

# *Curriculum Vitae*

**Romeo-Julian OLARIU**



**Current affiliation**      <sup>1</sup>"Alexandru Ioan Cuza" University of Iasi, Faculty of Chemistry  
Department of Chemistry, Analytical Chemistry Laboratory  
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Science Studies in the North Eastern Region – CERNESIM, Romania

## **Address**

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## **Personal information**

Nationality:              Romanian  
Place and date of birth: July 10, 1971, Rupea, Romania  
Gender:                    male  
Marital status:          married

## **Education/training**

Habilitation:            03/2016  
28/03/2016 defence of the Habilitation Thesis "Advanced research in environmental analytical chemistry Laboratory and Field Studies", Recognition of the Habilitation degree by the MO No. 3972/07.06.2016. The General Department for Higher Education, Romanian Ministry of Education and Scientific Research

PhD studies:            03/1998-03/2002  
PhD in Atmospheric Chemistry, Research subject: Atmospheric Degradation of Selected Aromatic Hydrocarbons, Department of Physical Chemistry, Bergische Universität Gesamthochschule Wuppertal, Germany, coordinator Prof. Dr. Karl-Heinz Becker. PhD title, „Doktors der Naturwissenschaften” (Dr. Rer. Nat.) emitted by Bergische Universität Gesamthochschule Wuppertal, Germany, from December 14<sup>th</sup> 2001. Recognition of the PhD title proved by the certificate No. . 2922/11.11.2002 emitted by the Romanian Ministry of Education and Scientific Research.

Master studies:        10/1995-06/1996  
Master studies in in Analytical Chemistry and Physical Chemistry - Molecular dynamics and thermodynamics of chemical systems evolution, Alexandru Ioan Cuza University of Iasi, Faculty of Chemistry. Master certificate Serial B No. 0001944 emitted as a result of the dissertation defence undertaken in June 1996. Registered emission of certificate with the indicative 144/28.01.1998.

Bachelor studies:     10/1990-06/1995  
Bachelor in Physical Chemistry, Alexandru Ioan Cuza University of Iasi, Faculty of Chemistry, Romania. Chemist. Bachelor certificate Serial N No. 003745, emitted as a result of the committee decision for the bachelor defence undertaken in June 1995. Registered emission of certificate with the indicative 1020/07.02.1996.

Bacalaureate:         09/1985-06/1989  
Natural Sciences High School, Galati, Romania. Bacalaureate certificate Serial H No. 206104, emitted as a result of the graduation exams undertaken in June 1989. Registered emission of certificate with the indicative 923/03.07.1989.

## Work experience

- 09/2014-present: Professor, PhD, Alexandru Ioan Cuza University of Iasi, Faculty of Chemistry, Department of Chemistry, Analytical Chemistry Laboratory. Teaching and research activities.
- 02/2007-09/2014: Associated professor, PhD, Alexandru Ioan Cuza University of Iasi, Faculty of Chemistry, Department of Chemistry, Analytical Chemistry Laboratory. Teaching and research activities.
- 07/2003-09/2004: Postdoctoral Fellow at Faculdade de Ciencias e Tecnologica Experience Universidade Nova de Lisboa, Portugal. Research Training Network, EU project "Reactive Intermediates Laboratory Studies of Atmospheric Chemistry and Combustion Relevant to." Contract No CT-2000-00006-HPRN..
- 02/2003-02/2007: University Lecturer, PhD, Alexandru Ioan Cuza University of Iasi, Faculty of Chemistry, Department of Chemistry, Analytical Chemistry Laboratory. Teaching and research activities.
- 04/2002-02/2003: Assistant professor, PhD, Alexandru Ioan Cuza University of Iasi, Faculty of Chemistry, Department of Chemistry, Analytical Chemistry Laboratory. Teaching and research activities.
- 03/1998-03/2002: PhD student at Bergische Universität Gesamthochschule Wuppertal, Germany, Physical Chemistry Department. Main research work devoted to laboratory and photo-smog chamber investigation (kinetic and mechanistic investigation on the gas phase atmospheric degradation of organic chemical compounds such as (hydroxy)aromatic. Development of reaction mechanisms for the degradation of gas phase chemicals under photo-oxidative conditions. Long-path spectroanalytic techniques (FTIR) used for the investigation under simulated atmospheric conditions of gaseous organic pollutants in large glass/quartz vessel reactors (1080 L quartz reactor) and outdoor reactors (EUPHORE-chamber). Use of analytical equipments for solar radiation intensity measurements. Use of monitors: CO, NO<sub>x</sub>, O<sub>3</sub>. Equipments for aerosol measurements (counters and scanning mobility particle sizer). Laboratory work activities with students from Bergische Universität Gesamthochschule Wuppertal, Germany.
- 10/1996-02/1998: Assistant, Alexandru Ioan Cuza University of Iasi, Faculty of Chemistry, Department of Chemistry, Analytical Chemistry Laboratory. Teaching and research activities.

## International/national research projects

### Coordinator (director) of international projects

- 1) EUROCHAMP-2020, INTEGRATION OF EUROPEAN SIMULATION CHAMBERS FOR INVESTIGATING ATMOSPHERIC PROCESSES – TOWARDS 2020 AND BEYOND, Period 2016-2020, INFRAIA-1-2016-2017, H2020 Grant Agreement N° 730997. Total Value:110000 EUR
- 2) Contract NATO: ESP.EAP.CLG 982287. Period 2006-2008, PESTICIDES AND ORGANIC NITRATE LEVEL IN NATURAL MATRIXES FROM IASI-ROMANIA. Beneficiar: NATO, under the Environmental Security program. Total Value:10000 EUR.
- 3) Contract de cercetare științifică: EVR1–CT-2001 –40013; Period 2002-2004, IMPROVEMENTS AND ACCESS TO A LARGE SIMULATION CHAMBER (IALSI); Beneficiar:Comunitatea Europeană în cadrul subprogramului: Environment and Sustainable Development; Global Change, Climate and Biodiversity; Total Value: 17500 EUR.
- 4) Project PN-III-P3-3.1-PM-RO-FR-2016-0047, Contract no. 90BM /2017, OZONOLYSIS OF OXYGENATED UNSATURATED COMPOUNDS OF BIOGENIC ORIGIN IN THE ATMOSPHERE: FROM KINETICS TO SECONDARY ORGANIC AEROSOL FORMATION (OzOA).

### Coordinator (director) of national projects

- 1) Project PN-III-P4-ID-PCE-2016-0270, Contract no. 38/2017, OZONOLYSIS AS A FORMATION ROUTE OF SECONDARY ORGANIC AEROSOLS. LABORATORY INVESTIGATIONS ON ENVIRONMENTAL REACTION CHAMBER (OLFA-ROA).
- 2) Project PN-P2.-2.1-PED-2016-0924, Contract no. 78PED/03.01.2017, DEVELOPMENT AND VALIDATION OF A TEMPERATURE REGULATED ENVIRONMENTAL CHAMBER FOR STUDYING ATMOSPHERIC OXIDATION PROCESSES AND MECHANISMS (DEV-TREC).
- 3) Project POSCCE-A2-O2.2.1-2009-4, ID 901, SMIS 13984, Contract no.: 257 / 28.09.2010, INTEGRATED CENTRE OF ENVIRONMENTAL SCIENCE STUDIES IN THE NORTH EAST REGION (of ROMANIA)-CERNESIM. Total Value 28017514.43 Lei.
- 4) Project PN-II-2007-405, Contract no. 9/28.09.2007; INVESTIGATION ON ENVIRONMENTAL RADIONUCLIDE RETENTION ON HETERO-POLIOXO-METALLIC SORBENTS FOR RADIONUCLIDE ANALYSIS BY IONIC CHROMATOGRAPHY. Total Value 826 717 Lei.

### Member of projects funded internationally

- 1) 575254-EPP-1-2016-1-RO-EPPJMO-project Scientific Convergence and Interdisciplinarity in EU Environmental Research (SCIENVIR),

- 2) FP-7/PEOPLE-MERG-CT-2007-203934, Intensive Characterisation of Atmospheric Aerosols in the north-eastern Romania at various Urban Sites (ICAARUS).
- 3) NATO ESP.EAP.CLG.98258/2007, Chemical Composition of Atmospheric Aerosols in the North-Eastern Romania. Environmental Security Through Science.
- 4) Research Training Network, EU project "Laboratory Studies of Reactive Intermediates Relevant to Atmospheric Chemistry and Combustion". Contract No HPRN-CT-2000-00006.
- 5) Effects of the oXidation of Aromatic Compounds in the Troposphere (EXACT): Contract No: EVK4 - CT1999 – 00053.
- 6) "Chemical composition of aerosols" joint research project selected for mobility exchange under the 5th session of the agreement between the Government of Romania and the Government of the Hellenic Republic on Cooperation in Science and Technology No. C18873/28.12.2005.
- 7) "Environmental quality understanding inferred by laboratory investigation of the borne pollutants released by industrial and agricultural activities in a small part of Romania" joint research project selected for mobility exchange under the 15th Italian-Romanian Executive Programme of S&T Co-operation for the period 2006-2008 No. C18002/09.01.2006.

#### **Member of projects funded at national level**

- 1) PN-III-P4-ID-PCE-2016-0299, Contract no. 37/2017, Assessing the Anthropogenic and Biogenic Emissions Impact on Atmospheric Urban Fine Organic Particles in Eastern Romania. Solving the Challenge of the Aerosols Missing Mass as a One Step Forward Tool, (AI-FORECAST)
- 2) Project PN-III-P4-ID-PCE-2016-0807, Contract no. 118/2017 Investigations on atmospheric chemistry of cyclic oxygenated hydrocarbons (IGAC-CYCLO).
- 3) Project PN-III-CERC-CO-PED-2016, Contract no. 118/2017, Atmospheric simulation chamber – new research facility to understand sesquiterpene oxidation (CHARUSO)
- 4) PN-II-RU-TE-2014-4-2461, Studies on the Oxidation of Substituted AROMATIC Compounds under Simulated Atmospheric Conditions (SOS-AROMATIC).
- 5) PN-II-ID-PCE-2011-3-0471, 2011-2014, Evaluation of Volatile Organics in the Lower/Upper Troposphere - their Impact on the Oxidizing, Noxious and Aerosol Influx Capacity in Romania (EVOLUTION-AIR).
- 6) CEEEX- 2113 /2006. Ecological reconstruction by microrremediation of soils degraded by mining activities.
- 7) CEEEX-3089/730. 28.06.2006. Research on the discoloration of dye solutions by new oxidative, microbiological and sorption processes for the rehabilitation and recycling of wastewater from the textile industry.
- 8) INFRAS nr. 210/2.11.2004. Creating an infrastructure for the monitoring and biomonitoring of toxic compounds present in the environment and for monitoring their effect on living organisms. Accreditation of a laboratory for the analysis of heavy metals and persistent organic pollutants (POPs).

#### **Research interest**

##### **Environment Analytical Chemistry**

1. Atmospheric Chemistry.
2. Identification and quantification of organic and inorganic pollutants present in air, water, soil.
3. Reactivity and reaction mechanisms for photochemical processes induced by radical species (OH, NO<sub>3</sub>, etc.) on organic compounds in air and water.
4. Appropriate instrumental techniques (spectroscopic and chromatographic) for the identification and quantification of specific analytes from various natural matrices (air, water, soil, biological matrices)

##### **New materials for decontamination processes**

1. Development and characterisation of materials for solid phase extraction in the form of stationary phases (polyoxometalates) and polymer inclusion membranes

#### **Significant results**

- Publications in ISI quoted journals (peer reviewed process): **59**
- Other publications: **22**
- Contributions at **30** international conferences and **50** national conferences (conferences/oral presentations/poster)
- Books/chapters: **5/2**
- Citations in ISI quoted journals: **800** (self-citation of all authors excluded)
- Hirsch Factor: **12** (self-citation excluded)

#### **Certificated abilities**

1. Certificate AnalyticJena to DIN EN ISO 9001: 200 - multi N / C3100.
2. AnalyticJena certificate to DIN ISO 9001: 2008 - ContrAA700 and novAA350.
3. Certificate no. registration TRRO AK-33-2010 through which TUV Rheinland Romania confirms the participation in the training course "Specialist for management systems of testing and calibration

laboratories", according to the national standard SR EN ISO / CEI 17025: 2005, identical to the European standard EN ISO / IEC 17025: 2005.

4. Certificate no. registration TAR-AK / 69/02/2010 from which TUV Austria Romania confirms the participation in the training course "Internal auditor for testing and calibration laboratories according to ISO 17025: 2005 and ISO 19011: 2002.

#### **Technical skills and competences**

- Expertise in using of FT-IR, Raman, VCD, AAS, UV-vis, Polarography, Conductometry, Ion Chromatography, Gas Chromatography, Liquid Chromatography in various applications (identification, calibration, compound separation).
- Expertise in using in situ long path spectroscopic techniques (FT-IR) for the determination and quantification of gaseous chemical pollutants in reaction chambers suitable for the simulation of the atmosphere. Expertise in use of spectrophotometric techniques (UV-vis), atomic absorption spectroscopic techniques (ContrAA 700 with flame and graphite furnace) for the characterisation of various matrices.
- Expertise in using instruments for aerosol characterisation such as scanning mobility particle sizer analyser.
- Extensive experience in operating large volume quartz indoor photoreactors. Operation of the large volume Teflon outdoor European Photoreactor (EUPHORE, Spain).
- Experience in handling analytical equipment for the measurement of solar radiation, SO<sub>2</sub>, CO, NO<sub>x</sub> and O<sub>3</sub>.
- Experienced user of Software for a wide range of analytical instruments.

#### **Other skills and competences**

##### **Social skills and competences**

- Coordinator of bachelor and master thesis
- Coordinator/co-worker of PhD students research activities
- Lecturing
- Honesty, responsibility, ability to work with deadlines, ability to work in a multidisciplinary and multifunctional team.

##### **Organisational skills and competences**

- Since 2014 coordinator of the INTEGRATED CENTRE OF ENVIRONMENTAL SCIENCE STUDIES IN THE NORTH EAST REGION (of ROMANIA)-**CERNESIM**, a new center established within the "Al. I. Cuza" University of Iasi through the project POSCCE-A2-O2.2.1-2009-4, ID 901, SMIS 13984, Nr. contract: 257 / 28.09.2010, <https://www.erris.gov.ro/cernesim.uaic.ro>.
- Since 2008, the Responsible of Quality of the Instrumental Analysis and Analytical Chemistry Laboratory (LAICA), a laboratory certified by RENAR, trace metal analysis.
- Member in the organising committee of the Faculty of Chemistry Conference, Conference on Forensics.

#### **Scientific skills and competences**

##### **Reviewer for articles published in ISI quoted journals (peer review process)**

Journal of Photochemistry and Photobiology A, Chemosphere, Science of the Total Environment, Environmental Chemistry Letters, Atmospheric Chemistry and Physics, Environmental Chemistry, Environmental Science and Technology

#### **Ability to interpret and communicate scientific data.**

##### **Training for short periods in international laboratories**

- July 2016: Ecole de Mines de Douai, France
- July/August 2015: Ecole de Mines de Douai, France
- July/August 2011: Ecole de Mines de Douai, France
- June/July 2010: Ecole de Mines de Douai, France
- July 2007: Laboratory of Analytical Chemistry, University of Torino, Italy
- July 2006: Laboratory of Analytical Chemistry, University of Torino, Italy

##### **Membership of professional societies**

- Member of the Romanian Chemical Society – since 2005

#### **Language**

- English - reading, writing, speaking –good
- German - reading, writing, speaking - medium

### Teaching activity

Courses and laboratories / seminars held at various specializations within the "Al.I.Cuza" University of Iasi:

- Basics of Analytical Chemistry (Faculty of Chemistry, 1<sup>st</sup> year).
- Instrumental Analysis (Faculty of Chemistry, 2<sup>nd</sup> year).
- Practical skills in instrumental analysis (Faculty of Chemistry, 2<sup>nd</sup> year).
- Chemistry of the Environment (Chemistry Faculty, 2<sup>nd</sup> year Master).
- Chemical Sensors (Chemistry Faculty, 1<sup>st</sup> year Master).
- Methods of analytical chemistry applied in forensic research (Faculty of Law, 1<sup>st</sup> year Master).
- Quality management in chemical analysis. ISO regulations. (Faculty of Chemistry, 2<sup>nd</sup> year Master).
- Chemical Processes in the Atmosphere (Faculty of Physics, 2<sup>nd</sup> year Master).
- Analytical control of biotechnological processes (Faculty of Chemistry, 3<sup>rd</sup> year).
- Atmospheric processes in the gas phase (Faculty of Chemistry, , 2<sup>nd</sup> year Master).
- Analytical Chemistry and Practical Separation in Chemistry (Faculty of Chemistry, 1<sup>st</sup> year).
- Trace analysis (Faculty of Chemistry, 3<sup>rd</sup> year).
- Environmental management and legislation (Faculty of Chemistry, , 2<sup>nd</sup> year Master).
- Environmetrie - chemometry applied in the environmental study (Faculty of Chemistry, 2<sup>nd</sup> year Master).
- Sampling and analytical methodologies for environmental investigation (Faculty of Chemistry, 1<sup>st</sup> year Master).

Romeo-Iulian OLARIU, PhD Habil

