



Europass Curriculum Vitae

Personal information

First name(s) / Surname(s) **Virgolici Marian**

Telephone(s)

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Nationality Romanian

Date of birth 26 March 1980

Gender Male

Work experience

Name and address of employer Horia Hulubei National Institute of Physics and Nuclear Engineering - IFIN HH
30 reactorului Street, Buchrest-Magurele (Romania)

Type of business or sector Research, Development & Innovation

Dates 2013 - 2024

Occupation or position held Deputy Head of IRASM Department from IFIN-HH

Main activities and responsibilities Laboratory development and coordination, Project management, Team leading for analytical method development in Mass Spectrometric and Chromatographic techniques with applications in radiation processing, characterization of composition and impurities in medico-pharmaceutical products, cultural heritage artefacts and other materials

Dates 2022 - 2024

Occupation or position held Project Manager (IFIN-HH coordinator) of 720PED/2022 "BIGAROW" - Bio-Gamma Advanced Reduction and Oxidation for Sustainable Reuse of Water in textile industry, UEFISCDI-PN-III-P2-2.1-PED-2021

Main activities and responsibilities Coordination of IFIN-HH multidisciplinary team for physico-chemical and microbiological tests, effluents decontamination (wastewater from dying industry) by gamma irradiation. Optimization of a combined treatment method BIO-GAMMA, including AORP technology (Advanced Oxidation and Reduction Processes) for decomposition of textile dyes.
<https://www.nipne.ro/proiecte/pn3/68-proiecte.html>

Dates 2014 - 2017

Occupation or position held Project responsible (IFIN-HH counterpart) of PN-II-PT-PCCA-2013-4-1470, Contract No. 265/2014 "PELL AMAR – a name in search of its lost fame"

Main activities and responsibilities Coordination of IFIN-HH multidisciplinary team for physico-chemical and microbiological tests, product sterilization and decontamination by gamma irradiation. ICP-MS testing of elemental composition for a new and improved sapropellic mud extract and elemental impurities limits according with USP and ICH guide for pharmaceutical products or ingredients.
<https://pellamar.com/proiect-cercetare-pell-amar/>

Dates 2010 - 2014

Occupation or position held Principal Investigator IFIN-HH, Romania, for IAEA, CRP No. 1539 – F23029 "Radiation Treatment of Wastewater for Reuse with Particular Focus on Wastewaters Containing Organic Pollutants", country contr. no. 16426 "Extensive use of gas chromatography – mass spectrometry for the characterisation of the effects of radiation treatment on wastewater"

Main activities and responsibilities	GC/MS analytical investigation of fundamental processes for persistent organic pollutants (POPs) degradation by gamma irradiation (as advanced oxidation and reduction processes - AORPs) in wastewaters. https://www-pub.iaea.org/MTCD/Publications/PDF/TE-1855web.pdf
Dates	2012 – 2014
Occupation or position held	<u>Principal Investigator</u> (Project leader) of PN-II-RU-PD-2011-3-0274, Establishing an archaeometrical method for discrimination of Romanite - Romanian amber - by chromatography and mass spectrometry http://chemoamber.wordpress.com/
Main activities and responsibilities	Mass Spectrometry and Chromatography (GC/MS and ICP-MS) method development for archaeological chemistry, fundamental research on fingerprinting / identification of geological and archaeological amber specimens from the European region, with an accent on discriminating Romanite from Baltic ambers.
Dates	2011 →
Occupation or position held	<u>Research Scientist III</u> - Radiation & Analytical Chemistry
Main activities and responsibilities	Mass Spectrometry and Chromatography method development for radiation, environmental and archaeological chemistry; project management; laboratory development (actively involved in the construction and commissioning of a New Laboratory building <Product Qualification for Radiation Processing>; The Physical and Chemical Tests Laboratory occupies 600 m2 and is continuously expanding its infrastructure and fields of expertise)
Dates	2005 - 2011
Occupation or position held	<u>Research Scientist</u> - Radiation Safety and Radiation & Analytical Chemistry
Main activities and responsibilities	Radiation Safety and Radiation & Analytical Chemistry, Level 2 permit of exercising activities in the nuclear field, for operation of Sealed Sources (AASI, 2006-2010); GC-MS analytical method development for detection of irradiated foodstuffs detection; fatty acids methyl esters composition characterisation for prediction of radiolysis products in foodstuffs; screening of volatile organic compounds (VOCs) as radiolysis products for material qualification to gamma irradiation; GC/MS characterisation of archaeological amber artefacts.
Dates	2002 - 2005
Occupation or position held	<u>Assistant Research Scientist</u> - Radiation Safety
Main activities and responsibilities	Radiation Safety, level 1 permit of exercising activities in the nuclear field, complex field. Between 2003 and 2005 was part of the project team PN 03-20 06 05 "Realizarea securitatii radiologice prin zonarea Reactorului Nuclear VVR-S in vederea dezafectarii", which made a preliminary radiological survey of the first Research Nuclear Reactor in Romania (Russian Design, operated for 40 years between 1957-1997). Acquiring training in using radiometrical equipment for fixed contamination detection (Beta-Gamma) and dose rate characterisation for penetrating radiation fields (gamma and neutrons).

Education and training

Dates	2005 - 2011
Title of qualification awarded	PhD
Principal subjects / occupational skills covered	"GC/MS Applications for the Characterization of Irradiated Organic Matrixes"
Name and type of organisation providing education and training	University of Bucharest, Faculty of Chemistry, Analytical Chemistry Department Bucharest (Romania)
Level in national or international classification	6
Dates	2002 - 2004
Title of qualification awarded	M.Sc.
Principal subjects / occupational skills covered	Applied Physical Chemistry and Radiation Chemistry
Name and type of organisation	at University of Bucharest, Faculty of Chemistry, Physical Chemistry Department

providing education and training	Bucharest (Romania)									
Level in national or international classification	5									
Dates	1998 - 2002									
Title of qualification awarded	B.Sc.									
Principal subjects / occupational skills covered	Radiation Chemistry									
Name and type of organisation providing education and training	University of Bucharest, Faculty of Chemistry, Physical Chemistry Department (http://www.chimie.unibuc.ro) Bucharest (Romania)									
Level in national or international classification	5									
Personal skills and competences										
Mother tongue(s)	Romanian									
Other language(s)										
Self-assessment										
European level (*)										
English										
French										
	Understanding				Speaking				Writing	
	Listening		Reading		Spoken interaction		Spoken production			
	C1	Proficient user	C1	Proficient user	B2	Independent user	B2	Independent user	B2	Independent user
	A2	Basic User	A2	Basic User	A2	Basic User	A2	Basic User	A2	Basic User
	(*) Common European Framework of Reference (CEF) level									
Organisational skills and competences	Good ability for team coordination and interdisciplinary work.									
Technical skills and competences	Physico-chemical tests for product qualification to gamma irradiation at IFIN-HH, IRASM Department; Chemical impurities determination in pharmaceutical products at IFIN-HH, IRASM Department; Romanian Ministry of Culture certified Expert in the field of "Conservation of movable Cultural Heritage Artefacts – Physico-Chemical investigations" since 2015; Physico-Chemical investigations for cultural heritage artefacts at IFIN-HH, IRASM Department; Mass Spectrometry and Chromatography analyst through PhD programme & various trainings; Radiation Chemistry through Bachelor, Master programme & various trainings; Radiation Safety training at IFIN-HH									
Computer skills and competences	Software user: AMDIS third party software for GC/MS data analysis; Microsoft Excel for mass spectra, cromatograms and thermograms export to open access formats and advanced data analysis; STATISTICA software for Multivariate Data Analysis; Oracle PL/SQL for spectral and chromatographic data sinchronisation for multivariate data analysis; OriginLab Origin software for data analysis; Autocad software basic user. Office: Microsoft Office (Word, Excel, Access, Power Point) Operating Systems: MS Windows 9X/NT/2000/XP/Vista/7/8/10, MS-DOS, Unix									
Other skills and competences	Membership in: since 2017 Membership in Romanian Chemical Society – Cultural Heritage Section (SRCh, https://www.schr.ro/); since 2009 Users' Group for Mass Spectrometry and Chromatography (MaSC, http://www.mascgroup.org); 2003-2022 International Isotope Society (IIS, https://intl-isotope-soc.org). Expertise in: 2016, 2020 – Radiation Safety Training Course on "Operation of Radiation Sources" for "level 3 permit of exercising activities in the nuclear field": Sealed Sources, Particle Accelerators, IFIN-HH, CPSDN (https://cpsdn.nipne.ro/), Magurele, Ilfov, Romania Since 2015 "Expert in Conservation and Physico-Chemical Investigations; Conservation of Movable Cultural Assets, Certificate No. 604/06.04.2015, granted by the Ministry of Culture of Romania and									

with the approval of the National Commission of Museums and Collections."

Since 2006 "Level 2 permit of exercising activities in the nuclear field", "Radiation Safety in practices with Ionizing Radiation Sources in industry and research" for "Other Applications of Sealed Sources", IFIN-HH's IRASM Facility, Magurele, Ilfov, Romania

Additional information

Training Courses, Workshops, Scientific visits:

2017 – participant at IAEA ME-RER-1017-1704300 Regional Workshop on Techno - commercial Aspects for Setting New Radiation Facilities, Trencin, Slovakia, 13-15 December

Since 2016 – 5th, 6th, 7th Collaborative Materials Exercise (CMX-5, 6, 7) on Nuclear Forensics, IFIN-HH's Research team member for 2 months report (ICP-MS destructive analysis)

2016 – Participant at Radiation Safety Training Course on "Operation of Radiation Sources" for "level 3 permit of exercising activities in the nuclear field", Sealed Sources, Particle Accelerators, IFIN-HH, CPSDN (<https://cpsdn.nipne.ro/>), Magurele, Ilfov, Romania

2016 – participant at "3rd HEPTech Symposium", IFIN-HH, Bucharest, Romania, 19-25 June

2015- "Expert in Conservation and Physico-Chemical Investigations; Conservation of Movable Cultural Assets, Certificate No. 604/06.04.2015, granted by the Ministry of Culture of Romania and with the approval of the National Commission of Museums and Collections."

2014 – participant at IAEA Green chemistry technical meeting, Vienna, Austria, 12-14 June

2011 – 2015 – participant at - 1st, 2nd, 3rd&4th Research Coordination Meeting on IAEA, CRP No. 1539 – F23029 "Radiation Treatment of Wastewater for Reuse with Particular Focus on Wastewaters Containing Organic Pollutants"

2011 – participant at "Regional Workshop on Feasibility Studies for the Establishment of Radiation Processing Facilities", Zalakaros, Hungary, 28 August – 2 September

2011 – participant at "Regional Training Course on demonstration of techniques for cultural heritage protection", Magurele, Romania, 9 – 13 May

2011 – participant at Joint ICTP-IAEA Workshop on Radiation Resistant Polymers, Miramare, Trieste, Italy, 14 – 18 March

2010 – Scientific visit on ICP-HRMS at Norwegian University of Science and Technology (NTNU), Faculty of Natural Sciences and Technology; Department of Chemistry, Trondheim, Norway.

2009 – participant at MaSC Group GCMS Data Treatment Workshop, National Gallery, London, UK (<http://www.mascgroup.org/London2009.html>)

2009 – Scientific visit on Multivariate Data Analysis techniques applied on GC/MS data at Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Analytical Chemistry Department, Cluj-Napoca, Romania (http://chem.ubbcluj.ro/romana/ANEX/c_analitica_ro.html.OK)

2008 – participant at "Advanced Training Courses/Users Training for Mid IR Applications", Bruker Optik GmbH, Ettlingen, Germany (<https://www.bruker.com/en/services/training.html>)

2007 – Scientific visit at University of Ioannina, Laboratory of Food Chemistry, Department of Chemistry, Ioannina, Greece

2007 – Participant at "Individual Course of NETZSCH Education & Training Department on operation and data analysis for Simultaneous Thermal Analyzer STA 409 PC Luxx", NETZSCH Geratebau GmbH, Selb, Germany

2007 – Participant at 1st International School on the Characterization of Organic Residues in Archaeological Materials - a. Focus on ceramics (1st-ISCORAM), University of Siena, organized by Department of Archaeology & Department of Chemistry - C.I.A.D.S., Grosseto, Italy

2007 – participant at IAEA TC Project RER/8/010 Regional Workshop on Harmonization, Implementation and Use of Quality Assurance & Quality Control Methods, Bran, Romania, 11-15 June

2007 – participant at RENAR Training Course "FPS 1: Presentation of SR EN ISO / CEI 17025 : 2005 standard requirements", Bucharest, Romania, 20 - 22 February

2006 – Participant at training on microbial identification by fatty acids methyl esters GC profile with MIDI, Inc.'s GC-FID method, Newark, Delaware, USA (<http://www.midi-inc.com/pages/training.html>)

2006 – Participant at Radiation Safety Training Course on "Operation of Sealed Sources" for "level 2 permit of exercising activities in the nuclear field", IFIN-HH, CPSDN (<https://cpsdn.nipne.ro/>), Magurele, Ilfov, Romania.

2003 - 2005 – bursa FAI (Fondo Affari Internazionale) INFN-LNF, Radiation Safety Group (UF Fisica Sanitaria), Via E. Fermi, 40 00044 Frascati (Roma) Italy,

15 August – 30 September 2005, 1 – 30 September 2004, 1 – 30 September 2003

Annexes

Track record of the last 10 years

A list of the ten most important scientific outputs (publications, patents, technologies etc).

Articles:

1. Age, Isotopic Ratio and Elemental Impurities Determination in Nuclear Materials by Single Quadrupole ICP-MS, Serban, A.; Albota, F. *; Ionuz, E.; Tuta, C.S.; Virgolici, M. J.Radioanal.Nucl.Chem., 2023, 10.1007/s10967-023-09189-5 - published online
2. Supramolecular solvent based method for natural dyes extraction from fibers and holistic chemometric approaches used for assessing induced gamma irradiation's effects: A comprehensive study by LC-DAD-MS analysis, Vasilca S., Petroviciu I., Negut D., Virgolici M., Albu F., Medvedovici A., Microchemical Journal, 2023, 189, 108568
3. Low- and high-molecular weight fractions of geological ambers detected by evolved gas analysis-mass spectrometry, Mattonai, M., Andrei, L., Virgolici, M., Ribechini, E., Journal of Analytical and Applied Pyrolysis, 2023, 172, 105994
4. Ultrasensitive detection of ²⁴⁴Pu in environmental samples by accelerator mass spectrometry D. Pacesila, S. Bishop, I. Stanciu, M. Enachescu, A.R. Petre, M. Virgolici, D. Iancu, L. Tugulan, L. Done, A. Petraglia, F. Terrasi, F. Marzaioli, G. Porzio, R. Buompane, L. Gialanella, Journal of Analytical Atomic Spectrometry, 2022, 37(12), pp. 2581–2588
5. Collaborative Study for Certification of Trace Elements in Uranium Ore Concentrate CRMs UCLO-1, UCHI-1, and UPER-1, LeBlanc K.L. et al. Journal of Radioanalytical and Nuclear Chemistry, 2022, 331(9), pp. 4031–4045
6. Validation of in-house procedure for monitoring rare earth elements and lead elemental impurities in uranium materials, Serban A., F. Albota, M. Virgolici, E. Ionuz, C.S. Tuta, I. Stanciu, V. Fugaru, O. Sima J.Radioanal.Nucl.Chem., 2021, 330, 91-101, doi.org/10.1007/s10967-021-07926-2.
7. TD-GC-FID based approach for monitoring indoor borne styrene and optimization of irradiation conditions for radiopolymerization in consolidated artifacts, Vasilca S., Virgolici M., Cutrubinis M., Moise V., Stănculescu, I., Tran Q.K., Medvedovici A., Journal of Liquid Chromatography & Related Technologies, 42, 2019, 217-224

Patent applications:

1. Procedure for obtaining sterile collagen hydrogels, intended for interactive medical devices Maier S.S., Moise I.V., Marinas I.C., Virgolici M., Angheloiu M., Irimia L.C., Ene M., Vasilca S., Zorila F.L., Albota F.A., A/00024 / 30.Ian.2024
2. Polimer hibrid epoxi-poliacrilic obținut prin reticulare indusă gamma (Hybrid epoxy-polyacrylic polymer obtained through gamma-induced crosslinking) S. Vasilca, M. Virgolici, M. Cutrubinis, V. Moise, A100761/23.11.2022
3. Procedeu nou de obtinere si caracterizare a extractului de namol sapropelic Pell Amar (New process for obtaining and characterizing sapropelic mud extract Pell Amar) Zainea E., Harasim I., Zainea C., Dragomir S., Ponta C.C., Virgolici M., Pintilie C.A., Zorila F., Cutrubinis M., Albulescu R., Grigore A.E., Neagu G., Niță S., Albulescu A., Panteli I.M., 133249 A2 / 2019

Bucharest, 10.01.2025

Dr. Marian Virgolici