

## Gelu I. Paşa - list of publications.

1. Calculus of Taylor's vortices, *St. Cerc. Mat.*, 29(1977), 6, 679-691.
2. Homogénéisation de corps composites sous l'action des forces de grande fréquence spatiale, with Françoise Fleury and Dan Polisevski, *CRAS Paris*, **289**(1979), Série B, 241-244.
3. Macroscopic behavior of an heterogeneous medium, with Dan Polisevski, *St. Cerc. Mat.* **32**(1980), 4, 445-450.
4. Homogenization of a transmission problem with microscopic forces, with Dan Polisevski, *Numer. Funct. Anal. Optimiz.*, **3**(1981), 1, 95-104.
5. Lhomogénéisation dun problme non-linaire, *An. Univ. A. I. Cuza Iasi Sect. I a Mat.* **27** (1981), 2, 375-380.
6. Homogenization of a hydrodynamic model, with Dan Polisevski, *St. Cerc. Mat.*, 34(1982), 4, 361-366.
7. A convergence theorem for a periodic media with thermoelastical properties, *Int. J. Engng. Sci.*, **21**(1983), 11, 1313-1319.
8. Convergence et correcteurs pour des équations avec termes libres oscillant rapidement, *CRAS Paris Série I Math.* **299**(1984), 20, 1037-1039.
9. The Homogenization Method - applications for the composite materials, *Monograph*, with prof. univ. dr. Horia Ene, Publ. House of Romanian Academy, 1987, 168 p.
10. On a rotational flow, *St. Cerc. Mat.*, **39**(1987), 6, 543-544.
11. On the effective coefficients of fiber - reinforced materials, *St. Cerc. Mat.*, **39**(1987), 4, 354-372.
12. About an averaging method, *St. Cerc. Mat.*, **41**(1989), 1, 41-46.
13. Bounds for effective coefficients of periodic fiber-reinforced materials, *SIAM J. Math. Analysis*, **20**(1989), 1, 106-115.
14. 1992. Bounds for effective coefficients of a periodic material in the non-symmetric case, *St. Cerc. Mat.*, **44**(1992), 2, 135-140.
15. Instability of interfaces in oil recovery, with Dan Polisevski, *Int. J. Engng. Sci.*, **30**(1992), 2, 161-167.
16. Estimations for non-symmetric effective coefficients, *SIAM J. Appl. Math.*, **54**(1994), 3, 731-737.
17. An existence theorem for a problem in oil recovery, *Rev. Roum. Sci.*

Techn. Mach. Appl., **39**(1994), 2, 173-181.

18. An existence theorem for a control problem in oil recovery, Numer. Funct. Anal. Optimiz., **17**(1996), 9-10, 911-923.

19. On the macroscopic domain of plasticity, Rev. Roum. Sci. Techn. Mech. Appl., **41**(1996), 3-4, 233-239.

20. A control problem depending on the coefficients, arising from an industrial process, with Claude Carasso, An. Univ. A. I. Cuza, Iași, **42**(1996), 2, 343 - 353.

21. Borne supérieure optimale pour le tenseur de perméabilité, with Claude Carasso, CRAS Paris, Série II b **323**(1996), 6, 19 Septembre, 385-390.

22. An optimal viscosity profile in the secondary oil recovery, with Claude Carasso, RAIRO M2AN (Modélisation Mathématique et Analyse Numérique), **32**(1998), 2, 211-221.

23. Approximate Computation of the Permeability Tensor of a Periodic Porous Medium, with Claude Carasso, Numer. Funct. Anal. Optimiz., **20**(1999), 7-8, 651-660.

24. A modified Green function for a control problem in oil recovery, with Claude Carasso, Journal CMAME - Comput. Meth. Appl. Mech. Engng., **190**(2000), 8-10, 1197-1207.

25. The growth constant and Euler solution in Oil Recovery, Proc. Roum. Acad., **1**(2000), 2, 75-77.

26. A new expression for the permeability tensor of a periodic porous medium, Proc. Roum. Acad., **2**(2001), 3, 75-76.

27. Estimations for the Characteristic Values of a Sturm-Liouville problem, Z. Angewandte Math. Phys. (Basel), **53**(2002), 6, 973-979.

28. The control of Saffman-Taylor instability. Analysis and optimization of differential systems (Constanta, 2002), 291- 295, Kluwer Acad. Publ., Boston, MA, 2003.

29. A new optimal formula for the growth constant in Hele-Shaw instability, Transp. In Porous Media, **49**(2002), 1, 27-40.

30. Linear Stability in Oil recovery, Rev. Roum. Math. Pures Appl., **48**(2003), 2, 193-204.

31. Flow of a fluid through a fabric the sweat problem, with C. Carasso and M. Panfilov, Math. Rep. (Bucur.) **5(55)** (2003), 1, 27-35.

32. An optimal viscosity profile in enhanced oil recovery by polymer flooding, with P. Daripa, *Int. J. Engng. Sci.*, **42**(2004), 19-20, 2029-2039.
33. A class of viscosity profiles for oil displacement in porous media or Hele-Shaw cell, with Olivier Titaud, *Transp. in Porous Media*, **58**(2005),3, 269-286.
34. New bounds for stabilizing Hele-Shaw flow, with P. Daripa, *Appl. Math. Lett.*, **18**(2005), 11, 1293-1303.
35. On the growth rate for three layer Hele-Shaw flows; variable and constant viscosity cases, with P. Daripa, *Int. J. Engng. Sci.*, **43**(2005), 11-12, 877-884.
36. A simple derivation of an upper bound in the presence of a viscosity gradient in there-layer Hele-Shaw flows, with P. Daripa, *J. Stat. Mech.*, publ. 30 Jan. 2006, 11 pages, doi: 10.1088/1742-5468/01/P01014.
37. Stabilizing effect of diffusion in enhanced oil recovery and three-layer Hele-Shaw flows with viscosity gradient, with P. Daripa, *Transp. in Porous Media*, **70**(2007), 1, 11-23.
38. On capillary Slowdown of Viscous Fingering in Immiscible Displacement in Porous Media, with P. Daripa, *Transp. in Porous Media*, **75**(2008), 1, 1-16.
39. Stability results for several models of secondary oil recovery, *Math. Report (Bucur.)*, **10(60)**(2008), 2, 169-183.
40. Optimal relations between the parameters of a P.E.M. fuel cell, with A. Capatina, H.Ene, D.Polisevski, R. Stavre, *Math. Report (Bucur.)*, **10(60)**(2008), 4, 299-308.
41. Mathematical models for the P.E.M. fuel cells using sulfuretted hydrogen, with A. Capatina, H.Ene, D.Polisevski, R. Stavre, *Math. Report (Bucur.)*, **11(61)**(2009), 1, 1-10.
42. The thickening effect of interfacial surfactant in the drag-out coating problem, with P. Daripa, *J. Stat. Mech.*, publ. 2 July 2009, 10 pages, doi: 10.1088/1742-5468/2009/L07002.
43. The effect of surfactant on the motion of long bubbles in horizontal capillary tubes, with P. Daripa, *J. Stat. Mech.*, publ. 25 Febr. 2010, 12 pages, doi: 10.1088/1742-5468/2010/02/ L02002.
44. Stability Analysis of Diffusive Displacement in Three-Layer Hele-Shaw Cell or Porous Medium, *Transport in Porous Media*, **85**(2010), 1,

317-332.

45. On Diffusive Slowdown in Three-Layers Hele-Shaw Flows, with P. Daripa, Quarterly of Appl. Math., **LXVIII**(2010), 3, 591-606.

46. The effect of surfactant on the long bubbles in capillary tubes, with P. Daripa, J. Stat. Mech., publ. 10 Febr. 2011, 14 pages, doi: 10.1088/1742-5468/20011/L02003.

47. Variational approach and optimal control of a PEM fuel cell, with A. Capatina, H.Ene, D. Polisevski, R. Stavre, Nonlinear Analysis, **74** (2011), 10, 3242-3250.

48. Immiscible Hele-Shaw displacement with constant viscosity fluids, Bull. Transilv. Univ. Braşov Ser. III **5(54)** (2012), Special Issue: Proceedings of the Seventh Congress of Romanian Mathematicians, 225 - 230.

49. Surfactant effect on rising bubbles: a third order theory, Math. Rep. (Bucur.) **14(64)**(2012), 4, 333 - 344.

50. Stability Analysis and Surfactant Effect for Some Oil Recovery Models, *Monograph*, Lambert Academic Publishing AG & Co KG, 2012, 60 p.

51. A Growth Constant Formula for Generalized Saffman-Taylor Problem, Journal of Appl. Mech., **4**(2014), 1,1-11, doi:10.5923/j.am.20140401.01

52. Some diffusion effects in Hele-Shaw immiscible displacements. Ann. Univ. Buchar. Math. Ser. 5, **LXIII** (2014), 2, 357 - 365.

53. Saffman-Taylor Problem for a Non-Newtonian Fluid, Journal of Appl. Mech., **5**(2015), 2, 48-54, doi:10.5923/j.am.20150505.05.

54. Effect of variable surface tension in Landau-Levich problem, Mathematical Reports (Bucur.), **18(68)**(2016), 3, 363-375.

55. Some non-Newtonian effects in Hele-Shaw displacements, Revue Roumaine de Mathématiques Pures et Appliquées, **LXI**(2016), 4, 293-304.

56. On the stability of 3D immiscible displacement in Hele-Shaw cells, Int. Journal of Appl. Math.,**29**(2016), 3, 317-330.

57. On the displacement of two immiscible Stokes fluids in a 3D Hele-Shaw cell, Applied Sciences, Balkan Society of Geometers, Geometry Balkan Press, **19**(2017), 93-102.

58. An Instability Phenomenon in Hele-Shaw Displacements, Journal of Mathematics Research, **9**(2017), 6, 14-24.

59. Wetting-layer effects on Hele-Shaw flow, Rev. Roumaine Math. Pures Appl. **63**(2018), 2, 161-178.

60. Some models for immiscible displacements in Hele-Shaw cells, An. Șt. Univ. Ovidius Constantța, **26**(2018), 2, 193-207.
61. A paradox in Hele-Shaw displacements, arXiv:1807.06591v1 [physics.flu-dyn] - 17 July 2018.
62. A strong contradiction in multi-layer Hele-Shaw flow, arXiv:1903.01455 [physics.flu-dyn] - 4 Mar 2019.
63. On the displacement of two immiscible Oldroyd-B fluids in a Hele-Shaw cell, Ann. Dell ' Università di Ferrara, <https://doi.org/10.1007/s11565-019-00320-7>. First Online: 24 June 2019.

*Papers published in Proceedings of International Conferences*

1. 1990. Bounds for homogenized coefficients in the non-symmetric case, Proc. Conf. "VII<sup>e</sup> Journées Nat. sur les Composites", Lyon, 725-733.
2. 1992. Estimation and calculation of effective coefficients of a periodic composite material, Proc. Symp. "Experimental Techniques in Composite Materials", Cagliari, 269-275.
3. 1999. Linear Stability in Secondary Oil Recovery, Proc. Conf. "Modern Approaches in Porous Media", Moscova, Rusia, 225-228.
4. 2003. The control of Saffman-Taylor instability, Proc. Conf. "Anal. Optimiz. and Diff. Systems", (Constanta, Romania, 2002), 291-295, Kluwer Acad. Publ. Boston, MA.
5. 2005. Secondary oil recovery and variable permeability, New Trends in Continuum Mechanics, Theta Ser. Adv. Math., 3, Theta, Bucharest.

*Contributions accepted to International Conferences*

- Int. Conf. Appl. Math. and Mechanics, Varna, Bulgaria, 1984.  
 Euromech 182, Bruxelles, Belgia, 1984.  
 ICCM (Int. Conf. Composites Materials), Honolulu, USA, 1990.  
 Conf. Nat. Analyse Numérique, France, 1997 - 1999,  
 Conf. Homogenization and Mult. Scales, Timisoara, Romania, 2001.  
 Conf. Franco - Chiliana Appl. Mathematics, Santiago, Chile, 2001.  
 Colloque Franco-Roumain, 2003, 2008, 2012, 2016.  
 Conf. of American Physical Society, Salt-Lake City, 2007.

Colloque Euromech 499, Lab. Energ. Mech. Theor. Appl. (LEMTA), Nancy, France, 2008.

Bulletin of the American Physical Society 62nd Annual Meeting of the APS Division of Fluid Dynamics Volume 54, Number 19 Sunday - Tuesday, November 22 - 24 2009 Minneapolis, Minnesota, with P. Daripa.

Enhanced Oil Recovery and Porous Media Flows, Porous Media Flows, Doha, Qatar, July 31 - August 2 2013, with P. Daripa.

Bulletin of the American Physical Society 66th Annual Meeting of the APS Division of Fluid Dynamics Volume 58, Number 18, Sunday - Tuesday, November 24 - 26 2013, Pittsburgh, Pennsylvania, with P. Daripa.

Bulletin of the American Physical Society, 67th Annual Meeting of the APS Division of Fluid Dynamics, Volume 59, Number 20, Sunday - Tuesday, November 23 - 25 2014, San Francisco, California, with P. Daripa.

Conferintele Caius Iacob (INCAS, Bucuresti): 2009-2019.

Congresele Matematicienilor Romani: 2003(Pitesti) - 2007(Bucuresti) - 2011(Brasov) - 2015(Iasi) - 2019 (Galati).