

# Rolandas Karitonas

## CONTACT INFORMATION

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[https://www.researchgate.net/profile/Rolandas\\_Karitonas](https://www.researchgate.net/profile/Rolandas_Karitonas)

## EDUCATION AND ACADEMIC DEGREE

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1994-1999 PhD studies; Biomedical sciences, agronomy (06B), Lithuanian Institute of Horticulture (now The Lithuanian Research Centre for Agriculture and Forestry). Doctoral thesis “Effect of nitrogen fertilizers and mineral N in soil on yield and quality of broccoli and cauliflower“ scientific supervisor Akad. prof. habil. dr. V. Vasiliauskienė.  
1981–1986 Diploma in Forestry, Lithuanian Academy of Agriculture (now Vytautas Magnus University Agriculture Academy), Forestry faculty

## PROFESSIONAL EXPERIENCE

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2003 – present Researcher; Nature Research Centre.  
1999 - 2002 Researcher; Lithuanian Institute of Horticulture

## RESEARCH INTERESTS

Aquatic ecotoxicology, environmental toxicology. Study of the reactions of oxidative stress and biotransformation systems in organisms belonging to different biological and phylogenetic levels  
Assessment of surface water quality by various biotests.

## PUBLICATIONS

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*Scientific articles published in journals (books), indexed in „Clarivate Analytics Web of Science“ database (with citation index):*

1. Manusadžianas L., Vitkus R., Gylytė B., Cimperman R., Džiugelis M., **Karitonas R.**, Sadauskas K. (2020). Ecotoxicity responses of the macrophyte algae *Nitellopsis obtusa* and freshwater crustacean *Thamnocephalus platyurus* to 12 rare earth elements. Sustainability, 12(17):7130. DOI 10.3390/su12177130
2. **Karitonas R.**; Jurkonienė S; Sadauskas K; Vaiciūnienė, J.; Manusadžianas L. (2020) Modifying effects of leaf litter extracts from invasive versus native tree species on copper-induced responses in *Lemna minor*. PEERJ Volume: 8 DOI: 10.7717/peerj.9444
3. Manusadžianas L., Gylytė B., Grigutytė R., **Karitonas R.**, Sadauskas K., Vitkus R., Šiliauskas L., Vaičiūnienė J. (2017). Accumulation of copper in the cell compartments of charophyte *Nitellopsis obtusa* after its exposure to copper oxide nanoparticle suspension. Environmental Science and Pollution Research, 24(36):27653-27661. DOI 10.1007/s11356-016-8023-0
4. Krevš A., Darginavičienė J., Gylytė B., Grigutytė R., Jurkonienė S., **Karitonas R.**, Kučinskienė A., Pakalnis R., Sadauskas K., Vitkus R., Manusadžianas L. (2013). Ecotoxicological effects evoked in hydrophytes by leachates of invasive *Acer negundo* and autochthonous *Alnus glutinosa* fallen off leaves during their microbial decomposition. Environmental Pollution, 173:75–84

5. Manusadžianas L., Caillet C. Fachetti L., Gylytė B., Grigutytė R., Jurkonienė S., **Karitonas R.**, Sadauskas K., Thomas F., Vitkus R., Férard J.-F. (2012). Toxicity of copper oxide nanoparticle suspensions to aquatic biota. *Environmental Toxicology and Chemistry*, 31(1):108-114. DOI 10.1016/j.envpol.2012.09.016

***Scientific articles published in journals (books), indexed in „Clarivate Analytics Web of Science“ database (without citation index):***

1. Gylytė B., Manusadžianas L., Sadauskas K., Vitkus R., Jurkonienė S., **Karitonas R.**, Petrošius R., Skridlaitė G., Vaičiūnienė J. (2015). Latent cell mortality after short-term exposure of *Nitellopsis obtusa* cells to copper oxide nanoparticles. *Botanica Lithuanica*, 21(2):89–98. DOI 10.1515/botlit-2015-0012
2. **Karitonas R.** 2003. Development of a nitrogen management tool for broccoli. *Acta Horticulturae* 627:125-129.
3. **Karitonas R.** 2002. The value of soil mineral N, tissue nitrate and foliar nutrition concentrations testing as a nitrogen management tool in broccoli production. DIAS report, Plant Production. ISSN 1397-9884. Denmark, no.84, p.149-156.
4. **Karitonas R.** 2001. Effect of nitrogen supply on yield and quality of broccli in *Developments in plant and soil sciences*. Horst W. et al. (eds) ISBN 0-7923-7105-4. Dordrecht/Boston/London: Kluwer Academic Publishers. Vol 92, p.298-299.
5. **Karitonas R.** 1999. Optimization of nitrogen mineral nutrition for broccoli. *Scientifics works of Lithuanian institute of horticulture and Lithuanian university of agriculture. Horticulture and vegetable growing* 18(3): 122-128. (Lithuanian, summary in English and Russian). ISSN 0208-2519.
6. **Karitonas R.**, Petronis P., Viskelis P. 1999. The effect of sprinkler irrigation on the yield, quality and storage of cauliflower and broccoli. *Scientifics works of Lithuanian institute of horticulture and Lithuanian university of agriculture. Horticulture and vegetable growing* 18(2): 72-81. (Lithuanian, summary in English and Russian). ISSN 0208-2519.
7. **Karitonas R.**, Viskelis P. 1999. Investigation of broccoli (*Brassica oleracea* L. convar. botrytis (L) Alef. var. cymosa Duch.) varieties and hybrids. Estimation of biochemical composition in broccoli. *Scientifics works of Lithuanian institute of horticulture and Lithuanian university of agriculture. Horticulture and vegetable growing* 18(1): 86-97. (Lithuanian, summary in English and Russian). ISSN 0208-2519.
8. Staugaitis G., **Karitonas R.**, Lubyte J. 1998. Nitrates in brassica vegetables production. *The Lithuanian academy of sciences. Agriculture Sciences*. 3: 41-46. ISSN 1392-0200.
9. **Karitonas R.**, Staugaitis G. 1998. Influence of nitrogen on broccoli. *Scientifics works of Lithuanian institute of horticulture and Lithuanian university of agriculture. Horticulture and vegetable growing* 17(1): 83-89. (Lithuanian, summary in English and Russian). ISSN 0208-2519.
10. Staugaitis G., **Karitonas R.** 1998. Influence of nitrogen fertilizer and soil mineral nitrogen levels on cauliflower yield. *Scientifics works of Lithuanian institute of horticulture and Lithuanian university of agriculture. Horticulture and vegetable growing* 17(1): 75-82. (Lithuanian, summary in English and Russian). ISSN 0208-2519.

**PARTICIPATION IN INTERNATIONAL AND NATIONAL SCIENTIFIC PROGRAMMES AND PROJECTS**

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- |           |   |
|-----------|---|
| 2022–2025 | „Dissemination and ecotoxicity of veterinary antibiotics“ [TOXVET]. LMT Nr. S-MIP-22-70);   |
| 2020–2021 | „Development of bioassay-biomarker battery for the evaluation of pharmaceutical-impacted aqueous environment“ [PHARMBIOB] Joint Ukrainian-Lithuanian Research and Development Projects (grant No S-LU-20- |

10).

- 2012-2014 Research Council of Lithuania, grant No LEK-12/2012, "Ecotoxicological impact of the boxelder maple invasion on the waterside ecotones" (ACERTODUE). LMT Nr.LEK-12/2012, GTC.
- 2011-2013 Ministry of Environment of Lithuania, grant No 4F11-54, "Development of methodological and legal strategy for the control of effluent ecotoxicity".
- 2010-2012 Research Council of Lithuania, grant No LEK-20/2010, "Fallen-off leaves induced oxidative stress changes in hydrophytes due to invasion of *Acer negundo*" (ACERTOXTX).Nr. LEK-20/2010.
- 2009-2013 (COHIBA)“ [Control of hazardous substances in the Baltic Sea region]. Projekto partnerio HELCOM.
- 2009-2010 GILIBERT „Study of the ecotoxicological effects of metallic nanomaterials on freshwater algae“ LVMST/LMT.
- 2004 “Applied aspects of genetic specificity of plant mineral nutrition (GESPMIN:PK)”, Lithuanian State Science and Studies Foundation, Nr. T-17/04.

## STAŽUOTĖS IR MOKYMAI

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- 2009 11 19-23 “Nanotechnology: Environmental Risks and Regulations”. New Orleans, Louisiana, USA 19-23 November 2009.

## PARTICIPATION IN SCIENTIFIC CONFERENCES

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### *Tarptautinė mokslinė konferencija:*

1. Manusadžianas L., Gylytė B., **Karitonas R.**, Sadauskas K., Vitkus R., Vaičiūnienė J. Charophyte cell toxicity response to nCuO and CuSO<sub>4</sub>: Does it depend on ambient calcium? 18<sup>th</sup> International Symposium on Toxicity Assessment (ISTA-18),. Limeira, Brazil, July 16-21, 2017.
2. Manusadžianas L, Sadauskas K., Vitkus R, Gylytė B, **Karitonas R.**, A. Krevš, A. Kučinskienė, N. Kazlauskienė and J. Žaltauskaitė. 2017. Two-level test-battery approach for routine effluent control in Lithuania. Sixth International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE 2017) & The International Society of Ecotoxicology and Environmental Safety (SECOTOX) Conference. Thessaloniki Greece, June 24-30, 2017
3. Jurkonienė S., Darginavičienė J., Gylytė B., **Karitonas R.**, Sadauskas K., Vitkus R., Manusadžianas L., 2014: *Nitellopsis obtusa* microsomal H<sup>+</sup>-ATPase activity as a biomarker for general water toxicity. 19<sup>th</sup> Meeting of the Group of European Charophytologists (GEC 19<sup>th</sup>) Vilnius, Lithuania, September 11–14, 2014.
4. Manusadžianas L, Darginavičienė J, Gylytė B, Grigutyte R, Jurkonienė S, **Karitonas R.**, Krevš A, Kučinskienė A, Pakalnis R, Sadauskas K, Vitkus R. 2011: Comparative study of the impacts of invasive *Acer negundo* and autochthonus *Alnus glutinosa* leaf extracts on aquatic organisms. 15<sup>th</sup> International Symposium on Toxicity Assessment(ISTA-15). City University of Hong Kong. Hong Kong, China, July 03-08,2011.
5. Manusadžianas L., R. Grigutyte, **R. Karitonas**, K. Sadauskas, R. Vitkus. COHIBA – a promising effort towards sustainable ecotoxicological control of wastewater flows into the Baltic sea. 3<sup>rd</sup> International Conference on Small and Decentralized Water and Wastewater Treatment Plants. Skiathos, Greece, May 14-16, 2010.

6. Manusadžianas L., R. Grigutyte, **R. Karitonas**, K. Rubekin, R. Vitkus, K. Sadauskas. Toxicity of copper oxide nanoparticle suspensions to aquatic biota. Nanotechnology Conference, Clemson University. Clemson, USA, August 21-27, 2010.
7. Manusadžianas L., Grigutyte R., Grigutyte R., Jurkoniene S., **Karitonas R.**, Sadauskas K., Ferard J.-F., Cotelles S. & Foucaud L. 2009. Toxicity of zinc oxide nanoparticle suspensions to aquatic biota. ISTA-14, Metz, France 2009.
8. Manusadžianas L., Grigutyte R., **Karitonas R.**, Rubekin K., Sadauskas K., Vitkus R. 2009. Toxicity of copper oxide nanoparticle suspensions to aquatic biota. CEMEMPE – SECOTOX, Mykonos, Greece 2009.
9. Manusadžianas L., **Karitonas R.**, Sadauskas K., Vitkus R. 2007. Prediction of charophyte cell lethality from sublethal cell response after short-term exposure. Toyama, Japan, 2007.
10. Manusadžianas L., **Karitonas R.**, Sadauskas K., Vitkus R., 2006. Integration of short-term exposure and recovery responses for prediction of a long-term exposure toxic effects on charophyte cell. International conference on ecotoxicology: trends and perspectives. Wisła, Poland 2006.
11. Manusadžianas L., **Karitonas R.**, Sadauskas K., Vitkus R., Steinberg C. E. W. 2006. Antagonistic interactions of humic substance HS1500 and heavy metals as revealed by the response of charophyte cell. International Scientific Conference. *Genetic and physiological fundamentals of plant growth and productivity* Vilnius, Lithuania, 2006.
12. Manusadžianas L., Grigutyte R., **Karitonas R.**, Sadauskas K., Vitkus R. 2006. Combining of exposure and recovery parameters in charophyte cell response as an approach to reveal remote toxic effects. 3<sup>rd</sup> International Symposium. *Metals in the Environment*, Vilnius, Lithuania, 2006.
13. Manusadžianas L., Jurkoniene S., **Karitonas R.**, Sadauskas K., Vitkus R. 2005. Mitigation of heavy metal effects by humic substance HS1500 on charophyte cell of *Nitellopsis obtusa*. ETS & SSCT Joint Conference, Toila, Estonia, 2005.
14. Manusadžianas L., Steinberg Ch. E. W., Grigutyte R., Jurkoniene S. **Karitonas R.**, Phlugmacher S. 2005. Effects of humic substances on Charophyte *Nitellopsis Obtusa* at the enzyme, cell membrane and cellular endpoints. 12th International Symposium on Toxicity Assessment, Skiathos island, Greece, 2005
15. Steinberg Ch. E. W., Manusadžianas L., Grigutyte R., **Karitonas R.**, Jurkoniene S., Phlugmacher S. 2004. Membrane depolarization and elevation of ROS-defensive mechanisms due to the impact of dissolved natural organic matter (NOM) in the charophyte *Nitellopsis obtusa*. XXIX International Congress of Limnology, Lahti, Finland, 2004.
16. Steinberg Ch. E. W., Manusadžianas L., Grigutyte R., **Karitonas R.**, Jurkoniene S., Phlugmacher S. 2004. Membrane depolarization and elevation of ROS-defensive mechanisms due to the impact of dissolved natural organic matter (NOM) in the charophyte *Nitellopsis obtusa*, XII International Meeting of IHSS, Brazil, 2004.
17. **Karitonas R.** 2002. Development of nitrogen management tool for broccoli. 26<sup>th</sup> International Horticulture Society Conference “*Horticulture: Art and Science for Life*”, Toronto, Canada, 2002.
18. **Karitonas R.** 2001. The value of soil mineral N, tissue nitrate and foliar nutrition concentrations testing as a nitrogen management tool in broccoli production. As, Norway, 2001.
19. **Karitonas R.** 2000. Effect of nitrogen supply on yield and quality of broccoli. XIV International Plant Nutrition Colloquium “*Food security and sustainability of agro – ecosystems through basic and applied research*” Hannover, Germany, 2000.

*Nacionalinė mokslinė konferencija***PARTICIPATION IN THE STUDY PROCESS**

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*Supervision of bachelor and master students*

|                      |   |             |
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| Ritos Galvanauskaitė | Topic of bachelor's thesis: „Toxic effect of water-soluble substances and Cu <sup>2+</sup> of Sosnovsky borsch ( <i>Heracleum sosnovskyi</i> ) on <i>Pseudokirchneriella subcapitata</i> “ (Vilnius university, Botany study program) | 2010 – 2011 |
| Konstantin Rubekin   | Master thesis topic: „Sulphur influence oxidative stress enzymes of the bulb vegetables ( <i>Allium cepa</i> L. and <i>Allium ascalonicum</i> L.)“ (Vilnius university, Biochemistry study program)                                   | 2006 – 2007 |

**KITA**

From 2013      Technical expert in Lithuanian National Accreditation Bureau