

# Raimondas Mozūraitis

## CONTACT INFORMATION

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## EDUCATION AND ACADEMIC DEGREE

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2008 Associated Professor in Ecological Chemistry, Royal Institute of Technology, Sweden.

1998 – 2000 PhD in Organic Chemistry, Chemistry, Natural Sciences (N 003), Royal Institute of Technology, Stockholm, Sweden.  
“Chemical Communication in Leaf Mining Moths of the Genus *Phyllonorycter*”, supervisor Prof. Anna-Karin Borg-Karlson.  
Research area: Analytical Chemistry of Infochemicals, Chemical Ecology.

1993 – 1996 PhD in Ecology, Natural Sciences (N 012) Institute of Ecology, Vilnius, Lithuania.  
“Peculiarities of Chemical Communication in *Phyllonorycter* Moth (Lepidoptera: Gracillariidae)”, supervisor Habil. Dr. Vincas Būda.  
Research area: Chemical Ecology.

1996 – 1998 Licentiate in Organic Chemistry, Natural Sciences (N 003), Royal Institute of Technology, Stockholm, Sweden.  
“Communication by semiochemicals in the genus *Phyllonorycter* (Lepidoptera: Gracillariidae)” supervisor supervisor Prof. Anna-Karin Borg-Karlson.  
Research area: Analytical Chemistry of Infochemicals, Chemical Ecology.

1983 – 1988 Biologist, Lecturer of biology and chemistry (=MSc), Vilnius University, Lithuania  
Specialisation in Zoology. Work was carried out at the Laboratory of Insects chemoreception, Institute of Zoology and Parasitology, Vilnius  
Research area: Chemical Ecology. Entomology.

## PROFESSIONAL EXPERIENCE

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2012- present **Chief researcher**  
Laboratory of Chemical and Behavioural Ecology, Institute of Ecology, Nature Research Center, Vilnius, Lithuania, (distant working agreement)

2016- present **Researcher**  
Division of Ecology, Department Zoology, Stockholm University, Stockholm, Sweden

2007 11 – 2017 04 **Visiting Researcher**  
Section of Ecological Chemistry, Division Organic Chemistry, Department of Chemistry, School of Chemical Science and Engineering, Royal Institute of Technology, Stockholm, Sweden

2001-2002 **Post-doc**  
Neurobiology unit, MTFs, Dept of Biology, Norwegian University of

Sciences and Technology, Trondheim, Norway

1999-2012	<b>Senior Researcher</b> Laboratory of Chemical Ecology, Institute of Ecology, Vilnius, Lithuania
1998-1999	<b>Researcher</b> Laboratory of Chemical Ecology, Institute of Ecology, Vilnius, Lithuania
1995-1998	<b>Research Assistant</b> Section of Chemical Ecology, Institute of Ecology, Vilnius, Lithuania
1989-1995	<b>Junior Researcher</b> Section of Chemical Ecology, Institute of Zoology and Parasitology, Vilnius, Lithuania
1988 – 1989	<b>Chief Laboratory Assistant</b> Laboratory of Insect Chemoreception, Institute of Zoology and Parasitology, Vilnius, Lithuania

## RESEARCH INTERESTS

Infochemical interactions among animals, microorganisms, and plants: their functions, ecological, and evolutionary peculiarities. Analytical Chemistry of Semiochemicals.

## PUBLICATIONS

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

In total 64 scientific articles were published in journals (books), and indexed in the WoS database (with citation index). List of 10 selected publications

1. Būda V., Radžiutė S., Apšegaitė V., Blažytė-Čereškienė L., Čepulytė R., Bumbulytė G. and **Mozūraitis R.** Electroantennographic and behavioural responses of European cherry fruit fly, *Rhagoletis cerasi*, to the volatile organic compounds from sour cherry, *Prunus cerasus*, fruits. *Insects*, 2022, 13, No114, 1-13. <https://doi.org/10.3390/insects13020114>;
2. **Mozūraitis R.**, Apšegaitė V., Radžiutė S., Aleknavičius D., Būdienė J., Stanevičienė R., Blažytė-Čereškienė L., Servienė E. and Būda V. Volatiles produced by yeasts related to *Prunus avium* and *P. cerasus* fruits and their potentials to modulate the behaviour of the pest *Rhagoletis cerasi* fruit flies. *Journal of Fungi*, 2022, 8(2), 95, <https://doi.org/10.3390/jof8020095>;
3. Stromsky V. E., Hajkazemian M., Vaisbourd E., **Mozūraitis R.** and Emami N. S. *Plasmodium* metabolite stimulates feeding of main mosquito vectors on blood and artificial toxic sources. *Communications Biology*, 2021, 4(1), article number: 1161, <https://doi.org/10.1038/s42003-021-02689-8>;
4. **Mozūraitis R.**, Hall D., Trandem N., Ralle B., Sigsgaard L., Baroffio C., Fountain M., Cross J., Wibe W. and Borg-Karlson. Composition of Strawberry Floral Volatiles and their Effects on Behavior of Strawberry Blossom Weevil, *Anthonomus rubi*. *Journal of Chemical Ecology*, 2020, 46, 1069-1081, <https://doi.org/10.1007/s10886-020-01221-2>;
5. **Mozūraitis R.**, Hajkazemian M., Zawada J. W., Szymczak J., Pålsson K., Sekar V., Biryukova I., Marc R. Friedländer M. R., Koekemoer L. L., Baird K. J., Borg-Karlson A-K. and Emami S. N. *Anopheles* male pheromone increases swarming, female attraction to the swarm, and mating in five main African malaria vectors. *Nature Ecology & Evolution*, 2020, vol. 4, 1395–1401, DOI: <https://doi-org.ezp.sub.su.se/10.1038/s41559-020-1264-9>;
6. Būda V., Blažytė-Čereškienė L., Radžiutė S., Apšegaitė V., Stamm P., Schulz S., Aleknavičius D. and **Mozūraitis R.** Male-produced (–)- $\delta$ -heptalactone, pheromone of fruit fly *Rhagoletis batava* (Diptera: Tephritidae), a sea buckthorn berries pest. *Insects*, 2020, 11, 138; DOI:10.3390/insects11020138;

7. **Mozūraitis R.**, Aleknavičius D., Vepštaitė-Monstavičė I., Stanevičienė R., Emami S. N., Apšegaitė V., Radžiutė S., Blažytė-Čereškienė L., Servienė E. and Būda V. *Hippophae rhamnoides*berry related *Pichia kudriavzevii* yeast volatiles modify behaviour of *Rhagoletis batava* flies. *Journal of Advanced Research*, 2020, vol. 21, 71-77, <https://doi.org/10.1016/j.jare.2019.08.001>;
8. Emami S. N., Lindberg B. G., Hua S., Hill S. R., **Mozūraitis R.**, Lehmann P., Birgersson, G., Borg-Karlson A.-K., Ignell R. and Faye I. A key malaria metabolite modulates vector blood seeking, feeding, and susceptibility to infection. *Science*, 2017, vol. 335, 1076–1080. DOI: 10.1126/science.aah4563;
9. **Mozūraitis R.**, Būda V., Kutra J., Borg-Karlson A.-K. *p*- and *m*-Cresols emitted from estrous urine are reliable volatile chemical markers of ovulation in mares. *Animal Reproduction Science*. 2012, vol. 130, 51-56. DOI: 10.1016/j.anireprosci.2011.12.008. ISSN: 0378-4320;
10. **Mozūraitis R.**, Strandén M., Ramirez M.I., Borg-Karlson A.-K., Mustaparta H. (-)-Germacrene D increases attraction and oviposition by the Tobacco budworm moth *Heliothis virescens*. *Chemical Senses*. 2002, vol. 27, 505-509. DOI: 10.1093/chemse/27.6.505.

***Scientific articles published in conference proceedings, indexed in „Clarivate Analytics Web of Science“ database:***

1. Wiegner W., Setkus A., Buda V., Borg-Karlson A.-K., **Mozūraitis R.**, de Gee A. BOVINOSE: Pheromone-Based Sensor System for Detecting Estrus in Dairy Cows. *Procedia Computer Science*, 2011, vol. 7, 340-342. DOI: 10.1016/j.procs.2011.09.024. ISSN: 1877-0509.

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

1. Elmhalli F., Garboui S. S., Borg Karlson A.-K., **Mozūraitis R.**, Baldauf S. L. and Giulio Grandi G. Toxicity against *Ixodes ricinus* nymphs of essential oils from the Libyan plants *Artemisia herba alba*, *Origanum majorana* and *Juniperus phoenicea*. *Veterinary Parasitology: Regional Studies and Reports*, 2021, 24, No 100575, <https://doi.org/10.1016/j.vprsr.2021.100575>.

***Other reviewed scientific publications (books, books' chapters, collections of articles, articles, textbooks and etc.):***

1. Mõttus E., Kahu K., Kännaste A., Liblikas I., Ojarand A., **Mozūraitis R.**, Ovsjannikova Y. and Nikolajeva Z. Results of field tests of pheromone dispensers for the currant shoot borer *Lampronia capitella* Cl. *Transactions of the Estonian Agricultural University*. 2001, vol. 213, 121-125.
2. Gorbunov O., Buda V., **Mozūraitis R.**, and Miatleuski J. A new species of clearwing moth from the Far East of Russia and its sex attractant (Lepidoptera, Sesiidae). *Atalanta*. 1994, vol. 25, 307-311.
3. **Mozūraitis R.**, and Būda V. Interspecific interactions by semiochemicals in Phyllonorycter species (Lepidoptera: Gracillariidae). In: *Research of Lithuanian Entomologists. To the Thirty Years of Lithuanian Entomological Society*. 1996, Vilnius, Lithuanian Entomological Society & Institute of Ecology, 198-202.
4. Ivinskis P., and **Mozūraitis R.** 13 new and 48 rare for the Lithuanian fauna Lepidoptera species. In: *New and Rare for Lithuania Insect Species. Records and Description of 1994-1995*. 1995, Vilnius, Institute of Ecology and Lithuanian Entomological Society, 153-160.

### ***Reviewed scientific articles, published in Lithuania:***

1. **Mozūraitis R.** Pheromone release behaviour in females of *Phyllonorycter strigulatella* (Lien. & Z.) and *Ph. sorbi* (Frr.) (Lepidoptera, Gracillariidae) under cycling temperature. *Ekologija*. 2006, No 4, 7-11.
2. Karalius V., Būda V., **Mozūraitis R.** Monitoring of the currant clearwing (*Synanthedon tipuliformis* Cl.) (Lepidoptera, Sesiidae) by pheromone traps in Lithuania. *Acta Zoologica Lituanica*. 2003, vol. 13, 283-289. <https://doi.org/10.1080/13921657.2003.10512682>
3. Būda V., Mozūraitis R., Jonušaitė V. Chemical ecology of blackflies: sexual dimorphism in cuticular washes of *Wilhelmia equina* (L.) (Diptera: Simuliidae). *Ekologija*. 2003, Nr1, 81-88.
4. Karalius V., **Mozūraitis R.** and Būda V. Attractivity of octadecadienols and their acetates for clearwings (Lepidoptera, Sesiidae) from Altai mountains. *Acta Zoologica Lituanica*. 2000, vol. 10, 92-96. <https://doi.org/10.1080/13921657.2000.10512349>

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

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In total, 27 completed research projects including 3 EU projects. Projects carried out during 2018-2022 period:

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| 2019 – 2023 | <b>Investigator</b> , Swedish Research Council “Transferability of gut microbiomes and the ecology of host-parasitoid interactions.” Project number: 2019-04980. Principal applicant Prof. P. Hämbäck.   |
| 2018 – 2021 | <b>Principal applicant</b> , “The role of metabolites in three-trophic interactions between plant, microorganisms and phytophagous insects.” European Social Fund, grant number 09.3.3-LMT-K-712-01-0099 under the grant agreement with the Research Council of Lithuania (LMTLT). |
| 2018 – 2021 | <b>co-applicant, investigator</b> , Swedish Agricultural Research Council FORMAS “A key to mitigate biodiversity threats arising from vector-born pathogens“. Project number: 2018-01563. Principal applicant Prof. Anna Qvanström   |
| 2018 – 2021 | <b>Investigator</b> , Swedish Research Council, Sweden. “Mechanisms by which malaria parasite manipulates mosquitoes for securing transmission success.“ No: 2017-01229. Principal applicant Assoc. Prof. N. Emami.  |

### **INTERNSHIP AND TRAINING**

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#### **University teacher training:**

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| 2006 - 2007 | Teaching and Learning 1 (7.5 credits, 40 academic hours equals 1,5 credits), the course code is 9L4002, Royal Institute of Technology, Stockholm, Sweden; |
| 2007 - 2008 | Teaching and Learning in Subject perspective (5 credits), the course code is LH203V, Royal Institute of Technology, Stockholm, Sweden;                    |
| 2008        | Research Supervision (3 credits), the course code is LH207V, Royal Institute of Technology, Stockholm, Sweden.  |

### **PARTICIPATION IN SCIENTIFIC CONFERENCES**

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#### **Participation in scientific conferences:**

Over 30 presentations in Belarus, Belgium, Canada, Czech Republic, China, England, Finland, France, Germany, Hungary, Italy, Japan, Lithuania, Norway, South African Republic, Sweden, Switzerland, USA

#### **Professional assignments at the scientific conferences**

- 2015 Organizer and chairman of the section Mice and men Vertebrate chemical ecology at 31st Conference of International Society of Chemical Ecology, 2015, June 29 – July 3, Stockholm, Sweden;
- 2012 Chairman of the section Chemical Ecology of Vertebrates at 28th conference of International Society of Chemical Ecology, 2012, July 22 – 26, Vilnius, Lithuania.

## **PARTICIPATION IN THE STUDY PROCESS**

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### **Commitment to PhD and post-doc education:**

2013 – present member of postgraduate education board at Nature Research Centre joint with Vilnius University, Vilnius, Lithuania;

2010 – 2014 Principal supervisor, Rushana Murthazina, Royal Institute of Technology, Stockholm, Sweden;

2013 – present Co-supervisor, Melika Hajkazemian, Stockholm University, Sweden;

2008 – 2013 Co-supervisor, Muhammad Azeem, Royal Institute of Technology, Stockholm, Sweden;

2005 – 2008 Supervisor, postdoc Tatsui Ashitani, Royal Institute of Technology, Stockholm, Sweden.

Opponent at PhD defences: Nanna Hjort Vidkjaer, 2008, Aarhus University, Denmark; Chanda Vongsombath, 2011, Uppsala University, Sweden; Samira S. Garboui, 2008, Uppsala University, Sweden.

Member of PhD defence committee: Stefan Papazian, 2017, Umeå University; Giovanna Luongo, 2015, Stockholm University; Silvia Masala, 2014, Stockholm University; Rasa Čepulytė-Rakauskienė, 2012, Vilnius University; Marie Danielsson, 2011, Royal Institute of Technology, Stockholm; Tao Zhao, 2011, Royal Institute of Technology, Stockholm.

### **Supervised undergraduate degree projects:**

21 supervised bachelor or master's degree projects at Royal Institute of Technology, and Stockholm University, Stockholm, Sweden.

### **Lectures at bachelor or master level:**

2020 – present Bioanalytical Chemistry, master level, course registration code KA7005, Stockholm University, Sweden;

2019 – present Sensory Biology, bachelor level, course registration code BL5030, Stockholm University, Sweden;

2017 – present Molecular Ecology, master level, course registration code BL7012, Stockholm University, Sweden.

## **OTHERS**

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### **Awards:**

2020 "Mosquito only spray" Gold medal and 2020 Stockholm Innovation Scholarship in the Life Science and Health category, Stockholm, Sweden;

2005 Award from King Carl XVI Gustafs fond for research on chemical and biological factors affecting egg-laying in butterflies;

2001 Student Travel Award from International Society of Chemical Ecology to outstanding young scientists.

### **Intellectual property:**

Mosquito Aggregation Composition“ International patent WO2019/197681A1. EPO code EP3772950A1, USPTO code US20210161132A1

**Member of Societies:**

2014 – present, Nordic Oikos Society;  
2006 – present, International Society of Chemical Ecology;  
1991 – present, Lithuanian Scientific Society (LSS);  
1989 – present, Lithuanian Entomological Society.

**Third stream activities**

I have consulted well-known Swedish artist Christine Ödlund. The talks about research activities I perform and insect and plant life have inspired her to create music and paintings presented in a few exhibitions:

- visual and music presentation entitled “Stress Call of the Stinging Nettle” which was presented for society at Nature History Museum (I have acted as a consultant for this exhibition), <https://www.youtube.com/watch?v=R3QOg5u2AUo>  
<https://www.magasin3.com/en/artwork/stress-call-of-the-stinging-nettle/>;
- photography exhibition “The Chemical Language of Plants” presented at the Museum of Modern Art, <http://www.christineodlund.se/>;
- music performed by the band Yellow Admiral inspired by the drumming behaviour of the butterfly yellow admiral which was used as a model object for research searching egg-laying stimulants from nettle plants <https://www.youtube.com/watch?v=JzbijPypiYM>.