

PERSONAL INFORMATION



Zoltán TÖRÖK

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✉ Zoltan.torok@ubbcluj.ro

Sex Male | Date of birth 12/04/1982 | Nationality Romanian, Hungarian

WORK EXPERIENCE

2020 - present

Associate Professor

School of Environmental Science and Engineering, Babes-Bolyai University Cluj-Napoca

- Risk assessment and disaster management
- Chemical reactions engineering

Business or sector Education

2015 - present

Manager at ISUMADECIP

Research Institute for Sustainability and Disaster Management based on High Performance Computing, Babes-Bolyai University Cluj-Napoca

- Manager
- Head of Technological Disaster Management Lab

Business or sector Research and Education

2014 - 2017

Researcher III

Research Center for Disaster Management, Babes-Bolyai University Cluj-Napoca

- Technological disaster management
- Modeling and simulation of chemical accidents
- Atmospheric dispersion modeling

Business or sector Research

2011 - 2019

Assistant Professor

School of Environmental Science and Engineering, Babes-Bolyai University Cluj-Napoca

- Risk assessment and disaster management
- Chemical reactions engineering

Business or sector Education

2009 - present

Consultant

- Risk assessment for Seveso Industry
- Modeling and simulation of chemical accidents
- Atmospheric dispersion modeling

Business or sector Environmental consultancy

2009 - 2014

Research Assistant

Research Center for Disaster Management, Babes-Bolyai University Cluj-Napoca

- Technological disaster management
- Modeling and simulation of chemical accidents
- Atmospheric dispersion modeling

Business or sector Research

2006 - 2009

Chemical Engineer

S.C. Ocon Ecorisc S.R.L., Turda (101 Dr. Ion Rațiu St., www.oconecorisc.ro)

- Technological disaster management
- Modeling and simulation of chemical accidents
- Atmospheric dispersion modeling

Business or sector Environmental consultancy

EDUCATION AND TRAINING

- 2014 - 2015 **Postdoctoral position**
 Research Center for Disaster Management, Babes-Bolyai University Cluj-Napoca
 - Modelling of ammonium nitrate explosions and determination of TNT equivalency
- 2006 - 2010 **PhD. degree in Chemistry**
 Doctoral School of Environmental Science and Engineering, Main Fiels: Chemistry, Babes-Bolyai University Cluj-Napoca
 - Quantitative risk assessment of chemical accidents
- 2005 - 2006 **Master of science degree**
 School of Environmental Science and Engineering, Babes-Bolyai University Cluj-Napoca
 - MSc. in Risk assessment and Environmental Security
- 2000 - 2005 **Chemical engineering**
 School of Chemistry and Chemical Engineering, Babes-Bolyai University Cluj-Napoca
 - Chemical engineer, Informatics of chemical systems
- 1996 - 2000 **High School**
 „Tamási Áron” theoretical high school, Odorheiu Secuiesc
 - Chemistry and Biology profile

PERSONAL SKILLS

Mother tongue(s) Hungarian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C1	C1	C1	C1
ALPHA certificate, Babes-Bolyai University					
Romanian	C2	C2	C2	C2	C2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills ▪ good communication skills gained through my experience as manager and assistant professor

Organisational / managerial skills ▪ leadership – manager of ISUMADECIP
 ▪ departmental Erasmus coordinator between 2012-2017.

Job-related skills ▪ good IT skills
 ▪ modelling and simulation of chemical accidents
 ▪ air dispersion modeling

Driving licence B

ADDITIONAL INFORMATION

Trainings and Workshop

1. Organizer of Training of trainers Workshop within the project: "Capacity development to improve safety conditions of tailings management facilities in the Danube River Basin – Phase I: North-Eastern Danube countries", 1-4 October 2019, Cluj-Napoca, Romania.
2. European Union Civil Protection Exercise EUMODEX – EUCPT member, 24-29 March 2019, Florence, Italy.
3. European Union Civil Protection Exercise EUMODEX – Role player EUCPT, 6-11 April 2019, Cres, Croatia.
4. Invited Lecturer: 12th block course on "Towards Climate Resilience", Organized by DIMTEC – The Free State University and UN-University, 11-15 February 2019 – Cape Town, South Africa.
5. Advisory Board Member: International project "Assistance in safety improvement of TMFs in Armenia and Georgia", 22-25 May 2018 and 3-7 September 2018.
6. European Union Civil Protection Exercise EUMODEX – Technical Assistance and Support Team Member, January 2018, Tinglev, Denmark.
7. European Union Civil Protection Exercise EUMODEX – Technical Assistance and Support Team Coordinator, October 2017, Lubniewice, Poland.
8. European Union Civil Protection Exercise EUMODEX – Technical Assistance and Support Team Coordinator, June 2017, Negotino, Macedonia.
9. Operational Management Training - European Civil Protection Mechanism, 19-26 May, 2017, Dublin, Ireland.
10. Invited Lecturer: 10th block course on "Towards Climate Resilience", Organized by DIMTEC – The Free State University and UN-University, 13-24 February 2017 - Bloemfontein, South Africa.
11. European Union Civil Protection Exercise EUMODEX – Exercise control member, March 2017, Timisoara, Romania.
12. Invited International Expert: International project "Raising Knowledge among Students and Teachers on Tailings Safety and its Legislative Review in Ukraine", November 2016, Dnipro, Ukraine.
13. CMI - European Civil Protection Mechanism Introductory Course, 29.05-03.06, Rome, Italy.
14. European Union Civil Protection Exercise EUMODEX – Technical Assistance and Support Team member, March 2016, Montana, Bulgaria.
15. Invited International Expert: International Summer school on "Aspects of Risk Management and Ensuring Environmental Safety in Industrial Enterprises", Perm, Russia, 29 September – 4 October 2014, Organized by National Technical University of Perm and Federal Environmental Agency of Germany.
16. Invited International Expert: Steering Committee Meeting of the International Project "Improving the safety of industrial Tailings Management Facilities based on the example of Ukrainian facilities", Ivano-Frankivsk, Ukraine, 04-07 November 2014.
17. Training - Quantitative risk assessment in the process industries, 06-10 Mai 2013, CK-Trikolor, Budapest, Hungary.
18. International Workshop on „Emergency Management Situations”, 13-14 March 2008, Cluj-Napoca, Organized by TIEMS (The International Emergency Management Society) and CCMD (Research Center for Disaster Management – Universitatea Babeş-Bolyai).
19. Invited Lecturer: Workshop on Technological Risk Assessment in the context of SEVESO Directives, 30 Mai – 1 June 2012, Sinaia, Romania.
20. Trainer of Trainers Course on Disaster Risk Reduction, Organized by DPPI (Disaster Preparedness and Prevention Initiative in South East Europe) 2-7 April 2011, Sofia, Bulgaria.
21. Emergency Situations Management” Workshop, 19-21 October 2008, Lepuş, Romania – Organized by CN-APELL and IGSU (General Inspectorate for Emergency Situations)
22. Training of Trainers in Environmental Safety Management” Workshop , 1-4 August 2006, Baia-Mare, Romania, Organized by DPPI (Disaster Preparedness and Prevention Initiative in South East Europe), CCMD (Research Center for Disaster Management – Universitatea Babeş-Bolyai) and IGSU (General Inspectorate for Emergency Situations).

Memberships

Member of the Romanian Environmental Association: Seveso risks assessment expert

Voluntary member in CN-APELL RO Foundation since 2015.

Area of activities:

- Coordination of Technical Assistance and Support Team (APELL-TAST) in European Civil Protection Exercises
- Working on projects and proposals

Scientific papers

1. Smical, I., Muntean, A., Micle, V., Török, Z., 2019, Study regarding the presence of some heavy metals (chromium, copper, manganese and zinc) in the green waste compost, *Studia Universitatis Babeş-Bolyai Chemia*, LXIV, 1, p. 63-78.
2. Török, Z., Petrescu-Mag, R.-M., Mereuță, A., Maloş C.-V., Arghiuş V., Ozunu, A., Analysis of territorial compatibility for Seveso-type sites using different risk assessment methods and GIS technique, *Land Use Policy*, <https://doi.org/10.1016/j.landusepol.2019.02.037>.

3. Kovacs, A., Bican-Brişan N., Maloş, C., Török, Z., Botezan, C., Ozunu, A., 2018, NaTech risk assessment at a gas exploitation well in Romania, *Journal of Environmental Protection and Ecology*, vol. 19(2), pp. 656-666.
4. Ozunu A., Mereuta A., Török Z., Literat. L., 2017, A national hazard analysis and mapping for Seveso establishments, *Journal of Engineering Sciences and Innovation*, Vol.2, Issue 3, pg. 93-102.
5. Muntean A., Smical I., Török Z., 2017, Validation of an alternative method for Total Nitrogen analysis in water samples, *Studia Universitatis Babeş-Bolyai Chemia*, LXII, 1, pp. 101-110.
6. Radovici A – T., Roman E., Török Z., Ozunu A., 2016, A risk assessment study for local critical infrastructures used in hazmat transportation, *Studia Universitatis Babeş-Bolyai Chemia*, vol.3, pp. 379-389.
7. Smical I., Muntean A., Török Z., 2016, Human Health Risk Associated with the Transfer of Heavy Metals into the Trophic Chain by Cattle Grazing on the Area in the Vicinity of the Tailing Ponds in the East of Baia Mare City, Romania, *Studia Universitatis Babeş-Bolyai Chemia*, vol.2, pp. 89-102.
8. Smical I., Muntean A., Török Z., Pop E., 2016, Environmental risks related to the presence of the CRT glass in the non-compliance municipal solid waste landfill, *Ecoterra* 13(4), pg. 46-51.
9. Török Z., Ozunu A., 2015, Hazardous properties of ammonium nitrate and modeling of explosions using TNT equivalency, *Environmental Engineering and Management Journal*, Vol.14/11, pp. 2671-2678.
10. Torok Zoltan, KOVACS Larisa - Alexandra, Ozunu Alexandru, 2015, Ammonium Nitrate explosions. Case study: the Mihăileşti accident (2004), Romania, *Ecoterra*, 56-60.
11. KOVACS Larisa - Alexandra, Brisan Nicoleta-Sanda, Malos Cristian-Valeriu, Torok Zoltan, Ozunu Alexandru, 2015, Prerequisites of a NaTech event at a production gas well in Romania, *Ecoterra*, 36-43.
12. Crăciun I., Török Z., Ozunu A., 2015, Comparative analysis of individual risk using different Probit functions in estimating heat radiation consequences, *AES BIOFLUX*, 7/2, pp. 223-229.
13. Ştefănie H.I., Ajtai N., Botezan C., Ţoancă F., Török Z., Ozunu A., 2015, Detection of a desert dust intrusion over Cluj-Napoca, Romania using an elastic backscatter LIDAR system, *Ecoterra*, 12(2), pp. 50-55.
14. Gheorghiu A.-D., Török Z., Ozunu A., Antonioni G., Cozzani V., 2014, Comparative Analysis of Technological and Natech Risk for two Petroleum Products Tanks Located in a Seismic Area, *Environmental Engineering and Management Journal*, Vol.13/8, pp. 1887-1892.
15. Gheorghiu A.-D., Török Z., Ozunu A., Antonioni G., Cozzani V., 2014, NaTech Risk Analysis in the Context of Land Use Planning. Case Study: Petroleum Products Storage Tank Farm Next to a Residential Area, *Chemical Engineering Transaction*, Vol. 36, pp.439-444.
16. Roba C., Ştefănie H., Török Z., Kovacs M., Roşu C., Ozunu A., 2014, Determination of volatile organic compounds and particulate matter levels in an urban area from Romania, *Environmental Engineering and Management Journal*, Vol.13/9, pp. 2261-2265.
17. Modoi O.-C., Roba C., Török Z., Ozunu A., 2014, Environmental risks due to heavy metal pollution of water resulted from mining wastes in NW Romania, *Environmental Engineering and Management Journal*, Vol.13/9, pp. 2325-2336.
18. Gheorghiu A.-D., Török Z., Ozunu A., 2013, How Can Existing Risk Assessment Methodologies Be Used in a Systematic Manner, in the Extractive Mining Industry? *Journal of Environmental Protection and Ecology*, 14/4, 1597 – 1607.
19. Stefanescu Niculina Lucrina, Torok Zoltan, Senzaconi Francisc - Emil, Ozunu Alexandru, 2013, Quantitative Fire Risk Assessment Procedure at Pesticide Storage Facilities in Romania, *Environmental Security Assessment and Management of Obsolete Pesticides in Southeast Europe*, NATO Science for Peace and Security Series C: Environmental Security, 249-256.
20. Deaconu L.-T., Ajtai N., Török Z., Ozunu A., 2013, Sulphur dioxide emissions modeling and monitoring, originating from a large combustion power plant, *AES BIOFLUX* 5(3): 141-147.
21. OLAH (cas. VASILE) Alexandrina – Silvia, Torok Zoltan, Stezar Ileana - Codruta, Ozunu Alexandru, 2013, Soil remediation comparative analysis on two historically contaminated industrial sites in Romania, *Advances in Environmental Sciences – AES BIOFLUX*, 178-188.
22. Nicolae AJTAI, Zoltán TÖRÖK, Alexandru OZUNU, 2012, Air Quality Modelling of SO₂ Emissions Associated to Metallurgical Processes, *Studia Universitas Babeş – Bolyai, seria Chemia*, LVII, 1, p 57-66.
23. Török Z., Ozunu A., Cordoş R., 2011, Chemical risk analysis for land-use planning. I. storage and handling of flammable materials, *Environmental Engineering and Management Journal*, Vol.10, No. 1, 81-88.
24. Zoltán TÖRÖK, Nicolae AJTAI, Adrian T. TURCU, Alexandru OZUNU, 2011, Comparative consequence analysis of the BLEVE phenomena in the context on Land Use Planning; Case study: The Feyzin accident, *Process Safety and Environmental Protection*, 89, pp. 1-7.
25. Stezar I. – C., Modoi C., Török Z., Ajtai N., Cosara V., Senzaconi F. – E., Ozunu A., Gheorghiu A. – D., 2011, Preliminary investigation and risk assessment of contamination on an industrial site in Maramures county, *Environmental Engineering and Management Journal*, Vol.10, pp. 65-73.
26. Mihaiescu Radu, Mihaiescu Tania, Ajtai Nicolae, Torok Zoltan, Ozunu Alexandru, 2011, Air quality modelling as a tool used in selecting technological alternatives for developing a new abrasive facility, *Advances in Environmental Sciences – AES BIOFLUX*, 123-128.
27. Torok Zoltan, Ozunu Alexandru, 2010, Chemical risk assessment for storage of hazardous materials in the context of Land Use Planning, *Advances in Environmental Sciences – AES BIOFLUX*, 33-56.
28. Zoltán TÖRÖK, Nicolae AJTAI, Alexandru OZUNU, 2009, Chemical Risk Area Estimation as a Tool for Efficient Emergency Planning, *Studia Universitatis Babeş-Bolyai Chemia*, vol.1, pp. 49-59. +
29. Ozunu Alexandru, Torok Zoltan, Cosara Viorel, Cordos Emil, 2008, Vulnerability Mitigation and Risk Assessment of Technological Disaster, *NATO Science for Peace and Security Series, E: Human and Societal Dynamics*, 177-186
30. Török Z., Roman E., Ştefănescu Lucrina, Ozunu A., 2014. The Significance of Natech Risk Assessment in the Context of SEVESO Directives, *Proceedings of the 7th International Conference “Crisis Management Days”, 22-23 May 2014, Zagreb, Croatia*, pp. 1295-1306.
31. Augusta-Diana Crisan, Alexandru Ozunu, Zoltan Torok, Alexandru Vana, 2011, Vulnerability of critical infrastructure to natural

- hazards. Case study: Fire at hexane tank park damaged by earthquake, Geophysical Research Abstracts, Vol. 13, EGU2011, p. 3035.
32. Roșu, C., Costan, C., Arghiuș, V., Manciuța, D., Török, Z., Quality of groundwater in Feleacu village, Cluj County (Romania) and its suitability for domestic and irrigation purpose, Conferința națională cu participare internațională: Environment & Progress 2009 Environment – Research, Protection and Management 5- 8 November 2009 Cluj-Napoca, Environment & Progress 15/2010.
 33. Roșu, C., Costin, D., Costan, C., Török, Z., Clasificarea diverselor sortimente de apă îmbuteliate în România, Environment & Progress 2010, nr. 14, pg. 231-236.
 34. Török, Z., Roman, E., Costan, Camelia, Proorocu, M., Ozunu, Al., (2006), Emisii accidentale de substanțe periculoase, în Implementation of the Kyoto Protocol and the European Union Directives on Emission Trading in Romania, Editori: Marian Proorocu, Alexandru Ozunu, Editura Accent, Cluj-Napoca, ISBN 973-8915-25-2, pag. 99 – 109.

Projects

1. International Project “Capacity development to improve safety conditions of tailings management facilities in the Danube River Basin – Phase I: North-Eastern Danube countries”, project implementation period 2019-2020, financed by the German Ministry of Environment, budget UBB: 96442 Euro – function: **UBB partner responsible**.
2. International Project “CODE VDIC - Common Development of Volunteer Disaster Intervention Capability” HUSKROUA ENI CBC Programme 2014-2020, project implementation period: 2019-2021, budget UBB: 156034,05 Euro - function: **UBB partner responsible**.
3. National Project “RORISK – National Risk Assessment of Disasters”, founded by POCA Programme, budget UBB: 2821090 lei, – function: **team member, responsible for SEVESO risks**.
4. Research project “Dispersion analysis of pollutant emissions into the atmosphere, soil and groundwater in the area of Romaltyn Mining site and beyond the Romanian border”. nr.12/25.03.2014 – financed by S.C. Romaltyn Mining S.R.L., project implementation period: 2014-2015, budget UBB: 18800 USD + TVA – function: **director**.
5. International Project „Romanian Atmospheric Research 3D Observatory – RADO”, CNMP/ESTROM, project implementation period: 2009-2010, buget UBB: 229040 Euro – function: **project team member**.
6. National Project „RESOLMET - Tehnologie inovativa de remediere a solurilor contaminate prin activitățile specifice industriei metalurgice”, PNCDI II – Programul 4: PARTENERIATE IN DOMENIILE PRIORITARE, Nr. contract: 32161/2008, project implementation period: 2009-2012, buget UBB: 260.000 lei - function: **project team member**.
7. National Project “DENATEH - Reducerea vulnerabilității și combaterea consecințelor DEzastrelor NATurale și TEHnologice, în sprijinul comunităților locale”, CEEX Programme, project implementation period: 2006 – 2008, buget UBB: 1.500.000 lei - function: **project team member**.