ESA Contract No. 4000134290/21/NL/CBi, 2021 – 2023
10. "Civil Organizations – Assisting the Administration in Implementing Policies for the Conservation of Protected Areas and Ancient Trees", № BG05SFOP001-2.025-0085-C01, "Associations of Parks in Bulgaria", 2022-2023

## Scientific publications

1. Traykov I., Tosheva A., Stoyanova T., Doykin N., **Stankova N.**, 2010: Spatial heterogeneity of chlorophyll-a and some physicochemical parameters in Pancharevo Reservoir, В: Оджакова М. (ред.), Младежка научна конференция "Климентови дни", 22-23 ноември, 2010 г., СУБ, София, с. 32-35
2. Lubenova M., Nedkov R., Ivanova I., Shikalanov A., Georgieva N., Zaharinova M., Dimitrova M., Ivanova E., Yanchev V., Radeva K., **Stankova N.**, Tsoneva R., 2011: Study on ecological dynamics of forest vegetation in the region of East Rhodope on the base of satellites and terrestrial data, Ecological Engineering and Environment Protection 1/2011, p. 45-51, ISSN 1311 – 8668
3. Иванова И., Недков Р., **Станкова Н.**, Захаринова М., Димитрова М., Николова С., Радева К.; Анализ на наводнението от месец Февруари 2012 на територията на с. Бисер на базата на спътникови и GPS данни в ГИС среда; Осма научна конференция с международно участие, Space, Ecology, Safety, 4 – 6 декември 2012, София, с. 432-442
4. **Stankova N.**, Nedkov R., 2015: Investigation of forest vegetation dynamics before and after a fire by using aerospace data, Ecological Engineering and Environment Protection 1/2015, p. 40-46, ISSN 1311 – 8668
5. **Stankova N.**, Nedkov R., 2015: Monitoring the dynamics and post-fire recovery processes of different vegetation communities using MODIS satellite images, Journal of Environment Protection and Sustainable Development Vol. 1, No. 3, 2015, pp. 182-192
6. **Stankova N.**, Nedkov R., 2015: Monitoring forest regrowth with different burn severity using aerial and Landsat data, Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International, 26-31 July 2015, p. 2166 – 2169, doi 10.1109/IGARSS.2015.7326233
7. **Станкова Н.**, Иванова И., Павлова Н., Недков Р., Захаринова М., 2015: Екологични въздействия и последствия от наводнения в района на р. Марица чрез използване на спътникови, GPS и наземни данни за периода 2005 – 2014 г., Екологично инженерство и опазване на околната среда, No 4, 2015, с. 5-14
8. **Станкова Н.**, Недков Р., 2015: Модел за количествена оценка на Disturbance Index и вектора на моментното състояние на екосистема след пожар на базата на аерокосмически данни, Единадесета научна конференция с международно участие, Space, Ecology, Safety, 4-6 ноември, 2015, София, с. 292-297
9. **Stankova N.**, Nedkov R., 2016: Research model of monitoring the recovery of an ecosystem after fire based on satellite and GPS data, Ecological Engineering and Environment Protection 1/2016, p. 5-11, ISSN 1311 – 8668
10. Nedkov R., Ivanova I., Zaharinova M., **Stankova N.**, 2016: Actual state of Poda Protected Area using SAR data, Proceedings of the Third European SCGIS Conference "Geoinformation technologies for natural and cultural heritage conservation", 11-12 October 2016, Sofia, Bulgaria, p. 192-198

11. Richter A. A., Kazaryan M. L., Shakhramanyan M. A., Nedkov R., Borisova D., **Stankova N.**, Ivanova I., Zaharinoва M., 2016: Estimation of thermal characteristics of waste disposal sites using Landsat satellite images, Proceedings of the Bulgarian Academy of Sciences, 70, 2, 2017, p. 253-262, ISSN:1310-1331
12. Richter A., Kazaryan M. L., Shakhramanyan M. A., Borisova D., **Stankova N.**, Ivanova I., 2017: Information modeling of waste disposal sites, Ecological Engineering and Environment Protection 1/2017, p. 15-21, ISSN 1311 - 8668
13. Shakhramanyan M., Richter A., Kazaryan M., Nedkov R., Borisova D., **Stankova N.**, Ivanova I., Zaharinoва M., 2017: Evaluation of chemical process parameters in waste disposal sites by satellite images, Ecological Engineering and Environment Protection 1/2017, p. 22-28, ISSN 1311 - 8668
14. Ivanova I., Nedkov R., **Stankova N.**, 2017: Studying the process of vegetation in Poda Proteted Area using aerospace data, Proceedings of the Fifth International Conference "Ecological Engineering and Environment Protection" (EEEP'2017) Plovdiv, June 5-7, 2017, p. 191-200
15. Richter A., Kazaryan M., Shakhramanyan M., Nedkov R., Borisova D. , **Stankova N.**, Ivanova I., Zaharinoва M., 2017: Quality enchancement of satellite images and its application for indentification of surroundings of waste disposal sites, Proc. of SPIE Vol. 10444, 104441N, doi: 10.1117/12.2277309
16. **Stankova N.**, Nedkov R., Ivanova I., Avetisyan D., 2017: Integration of multispectral and SAR data for monitoring forest ecosystems recovery after fire, Proc. of SPIE Vol. 10444, 104441J, doi: 10.1117/12.2277313
17. **Станкова Н.**, Недков Р., Иванова И., 2016: Изследване на последствията и състоянието на горски екосистеми след пожар чрез използване на дистанционни аерокосмически методи и данни, Дванадесета научна конференция с международно участие, Space, Ecology, Safety, 2-4 ноември, 2016, София, България, с. 314-320
18. Kazaryan M., Shakhramanyan M., Nedkov R., Richter A., Borisova D., **Stankova N.**, Ivanova I., Zaharinoва M., 2017: Research of generalized wavelet transformations of Haar correctness in remote sensing of the Earth, Proc. of SPIE Vol.10427, 104271U, doi: 10.1117/12.2278572
19. **Станкова Н.**, Иванова И., 2017: Оценка на степента на увреждане на горски екосистеми след пожар, Тринадесета научна конференция с международно участие, Space, Ecology, Safety, 2-4 ноември, 2017, София, България, с. 275-279
20. Иванова И., **Станкова Н.**, 2017: Динамика на плаващите тръстикови острови в езерото Сребърна за периода пролет – лято 2017 г, с използването на SAR данни, Тринадесета научна конференция с международно участие, Space, Ecology, Safety, 2-4 ноември, 2017, София, България, с. 269-274
21. **Stankova N.**, Nedkov R., Ivanova I., Avetisyan D., Modeling of forest ecosystems recovery after fire based on orthogonalization of multispectral satellite data. Proc. SPIE 10790, Earth Resources and Environmental Remote Sensing/GIS Applications IX, 10790, SPIE, 2018, DOI:10.1117/12.2325643, 107901R-1-107901R-7. SJR:0.234

22. Spasova T., Gotchev D., Ivanova I., **Stankova N.**, Monitoring of Short-Lived Snow Coverage Based on Aerospace Data on Svalbard in Norway. Proceedings SES2018, Space Research Technology Institute - Bulgarian Academy of Sciences, 2018, ISSN:2603-3313, p. 306-315
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26. Ivanova I., **Stankova N.**, Borisova D., Spasova T., Dancheva A.. Dynamics and development of Alepu marsh for the period 2013-2020 based on satellite data. Proc. SPIE 11863, Earth Resources and Environmental Remote Sensing/GIS Applications XII, 1186315, 11863, SPIE, 2021, ISBN:9781510645707, ISSN:0277-786X, DOI:<https://doi.org/10.1117/12.2597726>, 1186315-1-1186315-9
27. Ivanova, I., **Stankova, N.**, Zaharinova, M.. Seasonal monitoring of Durankulak Lake using Sentinel 2 Data. Proceedings of 2nd National Workshop with International Participation on EU Copernicus Programme, 2021, ISSN:978-619-7490-09-1, DOI:<https://doi.org/10.5281/zenodo.6497337>, 16-24
28. **Stankova, N.**, Post-fire recovery monitoring using remote sensing: A review. Aerospace Research in Bulgaria, 35, 2023, ISSN: 1313-0927, 192–200. <https://doi.org/10.3897/arb.v35.e19>.
29. **Станкова, Н.**, Аветисян, Д., Мониторинг на състоянието и възстановителните процеси след три горски пожара в България с използването на дистанционни методи. Географ, 7, 2023, ISSN: 2534-949X, с. 62–68.
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31. **Stankova, N.**, Avetisyan, D., Modeling post-fire forest regrowth using tasseled cap-derived indicators, Proc. SPIE 12734, Earth Resources and Environmental Remote Sensing/GIS Applications XIV, 1273419 (19 October 2023); <https://doi.org/10.1117/12.2679783>.
32. **Stankova, N.**, Spasova, T., Ivanova, I., Monitoring post-fire forest regrowth using differenced disturbance index classification, Proc. SPIE 12786, Ninth International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2023), 127861V (21 September 2023); <https://doi.org/10.1117/12.2681787>.

33. Ivanova, I., Spasova, T., **Stankova, N.**, Using Sentinel-2 data for efficient monitoring and modeling of wetland protected areas, Proc. SPIE 12786, Ninth International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2023), 127861U (21 September 2023); <https://doi.org/10.1117/12.2681790>.
34. **Станкова, Н.**, Мониторинг на възстановяване след горски пожар с използване на Direction Angle, Proceedings SES2023, Nineteenth International Scientific Conference, Space, Ecology, Safety, 24-26 October, 2023, Sofia, Bulgaria, 281–285.
35. **Станкова, Н.**, Оценка на пораженията след горски пожар до село Хвойна (Средни Родопи) с използване на дистанционни методи, Proceedings SES2023, Nineteenth International Scientific Conference, Space, Ecology, Safety, 24-26 October, 2023, Sofia, Bulgaria, 286–290.
36. Иванова, И., **Станкова, Н.**, Спасова, Т., Използването на индекси за мониторинг на плаващите тръстикови острови в езерото Сребърна по данни от Sentinel 2, Proceedings SES2023, Nineteenth International Scientific Conference, Space, Ecology, Safety, 24-26 October, 2023, Sofia, Bulgaria, 293–298.
37. **Станкова Н.**, Оценка на следпожарните екологични ефекти с използване на дистанционни методи: преглед, Екологично инженерство и опазване на околната среда, 3-4, 2023, с. 44–51.
38. **Stankova, N.**, Avetisyan, D., Postfire Forest Regrowth Algorithm Using Tasseled-Cap-Retrieved Indices. Remote Sens. 2024, 16, 597. <https://doi.org/10.3390/rs16030597>.
39. Avetisyan, D., **Stankova, N.**, Observation of spectral indices performance for post-fire forest monitoring. Aerospace Research in Bulgaria, 36, 2024, 67–78.