**Europass**
# Curriculum Vitae

## Personal information

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| First name / Surname | **Victor BOCOŞ-BINŢINŢAN** |
| Address | Faculty of Environmental Science and Engineering, Str. Fântânele nr. 30, 400294 Cluj-Napoca, Romania |
| Nationality | Romanian |

## Work experience

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| Period | ***October 2010 – to date (September 2024)*** |
| Occupation or position held | **Associate Professor (Mar. 2013 – to date)**<br>**Lecturer (Oct. 2010 – Feb. 2013)**<br>**permanent & full-time position**<br>Head of Department (HoD) for Department of Environmental Analysis & Engineering – from March 2012 to February 2016. |
| Main activities and responsibilities | Teaching and research activities, focused onto analysis and characterization of chemicals using instrumental methods (spectrometric and chromatographic methods).<br>University management (HoD specific activities) between 2012 and 2016.<br>Coordinator of the master program ***Environmental Quality and Energy Sources*** (since 2013). |
| Name and address of employer | **Babeş-Bolyai University Cluj-Napoca, Faculty of Environmental Science and Engineering**, Department of Environmental Analysis and Engineering<br>Fântânele Street no. 30, 400294, Cluj-Napoca, Romania |
| Type of business or sector | Public University |

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|---|---|
| Period | ***May 2008 – September 2010*** |
| Occupation or position held | **Post-Doctoral Research Associate (PDRA)**<br>**fixed term & full-time position** |
| Main activities and responsibilities | Main assignment: Developing labelling technologies for goods with custom value, using sensitive spectrometric techniques based on ion mobility. Participation in other projects.<br>Supervisor: Prof. Dr. C.L. Paul Thomas |
| Name and address of employer | **Loughborough University, Faculty of Science, Department of Chemistry**<br>Ashby Road, Loughborough, Leicestershire LE11 3TU, United Kingdom |
| Type of business or sector | Public University |

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|---|---|
| Period | ***February 2005 – March 2008*** |
| Occupation or position held | **Lecturer**<br>**permanent & full-time position** |
| Main activities and responsibilities | Teaching and research activities, with emphasis on characterization of chemical pollutants using instrumental methods (spectrometric and chromatographic methods).<br>Coordination of 2 research grants – for consortium's member BBU (Babes-Bolyai University) |
| Name and address of employer | **Babeş-Bolyai University Cluj-Napoca, Faculty of Environmental Science and Engineering**, Department of Environmental Analysis and Engineering<br>Fântânele Street no. 30, 400294, Cluj-Napoca, Romania |
| Type of business or sector | Public University |

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|---|---|
| Period | ***October 2002 – December 2003*** |
| Occupation or position held | **Research Scientist – R&D Department**<br>**fixed term & full-time position** |
| Main activities and responsibilities | Development and testing of new miniaturized ion mobility spectrometric cells & instrumentation and related applications.<br>Supervisors: Dr. Jörg-Ingo Baumbach; Dr. Stefanie Sielemann |
| Name and address of employer | **G.A.S. (Gesellschaft für Analytische Sensorsysteme) mbH**<br>Otto-Hahn-Str. 15, Dortmund, DE-44227, Germany |
| Type of business or sector | Private Company |

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|---|---|
| Period | ***February 1992 – September 2002 & December 2003 – December 2004*** |
| Occupation or position held | **Senior Research Scientist – Chemist**<br>**permanent & full-time position** |
| Main activities and responsibilities | Various research grants, most of them focused on trace detection of toxic gases and controlled substances using instrumental techniques. |
| Name and address of employer | **INCDO INOE-2000 [National R&D Institute for Optoelectronics Bucharest], Branch ICIA (Research Institute for Analytical Instrumentation) Cluj-Napoca**<br>Donath Street no. 67, 400293 Cluj-Napoca, Romania |
| Type of business or sector | Public Research Institute |

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|---|---|
| Period | ***September 1991 – January 1992*** |
| Occupation or position held | **Teacher of Chemistry & Physics**<br>**permanent & full-time position** |
| Main activities and responsibilities | Teaching related activities: lesson plans, thematic units, evaluation etc. |
| Name and address of employer | **School No. 11 Cluj-Napoca**<br>Mogoşoaia Street No. 6, Cluj-Napoca, Romania |
| Type of business or sector | Public School |

## Education and training

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| Period | ***May 2008 – September 2010*** |
| Title of qualification awarded | **Post-doctoral stage** |
| Principal subjects/occupational skills covered | Contraband detection – using advanced trace detection techniques, including differential mobility spectrometry DMS, hyphenated GC-DMS, and aspiration-type IMS.<br>Trapped human detection by sensing their chemical signatures.<br>Discrimination of bacterial strains.<br>Supervisor: Prof. Dr. C.L. Paul Thomas |
| Name and type of organization providing education and training | **Loughborough University, Faculty of Science, Department of Chemistry, Centre for Analytical Science**<br>Ashby Road, Loughborough, LE11 3TU, Leicestershire, United Kingdom |
| Period | ***July 1993 – June 2000*** |
| Title of qualification awarded | **Doctoral degree in Chemistry; distinction *"Cum Laude"*** |
| Principal subjects/occupational skills covered | Title of the PhD Thesis: ***"Studies on phosgene and chlorine by ion mobility spectrometry and mass spectrometry"***<br>(the first Romanian PhD thesis in the IMS field) |
| Name and type of organization providing education and training | **Babeş-Bolyai University (Cluj-Napoca, Romania)** |
| Period | ***February 1999 – May 1999*** |
| Title of qualification awarded | **Pre-doctoral stage** |
| Principal subjects/occupational skills covered | Training in ion mobility spectrometry (IMS) and hyphenated technique IMS-MS<br>Supervisors: Dr. C.L. Paul Thomas from DIAS Manchester and Dr. Alan H. Brittain from Graseby Dynamics Ltd. |
| Name and type of organization providing education and training | **University of Manchester Institute of Science and Technology (UMIST)**, Department of Instrumentation and Analytical Science (DIAS), Sackville Street, Manchester M1 3BB, United Kingdom |
| Period | ***September 1986 – June 1991*** |
| Title of qualification awarded | **Bachelor degree – Long-term higher education (5 years): *Diploma of Merit* (valedictorian – the highest graduation rank: 9,90 / 10)** |
| Principal subjects/occupational skills covered | Chemistry and Physics |
| Name and type of organization providing education and training | **Babeş-Bolyai University (Cluj-Napoca, Romania)**,<br>Faculty of Chemistry and Industrial Chemistry |
| Period | ***September 1981 – June 1985*** |
| Title of qualification awarded | **Baccalaureate Diploma** |
| Principal subjects/occupational skills covered | Mathematics and Physics |
| Name and type of organization providing education and training | **High School "Iacob Mureşianu", Blaj**, Alba county, Romania |

## Personal skills and competences

Mother tongue(s): **Romanian**

| Other language(s) self-assessment | ***Understanding*** | | | | ***Speaking*** | | | | ***Writing*** | |
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| *European level (*)* | Listening | | Reading | | Spoken interaction | | Spoken production | | Written production | |
| **English** | C2 | Experienced user | C2 | Experienced user | C2 | Experienced user | C2 | Experienced user | C2 | Experienced user |
| **French** | C1 | Proficient user | C1 | Proficient user | C1 | Proficient user | C1 | Proficient user | C1 | Proficient user |
| **German** | A2 | Basic user | A2 | Basic user | A2 | Basic user | A2 | Basic user | A2 | Basic user |

*(*) Common European Framework of Reference for Languages*

Organizational skills and competences

Experienced in independent organizing of research activity.
Highly oriented towards problem solving.
Strong initiative in developing & implementing new work tools and methodologies and in increasing efficiency and quality of work, such as: creating dedicated literature databases; designing and building various systems and devices related to trace detection of chemicals (preconcentrators; test-atmosphere generators; thermo-desorption units).
Equal expertise in ion mobility spectrometry IMS and its related techniques (IMS-MS; GC-IMS; DMS; GC-DMS) – with emphasis on contraband detection, industrial hygiene, detection of controlled substances, sensing/discrimination of microorganisms, etc.
Capacity of mentoring younger researchers and students.
Preparation of detailed and costed grant-application submissions.

Technical skills and competences

Ability in using a wide range of laboratory equipment.
Experienced in operating, testing and calibrating a wide range of IMS devices, both commercial units (manufactured by: Graseby / Smiths Detection U.K.; G.A.S. mbH Dortmund; Environics Oy Finland; I.U.T. mbH Berlin, Germany; Bruker Daltonics, Leipzig, Germany) and prototype/breadboard systems (made by: Sionex Corp., USA; Environics Oy, Finland; G.A.S. mbH Dortmund).
Capability of safely handling highly toxic materials.
Preparation of standard atmospheres by using a wide range of both static and dynamic methods.

Social skills and competences

Used to working in multidisciplinary and multi-national teams, with a significant component of independent activity.
Great adaptability to new socio-cultural environments and work demands, proven by those ca. 4 years of experience of working abroad, within both public and private entities.
Highly developed spoken and written communication abilities, gathered through teaching, writing, and editing papers, projects, technical reports, etc.
Very good communication skills, together with empathy and with a good & healthy sense of humour.

Computer skills and competences

Microsoft Office
Various dedicated instrument software

Other competences

Driver license – Cat. B

**Additional information**

## REFERENCES:

1. Dr. Alan H. Brittain, former Research Group Manager at Graseby Dynamics Ltd., UK; alan.brittain33@gmail.com .
2. Prof. Dr. C.L. Paul Thomas, Loughborough University, Loughborough, Leicestershire, United Kingdom; C.L.P.Thomas@lboro.ac.uk .
3. Dr. Jörg-Ingo Baumbach, Department of Applied Chemistry, Hochschule Reutlingen, Reutlingen, Germany; joerg.baumbach@reutlingen-university.de .
4. Prof. Dr. Gary Alan Eiceman, New Mexico State University, USA; geiceman@nmsu.edu .

## Research Grants (selection):

1992–1996: ***"Paper-tape analyzers for toxic gases"***, funded by the Romanian Ministry of Research; member of the research team

1993–1998: ***"Investigations and advanced mobile technologies for detecting narcotics"***, funded by the Romanian Ministry of Research; project leader 1993-1995

1997–1999: ***"Complex equipment for exploring haemostasis"***, funded by the Romanian Ministry of Research; member of the research team

1998–1999: ***"Opto-spectral systems for monitoring the principal pollutant factors within the environment"***, funded by the Romanian Ministry of Research; member of the research team

2005–2007: ***"Ultrasensitive monitoring of pollutants based on tandem systems using non-conventional detectors"*** (acronym: MONUPOL – CEEX No. 615/2005), funded by Romanian Agency for Science and Technology; project leader for consortium partner Babeş-Bolyai University. http://www.itim-cj.ro/PNCDI/CUNA/monupol/index.html .

2007–2010: ***"Detection and identification of dangerous substances using ion mobility spectrometry coupled with mass spectrometry"*** (acronym: MOBSPEC – PN2 No. 81-023/2007), funded by Romanian Agency for Science and Technology; project leader for consortium partner Babeş-Bolyai University. http://www.itim-cj.ro/PNCDI/MOBSPEC%28CCUNA%29/engleza.htm

2008–2010: European FP7 Project ***"Second-Generation Locator for Urban Search and Rescue Operations"*** (SGL for USaR, No. 217967) – funded by the EU; member of the Loughborough University's research team (leader: Prof. C.L. Paul Thomas).

http://cordis.europa.eu/search/index.cfm?fuseaction=proj.document&PJ_RCN=10222914

## Scientific activity – a synopsis:

Materialized in: 2 patents; 3 books published in Romania; 32 papers published in ISI journals; 4 papers published abroad (Springer and IOP journals); 24 papers published in Romania; 32 communications & posters (of which 15 abroad).

ResearcherID profile: **C-4172-2011**.
Web of Science profile: https://www.webofscience.com/wos/author/rid/C-4172-2011 .
ORCID profile: https://orcid.org/0000-0003-0836-1049
Profile on ResearchGate: https://www.researchgate.net/profile/Victor_Bocos-Bintintan
Profile on Google Scholar: https://scholar.google.com/citations?user=LjdMHFMAAAAJ&hl=ro&oi=ao
LinkedIn profile: https://www.linkedin.com/in/victor-bocos-bintintan-29280748/

## Affiliations:

Associate Member of ***Royal Society of Chemistry*** (AMRSC), since 2010

Member of the ***Romanian Society of Chemistry***, since 2015

## Research interests:

Equal expertise in:

- time-of-flight IMS (ion mobility spectrometry) [instrumentation made by: Graseby Dynamics, UK; G.A.S. mbH Dortmund, Germany; Bruker Daltonics, Leipzig, Germany; I.U.T. mbH, Berlin, Germany; Smiths Detection, UK] and hyphenated techniques IMS/MS [Graseby Dynamics] & GC/IMS [G.A.S. mbH Dortmund]
- aspiration-type IMS (a-IMS): ChemPro instruments [Environics Oy, Finland]
- DMS (differential mobility spectrometry) and TD-GC/DMS [both from Sionex Corp., USA]
- mass spectrometry MS
- gas chromatography GC
- photoionization detection PID.

This expertise is based on a series of 3 research stages abroad, with a total duration of ca. 4 years and is being corroborated to the professional experience as a researcher in Romania – over 20 years. To the best of my knowledge, there is no other Romanian researcher with such a scientific and technical background in the above-mentioned fields.

Principal research interests:

- trace detection of chemicals
- generation of test atmospheres with low analyte concentrations
- advanced spectrometric techniques for detecting chemicals at ultra-trace levels, based on ionization at atmospheric pressure: ion mobility spectrometry IMS (and the hyphenated techniques IMS/MS and GC/IMS) and its applications; differential mobility spectrometry DMS and tandem GC/DMS; photoionization detection PID
- toxic industrial chemicals TIC and chemical warfare agents CWA (simulants)
- detection of illicit drugs and precursors
- sensing/discriminating of microorganisms by monitoring their volatile biomarkers
- population & critical infrastructure protection.

Additional / secondary research interests:

- breath analysis
- USaR (urban search and rescue) and detecting human trafficking
- toxicology
- pollutants detection
- preconcentration systems and devices
- radiocarbon dating of trees.

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| | **Teaching activity:**<br><br>Research interests and experience were successfully coupled with my teaching activity at Babeș-Bolyai University. Thus, at undergraduate level the courses taught range from *Instrumental analysis in environmental protection* to *Transfer and transformation of pollutants* and *Ecotoxicology*, to name just the most relevant.<br><br>At master level, I have been the coordinator of the master programme ***Environmental Quality and Energy Sources*** (Faculty of Environmental Science & Engineering, BBU) and since 2012 I have introduced in the curriculum two new & original courses: *Modern techniques in trace and ultra-trace analysis of chemicals* (which, to the best of my knowledge, is the unique course in the Romanian higher education that discusses IMS theory, instrumentation and applications!), and *Systems and methods for population protection against highly toxic chemical and biological agents* since 2016 (currently this course is entitled *Population protection against super-toxic chemical agents*).<br>Since 2024 I am coordinating (together with a colleague, Dr. Z. Török) the newest master programme at the Faculty of Environmental Science & Engineering, named ***Environmental Quality, Heath & Security***.<br><br>I have supervised since 2005 ca. 60 Romanian students, at both undergraduate and master level. Also, I have co-supervised a Romanian PhD student, who defended, in 2012, the second doctoral thesis in Romania that has been focused on IMS (discrimination of bacteria using a-IMS) – Dr. Raţiu Ileana-Andreea. |
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***September 2024***

***Dr. Bocoș-Binținan Victor***