Dr. Venera Giurcan
List of scientific papers and projects

I. Papers published in ISI ranked journals:

1. D. Razus, C. Movileanu, **V. Brinzea**, D. Oancea, *Explosion Pressures of Hydrocarbon-Air Mixtures in Closed Vessels*, J. Hazard. Mater., 135(1-3), 58-65 (2006).
2. D. Razus, C. Movileanu, **V. Brinzea**, D. Oancea, *Closed vessel combustion of propylene-air mixtures in the presence of exhaust gas*, Fuel, 86(12-13), 1865-1872 (2007).
3. D. Razus, M. Mitu, **V. Brinzea**, D. Oancea, *Pressure evolution during confined deflagration of n-butane/air mixtures*, Rev. Chimie, 58(12), 1170-1175 (2007).
4. D. Razus, **V. Brinzea**, M. Mitu, D. Oancea, *Explosion characteristics of LPG-air mixtures in closed vessels,* J. Hazard. Mater., 165(1-3), 1248-1252 (2009).
5. D. Razus, **V. Brinzea**, M. Mitu, C. Movileanu, D. Oancea, *Inerting effect of the combustion products on the confined deflagration of liquefied petroleum gas-air mixtures*, J. Loss Prev. Process Ind., 22, 463-468 (2009).
6. D. Razus, **V. Brinzea**, M. Mitu, D. Oancea, *Initial pressure and mixture composition influence on LPG-air confined explosion*, Rev. Chimie, 60(8), 750-754 (2009).
7. D. Razus, **V. Brinzea**, M. Mitu, D. Oancea, *Temperature and pressure influence on explosion pressures of closed vessel propane-air deflagrations*, J. Hazard. Mater., 174, 548-555 (2010).
8. **V. Brinzea**, M. Mitu, D. Razus, D. Oancea, *Overall activation parameters of propane oxidation in flames from normal burning velocities*, Rev. Roumaine Chim, 55(1), 55-61 (2010).
9. D. Razus, **V. Brinzea**, M. Mitu, D. Oancea, *Burning velocity of LPG (Liquefied Petroleum Gas)-air mixtures in the presence of exhaust gas*, Energy Fuels, 24(3), 1487-1494 (2010).
10. D. Razus, **V. Brinzea**, M. Mitu, D. Oancea, C. Movileanu, *Experimental and computed burning velocities of propane-air mixtures*, Energy Convers. Managem., 51, 2979-2984 (2010).
11. **V. Brinzea**, M. Mitu, C. Movileanu, D. Razus, D. Oancea, *Deflagration parameters of stoichiometric propane-air mixture during the initial stage of gaseous explosions in closed vessels*, Rev. Chimie, 62(1), 201-205 (2011).
12. D. Razus, **V. Brinzea**, M. Mitu, C. Movileanu, 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, 891-896 (2011).
13. C. Movileanu, M. Mitu, **V. Brinzea**, A. Musuc, M. Mocanu, D. Razus, D. Oancea, *Adiabatic flame temperature of fuel-air mixtures, in isobaric and isochoric combustion processes*, Rev. Chimie, 62(4), 376-379 (2011).
14. D. Razus, **V. Brinzea**, M. Mitu, C. Movileanu, 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).
15. **V. Brinzea**, M. Mitu, C. Movileanu, A. Musuc, D. Razus, D. Oancea, *Propagation velocities of propane-air deflagrations at normal and elevated pressures and temperatures*, Rev. Chimie, 63(3), 289-292 (2012).
16. D. Razus, M. Mitu, **V. Brinzea**, A. Musuc, D. Oancea, *Kinetic modeling of flame propagation in gaseous propane-air mixtures*, Rev. Roumaine Chim., 57(7-8), 675-681 (2012).
17. C. Movileanu, M. Mitu, **V. Giurcan**, A. Musuc, D. Razus, D. Oancea, *Numerical study of diluent influence on burning velocity of acetylene-air mixtures*, Rev. Roumaine Chim., 57(2), 215-222 (2012).

18. M. Mitu, **V. Giurcan**, D. Razus, D. Oancea, *Temperature and pressure influence on ethane-air deflagration parameters in a spherical closed vessel*, Energy Fuels, 26(8), 4840-4848 (2012).
19. **V. Giurcan**, D. Razus, M. Mitu, V. Schröder, *Limiting oxygen concentration and minimum inert concentration of fuel-air-inert gaseous mixtures evaluation by means of adiabatic flame temperatures and measured fuel-air lower flammability limits*, Rev. Chimie, 64(12), 1445-1453 (2013).
20. **V. Giurcan**, D. Razus. M. Mitu, D. Oancea, *Numerical study of the laminar flame propagation in ethane-air mixtures*, Central Eur. J. Chemistry, 12(3), 391-402 (2014).
21. M. Mitu, D. Razus, **V. Giurcan**, 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).
22. D. 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), 407-415 (2014).
23. **V. Giurcan**, D. Razus. M. Mitu, 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).
24. M. Mitu, D. Razus, **V. Giurcan**, D. Oancea, *Normal burning velocity and propagation speed of ethane-air: pressure and temperature dependence*, Fuel, 147, 27-34 (2015).
25. M. Mitu, M. Prodan, **V. Giurcan**, D. Razus, D. Oancea, *Influence of inert gas addition on propagation indices of methane-air deflagrations*, Proc. Saf. Environ. Prot., 102, 513-522 (2016).
26. **V. Giurcan**, M. Mitu, D. Razus, D. Oancea, *Laminar flame propagation in rich ethane-air-inert mixtures*, Rev. Chimie, 67(6), 1084-1089 (2016).
27. **V. Giurcan**, M. Mitu, C. Movileanu, D. Razus, *Temperature, pressure and dilution effect on laminar burning velocity of propane-air*, Rev. Roumaine Chim., 61(6-7), 517-524 (2016).
28. M. Mitu, **V. Giurcan**, D. Razus, D. Oancea, *Inert gas influence on laminar burning velocity of methane-air mixtures*, J. Hazard. Mater., 321, 440-448 (2017).
29. M. Mitu, **V. Giurcan**, D. Razus, M. Prodan, D. Oancea, *Propagation indices of methane-air explosions in closed vessels*, J. Loss Prev. Process Ind., 47, 110-119 (2017).
30. **V. Giurcan**, M. Mitu, D. Razus, D. Oancea, *Pressure and temperature influence on propagation indices of n-butane-air gaseous mixtures*, Proc. Saf. Environ. Prot., 111, 94-101 (2017).
31. C. Movileanu, M. Mitu, D. Razus, **V. Giurcan**, D. Oancea, *Propagation indexes of C_2H_4-N_2O-N_2 deflagrations in elongated closed vessels*, Rev. Roumaine Chim., 62(4-5), 357-363 (2017).
32. D. Razus, M. Mitu, **V. Giurcan**, D. Oancea, *Propagation indices of methane-nitrous oxide flames in the presence of inert additives*, J. Loss Prev. Process Ind., 49, 418-426 (2017).
33. D. Razus, M. Mitu, **V. Giurcan**, C. Movileanu, D. Oancea, *Methane-unconventional oxidant flames. Laminar burning velocities of nitrogen-diluted methane-N_2O mixtures*, Proc. Saf. Environ. Prot., 114, 240-250 (2018).
34. M. Mitu, **V. Giurcan**, D. Razus, D. Oancea, *Inert gas influence on propagation velocity of methane-air laminar flames*, Rev. Chimie, 69(1), 196-200 (2018).
35. D. Razus, M. Mitu, **V. Giurcan**, C. Movileanu, D. Oancea, *Additive influence on maximum experimental safe gap of ethylene-air mixtures*, Fuel, 237, 888-894 (2019).
36. **V. Giurcan**, M. Mitu, D**.** Razus, D. Oancea, *Experimental study and detailed kinetic modeling of laminar flame propagation in premixed stoichiometric n-butane-air mixture*, Rev. Chimie, 70(4), 1125-1131 (2019).

37. **V. Giurcan**, M. Mitu, D. Razus, C. Movileanu, D. Oancea, *Influence of inert additives on small-scale closed vessel explosions of propane-air mixtures*, Fire Safety Journal, 111, 102939 (2020).
38. M. Mitu, **V. Giurcan**, D. Razus, D. Oancea, *Influence of initial pressure and vessel's geometry on deflagration of stoichiometric methane-air mixture in small-scale closed vessels*, Energy Fuels, 34(3), 3828-3835 (2020).
39. C. Movileanu, M. Mitu, **V. Giurcan**, D. Razus, D. Oancea, *Quenching distances, minimum ignition energies and related properties of propane-air-diluent mixtures*, Fuel, 274, 117836 (2020).
40. D. Razus, M. Mitu, **V. Giurcan**, C. Movileanu, D. Oancea, *Numerical study of pressure and composition influence on laminar flame propagation in nitrogen-diluted H_2-O_2 mixtures*, Rev. Roumaine Chim., 65(6), 529-537 (2020).
41. M. Mitu, **V. Giurcan**, C. Movileanu, D. Razus, D. Oancea, *Propagation of CH_4-N_2O-N_2 flames in a closed spherical vessel*, Processes, 9(5), 851 (2021).
42. **V. Giurcan**, C. Movileanu, A.M. Musuc, M. Mitu, *Laminar burning velocity of biogas-containing mixtures. A literature review*, Processes, 9(6), 996 (2021).
43. **V. Giurcan**, M. Mitu, C. Movileanu, D. Razus, D. Oancea, *Propagation velocity of flames in inert-diluted stoichiometric propane-air mixture: pressure and temperature dependence*, Processes, 9(6), 997 (2021).
44. C. Movileanu, **V. Giurcan**, M. Mitu, D. Razus, D. Oancea, *Ignition by low-voltage electric discharges of diluted and undiluted C_3H_8-air mixtures*, Ind. Eng. Chem. Res., 60, 12123-12132 (2021).
45. D. Razus, M. Mitu, **V. Giurcan**, C. Movileanu, *Laminar flame propagation in nitrogen-diluted stoichiometric H_2-N_2O mixtures – A numerical study*, Rev. Roumaine Chim., 66(3), 255-265 (2021).
46. M. Mitu, C. Movileanu, **V. Giurcan**, *Deflagration characteristics of N_2-diluted CH_4-N_2O mixtures in the course of the incipient stage of flame propagation*, Energies, 14, 4918 (2021).
47. **V. Giurcan**, M. Mitu, C. Movileanu, D. Razus, D. Oancea, *Numerical study of laminar flame propagation in CH_4-N_2O-N_2 at moderate pressures and temperatures*, Combust. Expl. Shock Waves, 58(1), 22-33, (2022).
48. D. Razus, **V. Giurcan**, C. Movileanu, M. Mitu, *Nitric oxide generation in N_2-diluted H_2-N_2O flames – a computational study*, Processes, 10(5), 1032 (2022).
49. M. Mitu, C. Movileanu, **V. Giurcan**, *The laminar burning velocities of stoichiometric methane-air mixture from closed vessels measurements*, Energies, 15, 5058. (2022).
50. M. Mitu, C. Movileanu, D. Razus, **V. Giurcan**, *Dynamics of pressure evolution during gaseous ethane-air mixture explosions in enclosures. A review*, Energies 15, 6879 (2022).
51. **V. Giurcan**, M. Mitu, C. Movileanu, D. Razus, *Propagation characteristics of stoichiometric inert-diluted methane-N_2O flames*, Ind. Eng. Chem. Res., 61, 17065-17076 (2022).
52. **V. Giurcan**, D. Razus, M. Mitu, C. Movileanu, Dynamics of pressure variation in closed vessel explosions of diluted fuel/oxidant mixtures, Processes, 10, 2726 (2022).
53. C. Movileanu, M. Mitu, **V. Giurcan**, The state of the art of laminar burning velocities of H2-enriched n-C4H10-air mixtures, Energies, 16, 5536 (2023).
54. D. Razus, C. Movileanu, M. Mitu, **V. Giurcan**, Expansion coefficients and propagation speeds of premixed n-butane-air flames, Energies, 16, 5728 (2023).
55. D. Razus, M. Mitu, C. Movileanu, **V. Giurcan**, Calculated Adiabatic Flame Temperature – a Tool for Ascertaining the Minimum Inert Concentration of Fuel-Nitrous Oxide-Inert Gaseous Mixtures, Rev. Roum. Chim., 68(7-8), 321-326 (2023).

56. C. Movileanu, **V. Giurcan**, D. Razus, A.M. Musuc, C. Hornoiu, P. Chesler, M. Mitu, Hydrogen influence on confined explosion characteristics of hydrocarbon-air mixtures at sub-atmospheric pressures, Int. J. Hydrogen Energy, 67, 150-158 (2024).
57. **V. Giurcan**, C. Movileanu, M. Mitu, D. Razus, The impact of H_2-enrichment on flame structure and combustion characteristic properties of premixed hydrocarbon-air flames, Fuel, 376, 132674 (2024).

II. Papers published in journals indexed in BDI databases

1. D. Razus, C. Movileanu, **V. Branzea**, D. Oancea, *Overall activation parameters of propylene oxidation in premixed flames*, Analele Univ. Bucuresti-Chimie, 14(I-II), 209-214 (2005).
2. **V. Brinzea**, D. Razus, M. Mitu, D. Oancea, *Overall activation energy of propane-air combustion in laminar flames*, Analele Univ. Bucuresti-Chimie, 18(I), 35-41 (2009).
3. C. Movileanu, **V. Brinzea**, M. Mitu, D. Razus, D. Oancea, *Explosion pressures of confined deflagrations propagating in stoichiometric gaseous mixtures of lower alkanes with air*, Analele Univ. Bucuresti-Chimie, 18(II), 39-46 (2009).
4. **V. Brinzea**, M. Mitu, C. Movileanu, A. Musuc, 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).
5. M. Mitu, **V. Brinzea**, A. Musuc, D. Razus, D. Oancea, *Deflagration parameters of propane–air mixtures in a closed cylindrical vessel*, UPB Sci. Bull., Series B, 73(3), 17-26 (2011).
6. C. Movileanu, D. Razus, **V. Giurcan**, V. Gosa, *Pressure evolution of ethylene-air explosions in enclosures*, Proc. XXI Fluid Mechanics published in Journal of Physics: Conference Series 530 (2014) 012014, doi:10.1088/1742-6596/530/1/012014.

III. Papers published in proceedings

1. D. Razus, D. Oancea, **V. Brinzea**, M. Mitu, V.Munteanu, *Experimental and computational study of flame propagation in propane-, n-butane- and liquefied petroleum gas-air mixtures*, Proc. 3th European Comb. Meeting, Chania, Grecia, 11-14 Apr. 2007, Paper VI-9.
2. D. Razus, D. Oancea, **V. Brinzea**, M. Mitu, C. Movileanu, *Experimental and computed burning velocities of propane-air mixtures*, Proc. 7th Intern. Symp. on Hazards, Prevention, Protection and Mitigation of Industrial Explosions (7th ISHPMIE), St. Petersburg, Rusia, 7-11 Jul. 2008.
3. **V. Giurcan**, D. Razus, M. Mitu, C. Movileanu, D. Oancea, *Experimental and numerical investigation of laminar burning velocitiy of fuel/air/inert gaseous mixtures of variable initial temperature and pressure*, Proc. 6th European Comb. Meeting, Lund, Sweden, 25-28 June 2013.
4. C. Movileanu, D. Razus, **V. Giurcan**, V. Gosa, *Flame propagation of ethylene-air mixtures in closed tubes*, Proc. 9th International Colloquium on Pulsed and Continuous Detonations, St. Petersburg, Rusia, 19-23 May 2014.
5. C. Movileanu, D. Razus, M. Mitu, **V. Giurcan**, D. Oancea, *Explosion of C_2H_4-N_2O-N_2 in elongated closed vessels*, Proc. 7th European Comb. Meeting, Budapest, Hungary, 30 March-2 April 2015.

IV. Book chapter

C.Movileanu, D.Razus, **V.Giurcan**, V.Gosa, *Flame propagation of ethylene-air mixtures in closed tubes* in G.D. Roy, S.M. Frolov - Transient Combustion and Detonation Phenomena: Fundamentals and Applications, Torus Press, 2014.

V. Projects coordinator of:

1. Dynamics of pressure evolution during gaseous propane-air mixture explosions in spherical vessel with central ignition, Grant CNCSIS type TD, (GR 96/2007 and GR 44/2008);
2. Limiting conditions of explosion propagation in gaseous fuel-air and fuel-air-inert mixtures, Grant CNCSIS type PD, Project No. PN-II-RU-PD-2011-3-0053, 2011-2013.
3. Study on explosion characteristics of flammable mixtures resulting from the gasification process, bilateral Romania-Poland project, 2023-2025.

VI. Team member of:

1. Study of deflagration propagation parameters in multicomponent gaseous mixtures, Grant CNCSIS type A, 2005-2007, Project leader Dr. D. Razus;
2. Kinetic of the early stages of exothermic reaction with applications to establish the risk of explosion, Grant CNCSIS type A, 2005-2007, Project leader Prof. Dr. D. Oancea;
3. Propagation of the laminar deflagrations in fuel/air systems, at constant volume – Experimental study and kinetic modeling of combustion, Project type PN II-IDEI, 2009-2011, Project leader Dr. D. Razus.
4. Ternary alloy with antibacterial properties and non-toxic alloying elements for various implants), Project type PN-III-TE, 2020-2022, Project leader Dr. S.I. Drob.
5. Influence of hydrogen addition on the explosivity of LPG-air gaseous mixtures (H2_LPG_EX), Project type PN III-IDEI, 2022-2024, Director Dr. C. Movileanu.

VII. Mobility projects:

1. ICHMT Grant for participation to 8th Mediterranean Combustion Symposium, Izmir, Turkey, 2013;
2. Mobility Grant PN-III-P1-1.1-MC-2019-2553 for participation to XXIV International Symposium on Combustion Processes, Wrocław, Poland, 2019.

24.10.2024 Venera Giurcan