



Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)

Address(es)

Telephone(s)

Fax(es)

E-mail

Nationality

Date of birth

Gender

Occupational field

Work experience

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Domnina Maria RAZUS

13 Sibiu Str., Bloc Z 18, app. 22, 060021 sector 6, Bucharest, Romania

+40-21-316 7912, ext. 54 (office);

Mobile: +40-747-95 10 65

+40-21-413 56 98 (home);

+40-21-312 11 47

drazus@icf.ro; drazus@yahoo.com

Romanian

28.11.1949

female

Physical chemistry

1996-present

Senior researcher 1st degree, Head of Chemical Kinetics Laboratory

Basic laboratory research; scientific and administrative management of Chemical Kinetics Laboratory

Ilie Murgulescu Institute of Physical Chemistry, 202 Spl.Independentei, sector 6, Bucharest, Romania

Academic research within the Romanian Academy

1995 – 1996

Senior researcher 2nd degree

Basic laboratory research

Ilie Murgulescu Institute of Physical Chemistry, 202 Spl.Independentei, sector 6, Bucharest, Romania

Academic research within the Romanian Academy

1990 – 1995

Senior researcher 3rd degree

Basic laboratory research

Ilie Murgulescu Institute of Physical Chemistry, 202 Spl.Independentei, sector 6, Bucharest, Romania

Academic research within the Romanian Academy

1976 – 1990

Researcher

Applied research, microproduction of fine chemicals

Center of Physical Chemistry, 202 Spl.Independentei, sector 6, Bucharest, Romania

Applied research within ICECHIM, The National institute for Chemical Research

1971-1976

Assistant Researcher

Basic laboratory research

Center of Physical Chemistry, 31 Str. Galati, sector 1, Bucharest, Romania

Academic research within the Romanian Ministry of Education and Research

Education and training

| | |
|--|---|
| Dates | Dec. 1991 - Nov. 1992 (12 months); 1995-2005 (12 months) |
| Title of qualification awarded | Post-doc fellowship awarded by Alexander von Humboldt Foundation, Germany |
| Principal subjects/occupational skills covered | Academic research in the field of combustion and explosion of gases |
| Name and type of organisation providing education and training | Institut für Physikalische Chemie der Universität Göttingen, Germany (Professor Heinz Gg. Wagner)(1991-1992;1995) and BAM (Bundesanstalt für Materialforschung- und prüfung)-Berlin, Germany, Prof. Dr. Norbert Pfeil (1999-2005) |
| Dates | 1987 |
| Title of qualification awarded | PhD |
| Principal subjects/occupational skills covered | Explosive combustion of fuel-air gaseous mixtures |
| Name and type of organisation providing education and training | Centrul de Chimie Fizica Bucuresti |
| Dates | 1971 |
| Title of qualification awarded | MSc |
| Principal subjects/occupational skills covered | Physico-chemical study of stability of organo-metallic complexes |
| Name and type of organisation providing education and training | University of Bucharest, Faculty of Chemistry, Department of Physical Chemistry |

Personal skills and competences

Mother tongue(s) **Romanian**

Other language(s)

Self-assessment

European level ()*

English

French

German

| Understanding | | | | Speaking | | | | Writing | |
|---------------|------------------|---------|------------------|--------------------|------------------|-------------------|------------------|---------|------------------|
| Listening | | Reading | | Spoken interaction | | Spoken production | | | |
| C1 | Independent user | C2 | Independent user | C1 | Independent user | C1 | Independent user | C1 | Independent user |
| C2 | Independent user | C2 | Independent user | C2 | Independent user | C2 | Independent user | C1 | Independent user |
| B2 | Independent user | B1 | Basic user | B1 | Basic user | B1 | Basic user | A2 | Basic user |

(*) [Common European Framework of Reference for Languages](http://www.cedefop.europa.eu)

Social skills and competences

Organisational skills and competences

Fields of competence

Main research directions

Available experimental techniques

Good teamwork

Project director for research grants since 1996, financed from national or international funding organisations

Director of 6 research grants, with various durations (2 or 3 years) within 2001-2016

Chemical kinetics in homogeneous and heterogeneous systems; combustion and flames of gases; flammability of gaseous mixtures and of dust suspensions in air; safety recommendations, for closed and open systems where deflagrations may occur

Critical conditions for explosion initiation by means of electric sparks or hot bodies (metallic wires, jets of hot, burned gas); flammability limits; flame propagation in hydrocarbon-oxygen and hydrocarbon-air mixtures, in steady and non-steady conditions; catalytic combustion of hydrocarbons; explosive decomposition of exothermic compounds

Methods for measuring the ignition and propagation parameters characteristic for gaseous fuel-oxidant mixtures (flammability limits; minimum ignition energy for initiation with high-voltage or low-voltage electric sparks or with heated wires; peak pressure, maximum rate of pressure rise, deflagration index of closed vessel explosions; propagation speed and normal burning velocity)

| | |
|---|---|
| Computer skills and competences | Good, for operating with Windows XP or Vista; Good, for programs under MS Office; Good, for SigmaPlot, OriginLab and Table Curve |
| Additional information | |
| Publications (total) | 143 articles, Chapters in 4 books |
| Citations | 716 citations |
| h-index | 15 |
| Scientific communications | 159 at National and International Conferences and Symposia |
| Managerial competence | Project director at 7 National contracts and 1 International contract, awarded by competition, between 1996-2011; Principal investigator in a National Program of the Romanian Academy (" <i>Risk factors associated to explosions in fuel-oxidant gaseous mixtures</i> ") |
| Mentor | Mentor of 2 research projects run by young scientists from Ilie Murgulescu Institute of Physical Chemistry, between 2011-2015 |
| Coordinator of international cooperation agreements | „ <i>Flammability of Fuel/Inert/Oxidant Gaseous Mixtures</i> ”, Cooperation with BAM (Bundesanstalt für Materialforschung und -prüfung)-Berlin, 2007-2012; “ <i>Safety Characteristics of Gaseous Mixtures</i> ”, Cooperation with PTB (Physikalische-Technische Bundesanstalt)- Braunschweig, Germany, 2005-2014. |
| Award | "Gh. Spacu" Award for Chemistry of the Romanian Academy of Sciences (1990), for publications in the field of fast gas-phase oxidation reactions issued in 1987 |
| Referee | <ul style="list-style-type: none"> for ISI-ranked Journals: Journal of Hazardous Materials; Journal of Loss Prevention in the Process Industries; Fuel; Intern. Journal of Mechanical & Materials Engineering; Process Safety Progress (Elsevier); Energy & Fuels (Americal Chem. Soc.); Revue Roumaine de Chimie (Editura Academiei Romane); Revista de Chimie (Bucharest) member of 6 Doctoral examination commissions at the University from Bucharest between 2004-2015 |
| Professional Associations | Romanian Chemical Society; Romanian Physical Chemistry Society; The Combustion Institute, USA; |
| ISI-Thomson Researcher ID | B-1665-2008 |
| Annexes | List of scientific contributions |

List of Scientific Contributions, 2006-2016

Book chapters:

1. Domnina Razus, On Form and Pattern (capitolul intitulat "Reaction Pathways in the high temperature oxidation of hydrocarbons", Bucharest, 2015, Ed. Academiei Romane, pp. 140-152 (C. Vasilescu, M.L. Flonta, I. Craciun Eds.). ISBN: 978-973-27-2531-3.

Papers in Scientific Journals:

ISI papers:

1. Maria Mitu, Maria Prodan, Venera Giurcan, Domnina Razus and Dumitru Oancea, Influence of inert gas addition on propagation indices of methane-air deflagrations, Process Safety Environm. Prot., 102, 513-522 (2016), ISSN: 0957-5820.
2. V. Giurcan, Domnina Razus, M. Mitu and D. Oancea, Prediction of flammability limits of fuel-air and fuel-air-inert mixtures from explosivity parameters in closed vessels, J. Loss Prev. Process Ind., 34, 65-71 (2015). ISSN: 0950-4230.
3. M. Mitu, Domnina Razus, V. Giurcan and D. Oancea, Normal burning velocity and propagation speed of ethane-air: pressure and temperature dependence, Fuel, 147, 27-34 (2015). ISSN: 0016-2361.

4. C. Movileanu, V. Gosa and Domnina Razus, Propagation of ethylene-air flames in closed cylindrical vessels with asymmetrical ignition, *Process Safety Environm. Prot.*, **96**, 167-176 (2015). ISSN: 0957-5820
5. V. Giurcan, Domnina Razus, M. Mitu and D. Oancea, Numerical Study of the Laminar Flame Propagation in Ethane-Air Mixtures, *Central Eur. J. Chem.*, **12** (3), 391-402 (2014). ISSN: 1895-1066 (Print)
6. M. Mitu, Domnina Razus, V. Giurcan and D. Oancea, Experimental and Numerical Study of Laminar Burning Velocity of Ethane-Air Mixtures of Variable Initial Composition, Temperature and Pressure, *Energy & Fuels*, **28**, 2179-2188 (2014). ISSN: 0887-0624.
7. Domnina Razus, V. Giurcan, M. Mitu, D. Oancea, Physico-chemical parameters of C2 hydrocarbon-air flames resulted from computed and measured laminar burning velocities, *Rev. Roumaine Chim*, **59** (6-7) 405-413 (2014). ISSN: 0035-3930.
8. M. Mitu, V. Munteanu, Domnina Razus and Dumitru Oancea, Kinetics of Isothermal Catalytic Ignition and Combustion of LPG-air Mixtures on Platinum Wire, *Rev. Roumaine Chim*, **59**, 727-732 (2014). ISSN: 0035-3930.
9. C. Movileanu, Domnina Razus and D. Oancea, Additive effects on pressure rise rate and deflagration index of ethylene-air explosions in closed vessels, *Fuel*, **111**, 194-200 (2013). ISSN: 0016-2361.
10. Domnina Razus, V. Brinzea, M. Mitu, C. Movileanu and D. Oancea, Burning velocity of Propane-Air Mixtures from Pressure-time Records during Explosions in a Closed Spherical Vessel, *Energy & Fuels*, **26**, 901-909 (2012). ISSN: 0887-0624.
11. V. Brinzea, M. Mitu, C. Movileanu, A. Musuc, Domnina Razus and D. Oancea, Propagation Velocities of Propane-air Deflagrations at Normal and Elevated Pressures and Temperatures, *Rev. Chimie*, **63**(3), 289-292 (2012). ISSN: 0034-7752.
12. C. Movileanu, M. Mitu, V. Giurcan, A. Musuc, Domnina Razus, D. Oancea, Numerical Study of Diluent Influence on Burning Velocity of Acetylene-Air Mixtures, *Rev. Roum. Chim.*, **57**(2), 215-222 (2012). ISSN: 0035-3930.
13. Domnina Razus, M. Mitu, V. Brinzea, A. Musuc and D. Oancea, Kinetic Modeling of Flame Propagation in Gaseous Propane-Air Mixtures, *Rev. Roum. Chimie*, **57**(7-8), 675-681 (2012) ISSN: 0035-3930.
14. C. Movileanu, V. Gosa and Domnina Razus, Explosion of gaseous ethylene-air mixtures in closed cylindrical vessels with central ignition, *J. Hazard. Mater.*, **235-236**, 108-115 (2012). ISSN: 0304-3894.
15. Maria Mitu, Venera Giurcan, Domnina Razus and Dumitru Oancea, Temperature and pressure influence on ethane-air deflagration parameters in a spherical closed vessel, *Energy & Fuels*, **26**(8), 4840-4848 (2012). ISSN: 0887-0624.
16. C. Movileanu, D. Razus, and D. Oancea, Additive Effects on Burning Velocity of Ethylene-Air Mixtures, *Energy & Fuels*, **25**(6), 2444-2451 (2011). I.F. (2010) = 2.444
17. D. Oancea, V. Munteanu, D. Razus and M. Mitu, Temperature and Pressure Effect on the Isothermal Catalytic Ignition of n-Hexane/Air Mixtures on Platinum, *Rev. Roumaine Chim.*, **56**(3), 255-260 (2011). I.F. = 0.311
18. D. Razus, M. Mitu, V. Brinzea, A. Musuc and D. Oancea, Kinetic Modeling of Flame Propagation in Gaseous Propane-Air Mixtures, submitted to *Rev. Roum. Chim.*, aprilie 2011.
19. D. Razus, V. Brinzea, M. Mitu, C. Movileanu and D. Oancea, Temperature and Pressure Influence on Maximum Rates of Pressure Rise during Explosions of Propane-Air Mixtures in a Spherical Vessel, *J. Hazard. Mater.*, **190** (2011) 891-896. ISSN: 0304-3894. I.F. (2010) = 3.723
20. C. Movileanu, D. Razus, and D. Oancea, Additive Effects on Burning Velocity of Ethylene-Air Mixtures, *Energy & Fuels*, **25**(6), 2444-2451 (2011). ISSN: 0887-0624. I.F. (2010) = 2.444
21. D. Oancea, V. Munteanu, D. Razus and M. Mitu, A Simplified Kinetic Model for Isothermal Catalytic Ignition: Propane/Air Mixture on Platinum Wire, *J. Therm Anal Calorim*, **103**, 911-916 (2011), ISSN: 1388-6150 (print version). I.F. (2010) = 1.752
22. V. Brinzea, M. Mitu, C. Movileanu, D. Razus and D. Oancea, Deflagration Parameters of Stoichiometric Propane-Air Mixture during the Initial Stage of Gaseous Explosions in Closed Vessels, *Rev. Chimie*, **62** (2), 201-205 (2011). ISSN: 0034-7752. I.F. (2010) = 0.693
23. C. Movileanu, M. Mitu, V. Brinzea, A. Musuc, M. Mocanu, D. Razus and D. Oancea, Adiabatic Flame Temperature of Fuel-Air Mixtures, in Isobaric and Isochoric Combustion Processes, *Rev. Chimie*, **62** (4), 376-379 (2011). ISSN: 0034-7752. I.F. (2010) = 0.693
24. C. Movileanu, D. Razus and D. Oancea, Additive effects on explosion pressure and flame temperature of stoichiometric ethylene-air mixture in closed vessels, *Revue Roumaine Chim.*, **56**(1), 11-17 (2011). ISSN: 0035-3930. I.F. (2010) = 0.311
25. D. Oancea, V. Munteanu, D. Razus and M. Mitu, Temperature and Pressure Effect on the Isothermal Catalytic Ignition of n-Hexane/Air Mixtures on Platinum, *Rev. Roumaine Chim.*, **56**(3), 255-260 (2011), ISSN: 0035-3930. I.F. (2010) = 0.311
26. D. Razus, V. Brinzea, M. Mitu and D. Oancea, Temperature and pressure influence on explosion pressures of closed vessel propane-air deflagrations, *J. Hazard. Mater.*, **174** (2010) 548-555. I.F. (2009) = 4.144.
27. D. Razus, V. Brinzea, M. Mitu and D. Oancea, Burning Velocity of LPG (Liquefied petroleum gas)-Air Mixtures in the Presence of Exhaust Gas, *Energy & Fuels*, **24** (2010) 1487-1494. I.F. (2009) = 2.319.
28. D. Razus, V. Brinzea, M. Mitu and D. Oancea, Experimental and computed burning velocities of propane-air mixtures, accepted, *Energy Convers. Managem.*, **51**, 2979-2984, 2010, I.F. (2009) = 1.944.
29. V. Brinzea, M. Mitu, D. Razus, D. Oancea, Overall activation parameters of propane oxidation in flames from normal burning velocities, *Rev. Roumaine Chim*, **55** (2010) 55-61. I.F. = 0.311.
30. N. Musat, V. Munteanu, D. Razus and D. Oancea, Flame ignition and quenching of n-butane-air mixture at various initial pressures. *Critical Properties*, *Rev. Roumaine Chim.*, **55** (2010) 99-103. I.F. = 0.311.
31. D. Razus, V. Brinzea, M. Mitu and D. Oancea, Explosion characteristics of LPG-air mixtures in closed vessels, *J. Hazard. Mater.*, **165**(1-3) (2009) 1248-1252. I.F. = 4.144.
32. A. Musuc, D. Razus and D. Oancea, Thermal Stabilities of New Synthesized N-Methoxy-Polynitroanilines Derivatives, *J. Thermal Anal. Cal.*, **98** (3) (2009) 779-784. I.F. = 1.587.
33. O. Staicu, D. Razus, V. Munteanu, D. Oancea, Heterogeneous catalytic ignition of n-butane/air mixtures on platinum, *Central Eur. J. Chem.*, **7** (2009) 478-485. I.F. = 1.065.
34. D. Razus, V. Brinzea, M. Mitu, C. Movileanu and D. Oancea, Inerting effect of the combustion products on the confined deflagration of liquefied petroleum gas-air mixtures, *J. Loss Prev. Process Ind.*, **22** (2009) 463-468. I.F. = 0.810.
35. D. Razus, V. Brinzea, M. Mitu and D. Oancea, Initial pressure and mixture composition influence on LPG-air confined explosions, *Rev.*

Chimie, **60**(8) (2009) 750-754. I.F. = 0.552.

36. D. Oancea, O. Staicu, V. Munteanu and D. Razus, Catalytic Combustion of the Stoichiometric n-Butane / Air Mixture on Isothermally Heated Platinum Wire, *Catal. Lett.*, **121** (2008) 247–254. I.F. = 2.021.
37. O. Staicu, V. Munteanu, D. Razus and D. Oancea, Overall Kinetics of Isobutane Catalytic Combustion on a Platinum Wire at High Temperatures, *Revue Roum.Chim.*, **53** (2008) 277 – 282. I.F. = 0.284
38. D. Razus, C. Movileanu and D. Oancea, The rate of pressure rise of gaseous propylene-air explosions in spherical and cylindrical enclosures, *J. Hazard. Mater.*, **139** (2007)1-8. I.F. = 1.855
39. A. Musuc, D. Razus and D. Oancea, Kinetics of exothermal decomposition of 2-nitrophenylhydrazine and 4-nitrophenylhydrazine using DSC non-isothermal data, *J. Thermal Anal. Calorim.*, **90** (2007) 807-812. I.F. = 1.483
40. D. Razus, C. Movileanu, V. Brinzea and D. Oancea, Closed vessel combustion of propylene-air mixtures in the presence of exhaust gas, *Fuel*, **86** (2007) 1865-72. I.F. = 1.358
41. D. Razus, M. Mitu, V. Brinzea and D. Oancea, Pressure evolution during confined deflagration of n-butane/air mixtures, *Rev. Chim.*, **58** (2007) 1170-1175. I.F. = 0.261.
42. A. Musuc, C. Popescu, D. Razus and D. Oancea, Non-isothermal kinetic analysis of thermal decomposition of 2, 4-dinitrophenylhydrazine, *Rev. Roumaine Chim.*, **52** (2007) 561-567. I.F. = 0.208.
43. D. Razus, C. Movileanu, V. Brinzea, D. Oancea, Explosion Pressures of Hydrocarbon-Air Mixtures in Closed Vessels, *J. Hazard. Mater.*, **135** (2006) 58-65. I.F. = 1.855
44. A. Musuc, D. Razus, D. Oancea, Kinetic analysis of isothermal decomposition of 2,4-dinitrophenylhydrazine using differential scanning calorimetry, *Therm. Acta*, **448** (2006) 130-135. I.F. = 1.417.
45. D. Razus, M. Molnarne, C. Movileanu, A. Irimia, Estimation of LOC (Limiting Oxygen Concentration) of Fuel/Air/Inert Mixtures at Elevated Temperatures by means of adiabatic flame temperatures, *Chem.Eng.Process.*, **45** (2006) 193-197. I.F. = 1.129.
46. D. Razus, D. Oancea and C. Movileanu, Burning velocity evaluation from pressure evolution during the early stage of closed-vessel explosions, *J.Loss Prev. Process Ind.*, **19** (2006) 334-342. I.F. = 0.419.

International database papers:

1. Dumitru Oancea, Maria Prodan, Domnina Razus, Investigation of Laminar Flame Propagation of the Most Hazardous Confined Methane/Air Mixture using Pressure-time Records in a Small Vessel, *New Front. Chem.* **25**, 64-72 (2016). ISSN: 1224-9513.
2. M. Mitu, C. Movileanu, D. Razus and D. Oancea, Deflagration parameters of propane-air mixtures in a closed cylindrical vessel, *UPB Bulletin*, **73**(3), 17-26 (2011).
3. V. Brinzea, M. Mitu, C. Movileanu, Adina Musuc and D. Razus, Expansion Coefficients and Normal Burning Velocities of Propane-Air Mixtures by the Closed Vessel Technique, *Analele Univ. Bucuresti, Chimie*, **19** (2), 31-37 (2010).
4. V. Brinzea, D. Razus, M. Mitu and D. Oancea, Overall activation energy of propane-air combustion in laminar flames, *Analele Univ. Bucuresti, Chimie*, **8**(1) (2009) 35-41.
5. C. Movileanu, V. Brinzea, M. Mitu, D. Razus and D. Oancea, Explosion pressures of confined deflagrations propagating in gaseous mixtures of lower alkanes with air, *Analele Univ. Bucuresti, Chimie*, **18** (2) (2009) 39-46.
6. A. Musuc, D. Razus and D. Oancea, A DSC Study of the Thermal decomposition of 2-Methoxyamino-3,5-Dinitro-Pyridine, *Analele Univ. Bucuresti, Chimie*, **16**(I) (2007) 25-30 .
7. O. Staicu, V. Munteanu, D. Razus and D. Oancea, A First-Derivative Method to Evaluate the Kinetic Parameters from Transients of Catalytic Ignition on Platinum Wires, *Analele Univ. Bucuresti, Chimie*, **16**(II) (2007) 85-91.

Conference Proceedings

1. C. Movileanu, Domnina Razus, M. Mitu, and D. Oancea, Explosion of C₂H₄-N₂O-N₂ in Elongated Closed Vessels, *Proc. Eur. Combust. Meeting*, April 2015, Budapest, Hungary, 6 pp.. ISBN 978-963-12-1257-0.
2. C. Movileanu, Domnina Razus, V. Giurcan and V. Gosa, Pressure evolution of ethylene-air explosions in enclosures, *Proc. FMC Symp. Cracovia, Poland, 2014, J. Physics, Conf. Series*, **08/2014**, 530(1): 012014, doi:10.1088/1742-6596/530/1/012014.
3. V. Giurcan, Domnina Razus, M. Mitu , C.Movileanu and D. Oancea, Experimental and Numerical Investigation of Laminar Burning Velocity of Fuel/Air/Inert Gaseous Mixtures of Variable Initial Temperature and Pressure, *Proc. 6th Eur. Comb. Meeting, Lund, Sweden, 2013*, *Comun.* 1-74, 6 pp.
4. C. Movileanu, Domnina Razus, V. Giurcan and V. Gosa, Flame propagation of ethylene-air mixtures in closed tubes, *Proc. Symp. on Pulsed and Continuous Detonations, St. Petersburg, June 2014*, pp. 68-72.
5. N. Musat, V. Munteanu, D. Razus and D. Oancea, Critical properties for ignition and quenching of flammable n-butane-air mixture with variation of the initial pressure, *Proc. 3-rd European Combustion Meeting, Vienna, Austria, April 2009*.
6. D. Razus, V. Brinzea, M. Mitu and D. Oancea, Experimental and computed burning velocities of propane-air mixtures, *Proc. 7-th ISPHMIE, Sankt Petersburg, Russia, iulie 2008*, p. 155-165.

Research Grants

I. Grants awarded as project manager

1. *Laminar propagation of deflagrations in isochoric fuel/air systems – experimental study and kinetic modeling of combustion*, PNII – IDEI project code 546, awarded in 2009, duration 3 years (2009-2011).
2. *Study of explosions of gaseous mixtures, in deflagration regime*, Grant from the Humboldt Foundation (Germany), 2007, for scientific equipment acquisition.