

# Curriculum Vitae

## Personal Details

**Name:** Dr. Erika Bálint

**Date of birth:** 16.02.1986, Budapest, Hungary

**Affiliation:** Budapest University of Technology and Economics (BME), Faculty of Chemical Technology and Biotechnology, Department of Organic Chemistry and Technology, 1111 Budapest, Műegyetem rkp. 3.

**E-mail:** balint.erika@vbk.bme.hu

**Phone:** +36-1-463-1111/5886

## Current Position

**2023 – present** Group Leader, BME, Innovative Pharmaceutical and Chirotechnology Research Group, Department of Organic Chemistry and Technology

## Previous Positions

**2017 – present** Assistant Professor, BME, Department of Organic Chemistry and Technology

**2013 – 2017** Research Associate, MTA-BME Organic Chemical Technology Research Group

**2012 – 2013** Research Assistant, MTA-BME Organic Chemical Technology Research Group

**2009 – 2012** PhD Student, BME, Department of Organic Chemistry and Technology

## Education

- MSc in Chemical Engineering (2009, BME Faculty of Chemical Technology and Biotechnology)
- PhD in Organic Chemistry (2013, BME George A. Oláh Doctoral School of Chemistry and Chemical Technology)

## Language Skills

- English – Intermediate, C level (read and write)
- German – Intermediate, C level (read and write)

## Research Experience

Dr. Erika Bálint has over 15 years of experience in synthetic organic chemistry, with a focus on multicomponent reactions, microwave-assisted synthesis, flow chemistry, and the preparation of biologically active heterocyclic and phosphorus-containing compounds. Her research covers the development of atom-efficient synthetic methodologies for the preparation of nitrogen- and oxygen-heterocyclic scaffolds bearing phosphonate or phosphine oxide moieties, as well as their cyclodextrin complexes and biological evaluation.

She is particularly active in the development and application of enabling technologies, including microwave-assisted batch reactions (CEM, Anton Paar) and continuous flow synthesis (Asia systems, H-Cube Pro, photochemical flow reactors, 3D-printed reactors). Her research also covers total synthesis of biologically relevant inhibitor candidates, cyclodextrin chemistry, and stereochemical studies including resolutions and enantioselective syntheses.

Dr. Bálint has participated in numerous industrial and academic collaborations and has been principal investigator of several national and international research grants. She has supervised 22 BSc students, 17 MSc students, and 3 PhD students (+ 3 in progress), of whom 19 participated in Student Research Conference (TDK), with 12 award-winning contributions, and 5 received national OTDK awards.

### **Study Visits**

- 2022, 2019, 2012 – University of Ljubljana, Ljubljana, Slovenia (Hungarian-Slovenian Bilateral projects)
- 2013 – Institute of Chemistry Timisoara of Romanian Academy, Timisoara, Romania
- 2008 – University of St. Andrews, St. Andrews, UK (Dr. Nigel Botting, 2 months)
- 2007 – FUJIFILM Imaging Colorants Ltd., Manchester, UK (R. Cordwell, 2 months)

### **Fellowships and Grants**

- 2022 – 2026: Multicomponent synthesis of biologically active isatin and xanthene derivatives, their cyclodextrin complexes and cyclodextrin conjugates, NKFIH FK-142712 (principal investigator).
- 2021 – 2024: Research of a new, effective plant conditioning agent for the reduction of toxin production in cereals, 2020-1.1.2-PIACI-KFI-2021-00234 (subproject principal investigator).
- 2019 – 2020: Synthesis and physicochemical properties of transition metal and lanthanide complexes, Hungarian-Slovenian Bilateral project, 2018-2.1.11-TÉT-SI-2018-00008 (principal investigator).
- 2017 – 2021: Synthesis of heterocyclic aminophosphonate and aminophosphine oxide derivatives via multicomponent reactions, NKFIH FK-123961 (principal investigator).

- 2017 – 2021: János Bolyai Research Scholarship, Hungarian Academy of Sciences. Result: excellent.
- 2020 – 2021: ÚNKP Bolyai+ Higher Education Young Researcher Scholarship, Ministry of Human Capacities. Result: excellent.
- 2018 – 2019: ÚNKP Bolyai+ Higher Education Young Researcher Scholarship, Ministry of Human Capacities. Result: excellent.
- 2014 – 2017: Synthesis and utilization of aminophosphonate and aminophosphine oxide derivatives, OTKA PD-111895. Result: excellent (principal investigator).
- 2014: National Excellence Program – Pál Erdős Young Scientist Scholarship, Implementation of phosphorus chemical transformations applying microwave technology, A1-EPFK-14-0030 (principal investigator).

### **Awards and Honours**

- 2025 – President, Association of Hungarian Women in Science (Nők a Tudományban Egyesület)
- 2024 – Participant in IVLP "Hidden No More: Empowering Women Leaders in STEM" programme, supported by the US Government (sole Hungarian representative)
- 2022 – Certificate of Recognition "Who we are proud of – our academic excellences in 2022", BME Rector
- 2022 – Bolyai Memorial Plaques, Hungarian Academy of Sciences
- 2022 – Academic Youth Award, Hungarian Academy of Sciences
- 2021 – Ernő Pungor Award, Faculty of Chemical Engineering and Bioengineering, BME
- 2019 – Géza Zemplén Award for Organic Chemists, Hungarian Academy of Sciences, VII. Section of Chemical Sciences
- 2019 – Association Award, Hungarian Chemical Society
- 2019 – Women in Science Excellence Award – Chemistry Category, Association of Hungarian Women in Science (NaTE)
- 2017 – Kajtár-Hollósi Award for Organic Chemists, Board of Trustees of Kajtár-Hollósi Foundation
- 2017 – Certificate of Appreciation, BME Rector
- 2014 – National Excellence Program – Pál Erdős Young Scientist Scholarship
- 2013 – 1st place Poster Award, Hungarian Chemical Society
- 2012 – Lecturer Award, György Oláh PhD School, BME

- 2012 – Award for the Best Chairperson, 9th European Workshop on Phosphorus Chemistry, Rennes, France
- 2010 – Poster Award, György Oláh PhD School, BME
- 2009 – Thesis Award for Excellence, Hungarian Chemical Society
- 2008 – 1st place Award, Students' Scientific Research Work, BME

### **Committee Memberships and Editorial Activities**

- 2021 – 2023: Lead Member, Hungarian Young Academy
- 2020 – present: Academic Editor, *Molecules* – Organic Chemistry Section (MDPI)
- 2019 – 2024: Member, Hungarian Young Academy
- 2018 – present: Academic Editor, *Heteroatom Chemistry* (Hindawi)
- 2018: Member of the Local Organizing Committee, 22nd International Conference on Phosphorus Chemistry, Budapest
- 2016 – present: Member, Society of Hungarian Scientists and Scholars, Hungarian Academy of Sciences
- 2013 – present: Regular reviewer for international peer-reviewed journals: *Applied Surface Science*; *Bioorganic Chemistry*; *Catalysis Communications*; *Catalysts*; *Current Green Chemistry*; *Journal of Organic Chemistry*; *Molecules*; *Synthesis*; *Tetrahedron Letters*; *Phosphorus Sulfur and Silicon and the Related Elements*; and others.
- 2009 – present: Member, Hungarian Chemical Society

### **Most Important Publications Over the Last Five Years**

1. Rávai B., Ujj D.V., Orosz M.J., Revenco E., Béni Sz., Tajti Á., Bálint E. Pilot-Scale Continuous Flow Synthesis of Capsaicinoids and Their Formulation with Cyclodextrins. *ACS Omega*, 2026, 11, 4570–4580. DOI: 10.1021/acsomega.5c10910.
2. Gerő V., Steinsits D., Tamás Szabó P., Bálint E. Flow Chemistry Meets Green Solvents: Telescoped Synthesis of Triazolyl Phosphoramidates and Phosphinamides in  $\gamma$ -Valerolactone. *ChemSusChem*, 2026, 19, e70680. DOI: 10.1002/cssc.70680.
3. Ujj D.V., Kasal P., Fejős I., Béni Sz., Kardos J., Benkovics G., Bálint E., Mátravölgyi B. Complexation of Citalopram with  $\beta$ -Cyclodextrin, Mono-Subetadex and Subetadex. *ACS Omega*, 2026, 11, 24323–24333. DOI: 10.1021/acsomega.5c13544.
4. Rávai B., Németh Á.S., Kelemen Zs., Bálint E. Microwave-Assisted Multicomponent Synthesis of Spirooxindole Dihydropyridine Bisphosphonates. *European Journal of Organic Chemistry*, 2025, 28, e202400873. DOI: 10.1002/ejoc.202400873.
5. Orosz J.M., Rávai B., Mátravölgyi B., Bálint E. Flow Synthesis of Capsaicin and Capsaicinoid Analogues. *ACS Sustainable Chemistry & Engineering*, 2024, 12, 7913.

IF: 7.300. Independent citations: 6.

6. Popovics-Tóth N., Bao T.D.T., Tajti Á., Mátravölgyi B., Kelemen Zs., Perdih F., Hackler L., Puskás L.G., Bálint E. Three-component Reaction of 3-Formyl-6-methylchromone, Primary Amines and Secondary Phosphine Oxides: A Synthetic and Mechanistic Study. *ACS Omega*, 2023, 8, 2698–2711. IF: 4.132. Independent citations: 5.

### Further Significant Publications

1. Popovics-Tóth N., Rávai B., Tajti Á., Varga B., Bagi P., Perdih F., Szabó P.T., Hackler L., Puskás L.G., Bálint E.\* Three-component synthesis, utilization and biological activity of phosphinoyl-functionalized isoindolinones. *Org. Biomol. Chem.*, 2021, 19, 8754–8760. IF: 3.890. Independent citations: 1.
2. Tajti Á., Tóth N., Rávai B., Csontos I., Szabó P.T., Bálint E.\* Study on the microwave-assisted batch and continuous flow synthesis of N-alkyl-isoindolin-1-one-3-phosphonates by a special Kabachnik–Fields condensation. *Molecules*, 2020, 25, 3307. IF: 4.411. Independent citations: 9.
3. Tripolszky A., Tóth E., Szabó P.T., Hackler L., Kari B., Puskás L.G., Bálint E.\* Synthesis and in vitro cytotoxicity and antibacterial activity of novel 1,2,3-triazol-5-yl-phosphonates. *Molecules*, 2020, 25, 2643. IF: 4.411. Independent citations: 6.
4. Bálint E.\*, Tajti Á., Tripolszky A., Keglevich G. Synthesis of platinum, palladium and rhodium complexes of  $\alpha$ -aminophosphine ligands. *Dalton Trans.*, 2018, 47, 4755–4778. IF: 4.052. Independent citations: 20.
5. Mátravölgyi B., Hergert T., Bálint E., Bagi P., Faigl F. Access to fluorazones by intramolecular dehydrative cyclization of aromatic tertiary amides: A synthetic and mechanistic study. *J. Org. Chem.*, 2018, 83, 2282–2292. IF: 4.745. Independent citations: 16.
6. Bálint E.\*, Tajti Á., Ádám A., Csontos I., Karaghiosoff K., Czugler M., Ábrányi-Balogh P., Keglevich G. The synthesis of  $\alpha$ -aryl- $\alpha$ -aminophosphonates and  $\alpha$ -aryl- $\alpha$ -aminophosphine oxides by the microwave-assisted Pudovik reaction. *Beilstein J. Org. Chem.*, 2017, 13, 76–86. IF: 2.330. Independent citations: 31.
7. Keglevich G., Bálint E. The Kabachnik-Fields reaction: mechanism and synthetic use. *Molecules*, 2012, 17, 12821–12835. IF: 2.428. Independent citations: 208.

### Publication Summary (as of 2023)

- 78 papers in international peer-reviewed journals (75 with impact factor)
- 3 Hungarian papers, 2 non-scientific papers, 5 international book chapters
- 26 conference proceedings; 45 scientific symposia since 2008

- Total impact factor: 149.74
- Number of independent citations: 849
- Number of papers as first author: 29; as last author: 21

Budapest, January 2023