

## Curriculum Vitae

### Personal information



First name(s) / Surname(s) **Stefan Shilev**

Work Address(es) 12, Mendeleev Str., 4000, Plovdiv, Bulgaria

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Mobile: +359 898410991

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Nationality Bulgarian

Date of birth 06.12.1973

### Work experience

Dates Since January 1998

Occupation or position held Full-time Professor, Dept. Microbiology and environmental biotechnologies, Agricultural University – Plovdiv, Bulgaria

Main activities and responsibilities Teaching and research

Name and address of employer Boryana Ivanova, Assoc. Prof., PhD, Rector, 12, Mendeleev Str., 4000, Plovdiv, Bulgaria

Type of business or sector Education and Research

Dates Since April 2024

Occupation or position held Head of Department of Microbiology and Environmental Biotechnologies, Agricultural University – Plovdiv

Dates Since November 2023

Occupation or position held Municipality councillor

Name and address of employer The people of the municipality of Plovdiv  
20, Avksentiy Veleshki Str., Plovdiv 4000

Dates December 2021 – February 2023

Occupation or position held Member of 47<sup>th</sup> and 48<sup>th</sup> Bulgarian Parliament

Name and address of employer The people of Bulgaria  
2, Narodno sabranie Sqr., 1169 Sofia, Bulgaria

Dates February 2020 – December 2021

Occupation or position held General Assembly Chairman

Name and address of employer Agricultural university – Plovdiv

Dates December 2014 – February 2020

Occupation or position held Director of Regional inspection of environment and waters – Plovdiv  
Ministry of environment and waters, Bulgaria

Main activities and responsibilities	Organizes, applies and provides the politics of Ministry of environment and waters of Bulgaria on the territory of Plovdiv district.
Name and address of employer	Minister of environment and waters, 22, Maria Luisa Str., 1000, Sofia, Bulgaria
Type of business or sector	Regional inspection, Public administration
Dates	March 2012 – December 2014
Occupation or position held	Director of Directorate of Ecology and waste management Municipality of Plovdiv, Bulgaria
Main activities and responsibilities	Organizes and participates in the development and managing of the politics of the Municipality in the area of ecology and waste management. Contributing in the realization of the plans and programs of the Municipality in area of ecology and waste management and generally in environmental strategy of the same.
Name and address of employer	Ivan Totev, Ing., Mayor of the Municipality of Plovdiv, 1, Stefan Stambolov Sqr., 4000, Plovdiv, Bulgaria
Type of business or sector	Local authority, public body
<b>Education and training</b>	
Dates	From 02 to 14 of March 2009
Title of qualification awarded	Specialization
Principal subjects/occupational skills covered	Training course “Capacity building in environmental related issues in the field of geo-mining: bioremediation and phytoremediation techniques for the reclamation of mine sites”
Name and type of organisation providing education and training	TWAS (UNESCO), FORGEA International, University of Monteponi, Sardinia, Italy
Dates	From 10 to 14 of March 2008
Title of qualification awarded	WISE (Waste In Social Environment) project Training Course 1 (TC1)
Principal subjects/occupational skills covered	“Substrate cycle waste management”, waste management and recycling
Name and type of organisation providing education and training	European Commission Marie Curie Actions, Processing and Recycling of Solid Waste Materials (I.A.R.) of the RWTH Aachen University, Germany
Dates	From 01 of January to 31 of August 2008
Title of qualification awarded	Post-doctoral Fellowship by The Fund “Science Investigations”, Bulgarian Ministry of Education and Science, project “post-doc-7”
Principal subjects/occupational skills covered	Investigation in the field of contaminated and abandoned land rehabilitation and remediation, plant growth-promotion, abiotic stress to plants and microorganisms
Name and type of organisation providing education and training	Dept. of Microbiology and Agronomy, University of Cordoba, Cordoba, Spain
Dates	From 26 to 30 of November 2007
Title of qualification awarded	STaR City of the future: “Changing waste to resource management”
Principal subjects/occupational skills covered	Training course – TC2 Waste
Name and type of organisation providing education and training	European Commission Marie Curie Actions, Project № MSCF-CT-2004-516617

Dates	01 of January 2007 to 31 of Dicember 2007
Title of qualification awarded	Post-doctoral Fellowship by The Spanish Agency for International Cooperation
Principal subjects/occupational skills covered	Title: "Bacterial proteomics in abiotic stress conditions"
Name and type of organisation providing education and training	Dept. of Microbiology and Unit of Proteomics, Campus of Rabanales, University of Córdoba, 14071, Córdoba, Spain
Dates	From 01 to 12 of October 2006
Title of qualification awarded	"Overexploitation and Contamination of Shared Groundwater Resources: Management, (Bio)technological, and Political Approaches to Avoid Conflicts"
Principal subjects/occupational skills covered	Problems of contemporary water contamination and consequences for the regional relationships.
Name and type of organisation providing education and training	NATO–Advanced Study Institute, Varna, Bulgaria
Dates	From 18 to 30 of August 2002
Title of qualification awarded	"Phytoremediation of heavy-metal contaminated soils"
Principal subjects/occupational skills covered	Clarifying the intimate mechanisms involved in the processes of green remediation of different pollutants
Name and type of organisation providing education and training	NATO–Advanced Study Institute, Trest, Czech Republic
Dates	From September 2000 to June 2003
Title of qualification awarded	PhD studies
Principal subjects/occupational skills covered	Name of PhD courses: "Improvement and Genetic engineering" PhD title: "Phytoremediation of heavy metal contaminated soils: application of <i>Pseudomonas fluorescens</i> – <i>Helianthus annuus</i> system"
Name and type of organisation providing education and training	PhD Directors: Prof. Enrique D. Sancho and Prof. Manuel Benlloch Marín High technical school of agriculture and forests, University of Córdoba, 14071, Córdoba, Spain
Dates	From October 1999 to July 2000
Title of qualification awarded	Fellowship by The Bulgarian Ministry of Education and Science
Principal subjects/occupational skills covered	Working on FEDER project 1FD97-2101 "Development of protocols for phytoextraction to remediate heavy metal contaminated soils".
Name and type of organisation providing education and training	High technical school of agriculture and forests, University of Córdoba, 14071, Córdoba, Spain
Dates	From 01 of March 1999 to 30 of April 1999
Title of qualification awarded	Specialization on Waste Water Purification Systems
Principal subjects/occupational skills covered	Introduction to the Urban water treatment plants
Name and type of organisation providing education and training	Faculty of Biology, University of Sofia Directors: Prof. Raycho Dimkov and Prof. Yana Topalova
Dates	From 1991 to 1996

Title of qualification awarded	University Diploma – Master Agronomic engineer in “Plant Protection”																																																											
Principal subjects/occupational skills covered	Agronomic practices and plant protection of pests, environmental protection.																																																											
Name and type of organisation providing education and training	Agricultural University – Plovdiv, Bulgaria																																																											
<b>Personal skills and competences</b>																																																												
Mother tongue(s)	Bulgarian																																																											
Other language(s)																																																												
Self-assessment																																																												
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	<i>(*) Common European Framework of Reference for Languages</i>																																																											
Social skills and competences	Official Translator of Spanish language (Bulgarian Ministry of Foreign Affairs), since 2004 Owner of certificate level “Superior” of the Institute Cervantes (Spain) for knowledge of Spanish language.																																																											
Organisational skills and competences	Very good organisational skills and work in equipment, tolerant and responsible.																																																											
Technical skills and competences	Knowledge on National and international legal base in area of Environment; Techniques of Centrifugation and ultra-centrifugation, Spectrometry (atomic absorption, UV-Vis), Electrophoresis (One- and bi-dimensional), Proteomic approaches, PCR, Microorganisms assays (laboratory and field), Microscopy (fluorescence, contrast), Identification and characterization of microorganisms (MicroLog™ System, Biolog, Inc.) and others.																																																											
Computer skills and competences	Very good knowledge on MS Office system (Word, Excel, PowerPoint, etc.), Statistical software Statistix 8.0; Adobe Acrobat, Web, Internet, Biology & specialized programs, etc.																																																											

<p>Main national and international projects</p>	<ul style="list-style-type: none"> <li>- Participating scientist in FEDER project 1FD97-2101 (1999-2001) "Development of protocols for phytoextraction to remediate heavy metal contaminated soils", Spain;</li> <li>- Bulgarian principal investigator in NATO-CLG project ref. – 980493 (2004-2006) "Phytoremediation of sites contaminated with heavy metals";</li> <li>- Expert in COST Action 859 "Phytotechnologies to promote sustainable land use and improve food safety" (running till 2009);</li> <li>- Participating scientist in 6 FP ISEKI FOOD2 project, 226032 - CP - 1 - 2005 - 1 - PT - ERASMUS – TN.</li> <li>- Effect of the chemical derivatives on water and potassium transport in sunflower plants. Role of soil microorganisms. Financing organization: PETRESA (Spain petrol company) (2006-2007);</li> <li>- Coordinator of project № Post Doc-7 (2007-2009) of Bulgarian Ministry of Education and Science.</li> <li>- Project № TKX 17-19 (2008-2011), Bulgarian Ministry of Education and Science-project</li> <li>- National representative in COST Action FA0905 "Mineral improved crop production for healthy food and feed" (2010-2014).</li> <li>- <b>Coordinator</b> of the project "Lowering of cadmium accumulation in horticultures using a new environmental approach" (2010 – 2014), funded by Fund science investigations, Bulgarian Ministry of Education and Science.</li> <li>- <b>Coordinator</b> for Bulgaria and Municipality of Plovdiv of project „Air implementation pilot" of European environmental agency and DG „Environment", dealing air contamination problems in Europe, 2012-2013</li> <li>- <b>Coordinator</b> for Bulgaria of project <b>SuWaNu</b> „Sustainable water treatment and nutrient reuse options", „Regions of knowledge", grant agreement № 319998, 01.07.2013 – 31.12.2015.</li> <li>- Participant in Bulgarian national project "Improving phytoremediation practices through study of the processes that influence on the heavy metal behavior in soil-soil solution-plant system" – on going;</li> <li>- <b>Coordinator</b> of project "Investigation of the possibilities and implementation of the waste management system on the territory of Agricultural university – Plovdiv", financed by Agricultural university – Plovdiv, 2018-2019;</li> <li>- <b>Coordinator</b> of Component 2 of National research program „Healthy food for strong bioeconomy and quality of life", Ministry of education and science, 2018-2022.</li> <li>- <b>Coordinator</b> for Bulgaria of project <b>SuWaNu Europe</b> „Network for effective knowledge transfer on safe and economic wastewater reuse in agriculture in Europe", Horizon 2020 program, Grant Agreement № 818088, 01.01.2019 – 30.06.2021.</li> <li>- Team and management body <b>member</b> of Agricultural university – Plovdiv in public procurement "Elaboration of analysis of the impact of agriculture on the environment and climate change in Bulgaria", assignor – Ministry of Agriculture, Forestry and Foods, 2019-2020.</li> <li>- <b>Member</b> of Management council of National science-innovation complex „Scientific-investigational infrastructure in area of food, nutrition and health", related to the participation of Bulgaria in pan-European infrastructure FNN-RI (FNN-RI BUL)", Ministry of education and science, 2021-2024.</li> <li>- <b>Coordinator</b> of Bulgarian team in <b>BOOST</b> project – "BOOSTing agribusiness acceleration and digital hub networking by an advanced training program on sustainable Precision Agriculture", Erasmus+ program, GA: 101056291, Project starting date: 15 September 2022, duration: 36 months.</li> <li>- <b>Coordinator</b> of Bulgarian team in <b>ConnectFarms</b> project – "Connecting sustainable agroecosystems and farming with circular bioeconomy and new technologies", JOINT CALL ERA-NET Cofund – SusAn, FACCE ERA-GAS, ICT-AGRI-FOOD and SusCrop, Project starting date: 01 December 2021, duration: 36 months.</li> </ul> <p><b>Additional information</b></p> <p><b>Activities in COST Action 0859:</b></p> <p><b>Chairman</b> of the Workshop meeting of WG1: Plant uptake/exclusion and translocation of nutrients and contaminants, 1<sup>st</sup> Scientific working session, COST Action 859, "Phytotechnologies to promote sustainable land use and improve food safety", WG 1, 14-16 June 2005 Pisa, Italy;</p> <p>Workshop meeting of WG4, COST Action 859: "Phytotechnologies – lessons from pilot and field scale", 27 – 29 April 2006, Sintra, Portugal;</p> <p><b>Chairman</b> of the Final discussion of WG1 of COST Action 859: "Root to shoot translocation of pollutants and nutrients", 22 – 24 June 2006, Santiago de Compostela, Spain;</p> <p><b>Reporter</b> of First Scientific session: "Field applications, case studies and research needs coming from field" of the Workshop of WG2 &amp; WG4 "Fate of pollutants in the plant / rhizosphere system: Fundamental aspects and their significance for field applications – Prospects and research needs", 30 May – 01 June 2007, Vilnius, Lithuania.</p> <p><b>Member</b> of Bulgarian society of humic compounds.</p> <p><b>Member</b> of the Bulgarian union of scientists</p> <p><b>Member</b> of the board of Regional Experts of the Environmental Biotechnology Division of the European Federation of Biotechnology (EFB).</p> <p><b>Member</b> of Reviewers board of Journal "Microorganisms", MDPI, IF=4,152.</p> <p><b>Guest Editor</b> in Journal Sustainability (ISSN 2071-1050) MDPI, Special issue "Sustainable Waste Management and Microbiology", IF=3.251, Q1</p> <p><b>Guest Editor</b> in Journal Land (ISSN 2073-445X) MDPI, Special issue "Sustainable management of urban soils and improving the quality of life", IF=3.395, Q2</p> <p><b>Guest Editor</b> in Journal Microorganisms (ISSN 2076-2607) MDPI, Special issue "Soil health and plant-microbiome-bioeffectors relationships in sustainable agriculture", IF=4.5, Q2</p>
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Professionals who could give reference	<p>Prof. Hristina Yancheva, Rector of Agricultural University, 12, Mendeleev Str., 4000, Plovdiv, Bulgaria, E-mail: <a href="mailto:christina@au-plovdiv.bg">christina@au-plovdiv.bg</a>;</p> <p>Ivan Totev, Mayor of Municipality of Plovdiv 2011-2019, Bulgaria, 1 Stefan Stambolov Sqr., 4000 Plovdiv, Bulgaria, <a href="mailto:kmet.kmet@plovdiv.bg">kmet.kmet@plovdiv.bg</a></p> <p>Prof. Enrique D. Sancho, Dept. of Microbiology, University of Córdoba, 14071, Córdoba, Spain, E-mail: <a href="mailto:edsancho@uco.es">edsancho@uco.es</a></p>
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**Scientific production**

Presentations to conferences	45
Full papers	78
Citations	800
Google-h-index	16
Scopus-h-index	12

## Last Publications

- Shilev, S.**, Naydenov, M., Sancho Prieto, M., Sancho, E.D., Vassilev, N. 2012. PGPR as Inoculants in Management of Lands Contaminated with Trace Elements. pp.: 259-277. In: Maheshwari D.K. (ed.) Bacteria in agrobiolgy: stress management. Springer Berlin Heidelberg, ISBN: 978-3-642-23465-1.
- Shilev, S.**, Sancho, E.D., Benlloch, M. 2012. Rhizospheric bacteria alleviate salt-produced stress in sunflower. Journal of Environmental Management. Volume 95, Issue SUPPL., March 2012, Pages S37-S41.
- Vassileva, M., Medina, A., Reyes, A., Martos, V., **Shilev, S.**, Vassilev, N. 2012. Remediation of heavy metal contaminated soils by phosphate-bearing biotechnological products. pp.: 465-474. In: Alexander C. Mason (Ed.) Bioremediation: biotechnology, engineering and environmental management. Nova Science Publishers, Inc.
- Shilev, S.** 2013. Soil rhizobacteria regulating the uptake of nutrients and undesirable elements by plants. pp.: 147-167. In: N. K. Arora (ed.) Plant microbe symbiosis – fundamentals and advances. DOI 10.1007/978-81-322-1287-4\_5, Springer India.
- Shilev, S.**, Naydenov, M., Gachev, V., Rangova, I., Babrikov, T. 2014. Compost incorporation in contaminated soil affects heavy metal mobility and accumulation in spinach. In: "Industrial, Medical and Environmental Applications of Microorganisms: Current Status and Trends", Proceedings of V International conference of environmental, industrial and applied microbiology, Madrid, Spain, 2-4 October 2013. Wageningen Academic Publishers, pp. 76-82.
- Atanassov, D., **Shilev, S.**, Naydenova, E., Chervenkov, H., Yankova, T. 2014. Air quality management system of the city of plovdiv -Annual analysis for 2013, 16th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes 8-11 September 2014, Varna, Bulgaria. <http://www.harmo.org/conferences/Proceedings/Varna/publishedSections/H16-020-Atanassov-EA.pdf>
- Michailidis, A., Papadaki-Klavdianou, A., Apostolidou, I., Lorite Torres, I., Augusto Pereira, F., Hänel, M., Buhagiar, J., **Shilev, S.**, Michaelidis, E., Loizou, E., Chatzitheodoridis, F., Casielles Restoy, R., Lorenzo Lopez, A. 2015. Exploring treated wastewater issues related to agriculture in Europe, employing a quantitative SWOT analysis. Procedia Economics and Finance 33: 367-375.
- Бабрикова Ив., **Ст. Шилев**, Т. Бабриков. 2016. Намаляване на натрупването на тежки метали в спанак отглеждан върху замърсена почва с използване на компост и полезни бактерии. Сборник с доклади от „Екология и здраве“ 09-10 юни 2016 г., стр. 435-440, ISSN 2367-9530, <http://hst.bg/bulgarian/conference.htm>
- Babrikova I., **S. Shilev**, T. Babrikov. 2016. Compost and PGPR decrease heavy metal availability and toxicity to vegetables. In: (Filcheva, Stefanova, Ilieva eds.). 4th Nat. conf. of BHSS with Int. Participation. 8-10 September, 2016, Sofia, ISBN 978-619-90189-2-7, 285-294.
- Ангелова, Д., **Ст. Шилев**. 2016. Оценка на съвместно компостиране на утайка от ПСОВ и биоразградими отпадъци от паркове за изпълнение изискванията за оползотворяване в земеделието. Сборник с доклади от „Екология и здраве“ 09-10 юни 2016 г., стр. 429-434, ISSN 2367- 9530, <http://hst.bg/bulgarian/conference.htm>
- Angelova D., **S. Shilev**, M. Naydenov. 2016. Composting of sewage sludge at large scale for subsequent utilization in agriculture. In: (Filcheva, Stefanova, Ilieva eds.). 4th Nat. conf. of BHSS with 8-10 September, 2016, Sofia, ISBN 978-619-90189-2-7, 285-295.
- Georgiev D, Dobrev G, **Shilev S.** 2018. Purification and properties of a phytase from *Candida melibiosica* 2491. Emirates Journal of Food and Agriculture 30(11): 927-934. doi: 10.9755/ejfa.2018.v30.i11.1857.
- Shilev S.**, Azaizeh H, Angelova D. 2019. Biological treatment: a response to the accumulation of biosolids. pp.: 149-178. In: Singh, D.P., Gupta, V.K., Prabha, R. (Eds.) Microbial Interventions in Agriculture and Environment, Volume 2: Rhizosphere, Microbiome and Agro-ecology. Springer Singapore. doi: DOI: [https://doi.org/10.1007/978-981-13-8383-0\\_5](https://doi.org/10.1007/978-981-13-8383-0_5), ISBN: 978-981-13-8383-0.
- Shilev, S.**, Azaizeh, H., Vassilev, N., Georgiev, D., Babrikova I. 2019. Interactions in soil-microbe-plant system: adaptation to stressed agriculture. pp.131-171. In: Singh, D.P., Gupta, V.K., Prabha, R. (Eds.) Microbial Interventions in Agriculture and Environment, Volume 1: Research Trends, Priorities and Prospects. Springer Singapore. DOI: [https://doi.org/10.1007/978-981-13-8391-5\\_6](https://doi.org/10.1007/978-981-13-8391-5_6), ISBN: 9789811383915
- Shilev S.**, Babrikova I, Babrikov T. 2020. Consortium of plant growth-promoting bacteria improves spinach (*Spinacea oleracea* L.) growth under heavy metal stress conditions. Journal of Chemical Technology and Biotechnology, 95(4), pp. 932-939 , ISSN:1097-4660, <https://doi.org/10.1002/jctb.6077>.
- Shilev S.** 2020. Arsenate tolerance in *Saccharomyces cerevisiae* is associated with the efflux capability. Acta microbiologica bulgarica, 36(2): 63-67.
- Shilev, S.** 2020. Plant growth-promoting bacteria mitigating soil salinity stress in plants. Appl. Sci. 10(20), 7326. <https://doi.org/10.3390/app10207326> Q2 "General engineering", IF=2,474.
- Vassileva, M., Malusà, E., Sas-Paszt, L., Trzcinski, P., Galvez, A., Flor-Peregrin, E., **Shilev, S.**, Canfora, L., Mocali, S., Vassilev, N. 2021. Fermentation Strategies to Improve Soil Bio-Inoculant Production and Quality. Microorganisms 9(6), 1254.
- Angelova, D., **S. Shilev**. 2021. Composting and vermicomposting of biosolids for utilization in agriculture. Journal of environmental protection and ecology. 22(3), 1030-1039.
- Shilev, S.**, Kartalska, Y., Dimitrova, K. 2021. Chapter 4 – Bacterial alleviation of drought stress in plants: Potential mechanisms and challenges, pp. 55-71, (Kumar, A. & Droby, S.), In: Microbial Management of Plant Stresses: Current Trends, Application and Challenges, ISBN: 9780323851930, DOI: 10.1016/b978-0-323-85193-0.00008-5.
- Shilev, S.**, Dirimanova, V., Danailova, A. 2022. The water reuse – a tool to overcome the scarcity. JEPE. 23(1), pp. 142-151.
- Shilev, S.**, Mitova, I., Kuncheva, V., Dinev, and Kabaivanova, L. 2022. Distribution of Soil Microorganisms in Field under Potatoes due to Fertilizer and Organics. Indian Journal of Agricultural Research. 56(4), pp. 401-407, <https://doi.org/10.18805/IJARE.A-669>
- Chopkova, V., Petkova, M., **Shilev, S.** 2023. Uncovering Bacterial Diversity during Mesophilic and Thermophilic Phases of Biowaste Composting through NextGeneration Sequencing. Applied Sciences 13, 3111. <https://doi.org/10.3390/app13053111>.
- Kircher, M., Aranda, E., Panayiotopoulos, A., Radojic-Rednovnikov, I., Romantschuk, M., Ryberg, M., Schock, G., **Shilev, S.**, Stanescu, M.D., Stankeviciute, J., Surmacz-Górska, J., Tsipa, A., Vasquez, M., Villano, M., Voraías, C.A.

- Publications** Chopkova, V., Petkova, M., **Shilev, S.** 2023. Uncovering Bacterial Diversity during Mesophilic and Thermophilic Phases of Biowaste Composting through NextGeneration Sequencing. *Applied Sciences* 13, 3111. <https://doi.org/10.3390/app13053111>.
- Kircher, M., Aranda, E., Panayiotopoulos, A., Radojic-Rednovnikov, I., Romantschuk, M., Ryberg, M., Schock, G., **Shilev, S.**, Stanescu, M.D., Stankeviciute, J., Surmacz-Górska, J., Tsipa, A., Vasquez, M., Villano, M., Vorgias, C.A. 2023. Treatment and valorization of bio-waste in the EU. *EFB Bioeconomy Journal*, 100051, Online ISSN: 2667-0410, <https://doi.org/10.1016/j.bioeco.2023.100051>.
- Petkova, M., **Shilev, S.** 2023. Revealing Fungal Diversity in Mesophilic and Thermophilic Habitats of Sewage Sludge Composting by Next-Generation Sequencing, *Appl. Sci.* 2023, 13(9), 5546; <https://doi.org/10.3390/app13095546>
- Popova, V., Petkova, M., **Shilev, S.** 2023. Metagenomic approach unravelling bacterial diversity in combined composting and vermicomposting technology of agricultural wastes. *Ecologia balkanica*, 15(3): 135-150.
- Калоян Грозев, Ваня Попова, Мариана Петкова, **Стефан Шилев**. 2023. Сравнително изследване на почвената микробиална активност при органично и минерално торене на житни култури. *Наука, технологии, иновации и бизнес*, Сборник с доклади от Национален младежки форум „Наука, технологии, иновации и бизнес“ 27-28 април, 2023, Пловдив, ISSN: 2367-8569, 289-293.
- Neykova, I., **Shilev, S.** 2024. Compost and Beneficial *Pseudomonas* Populations Promote Enzyme Activity, Amino Acids, and Polymers Utilization Patterns in Heavy Metal Contaminated Soils. *Acta Microbiologica Bulgarica* 40(1), pp. 84-96.
- Shilev, S.**, Neykova, I. 2024. Sewage sludge vermicompost alters the soil microbial community physiological profiles and significantly increases enzymatic activities in the tomato plant rhizosphere. *Environmental Engineering and Management Journal* (in press).