George Karapetsas

Associate Professor

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Education

Ph.D. in Chemical Engineering *2002 - 2007*
University of Patras, Department of Chemical Engineering *Greece*

MSc in Process Simulation, Optimization, and Control *2002 - 2004*
University of Patras, Department of Chemical Engineering *Greece*

Diploma in Chemical Engineering *1996 - 2002*
Aristotle University of Thessaloniki, Department of Chemical Engineering *Greece*

Current and Previous Positions

2023 – present	**Associate Professor**	
	Aristotle University of Thessaloniki, School of Chemical Engineering	
2018 – 2023	**Assistant Professor**	
	Aristotle University of Thessaloniki, School of Chemical Engineering	
2009 – 2018	**Post-doctoral researcher**	
	• Imperial College London, School of Chemical Engineering	(05/2009 – 12/2011)
	• University of Thessaly, School of Mechanical Engineering	(01/2012 – 01/2015)
	• National Technical University of Athens, School of Chemical Engineering	(01/2015 – 09/2015)
	• University of Patras, School of Chemical Engineering	(10/2015 – 01/2018)
2011 - 2013	**Academic Consultant**	
	Imperial Consultants, United Kingdom	
2008	**Chemical Analyst**	
	Greek Army	
Summer 2000	**Internship**	
	Air Liquide Hellas, Greece	

Scientific and Research Interests

- Momentum, heat and mass transfer applied to engineering and physics applications
- Interfacial and multiphase flows, phase change and effect of surfactants
- Thin films, complex rheology, flows induced by electric and magnetic fields
- Analytical methods for solving partial differential equations, perturbation methods
- Dynamical systems and stability analysis based on bifurcation theory
- Numerical methods for solving basic and applied problems (finite elements, finite differences, etc.), solution of large-scale problems, iterative techniques and preconditioning, eigenvalues and eigenvector calculations of large systems

My research interests focus on fluid mechanics, transport phenomena, and applied mathematics, with particular emphasis on understanding the fundamental mechanisms underlying interfacial and multiphase flows. My research is motivated by a wide array of technological and biological applications, including phase-change cooling, printing and coating technologies, efficient drug delivery, crude oil processing, polymer and food processing, microfluidics, and nanotechnology. The fascinating phenomena in liquid motion that arise in many of these applications are explored using advanced theoretical models. Solving these models typically involves a combination of analytical tools, such as asymptotics and perturbation theory, along with the development of efficient computational methods.

Honors & Awards

2024 The following publication:

- Z. Wang, **G. Karapetsas**, P. Valluri, C. Inoue, ”Flow Structure near Three Phase Contact Line of Low-Contact-Angle Evaporating Droplets” Appl. Phys. Lett. 124 (2024) 101603

has been selected as ***Editor's Pick*** in Appl. Phys. Lett. journal. It has also been selected in ***2024 Appl. Phys. Lett. Rising Stars Collection***. This highly selective collection consists of 57 total papers, just under 2% of the journal's annual total volume.

2019 The following publications:

- D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, 'Viscoelastic film flows over an inclined substrate with sinusoidal topography. I. Steady state', Phys. Rev. Fluids 4 (2019) 083303
- D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, 'Viscoelastic film flows over an inclined substrate with sinusoidal topography. II. Linear stability analysis', Phys. Rev. Fluids 4 (2019) 083304

were selected as ***Editors' Suggestion*** in Phys. Rev. Fluids journal.

2011 The following publication:

- **G. Karapetsas**, R. V. Craster and O. K. Matar, 'On the surfactant-enhanced spreading and superspreading of liquid drops on solid surfaces', J. Fluid Mech. 670 (2011) 5-37

was selected for the ***Focus on Fluids*** feature of this journal.

2007 The following presentation:

- Steady bubble rise and deformation in Bingham fluids and conditions for their entrapment with J. Tsamopoulos, Y. Dimakopoulos, N. Chatzidai and M. Pavlidis

received the ***Best paper award*** in the Conference on Viscoplasticity: from Theory to Application, Ticino, Switzerland, October 2007.

Research Grants Awarded

2018 **Dynamics of SPREADing on liquid substrates with complex rheology - (Grant No. 792)** *€180,000*
Hellenic Foundation for Research and Innovation (HFRI), Greece

2012 **Electrically Induced Flows of Viscoelastic Materials - (Grant No. PE8/906)** *€150,000*
General Secretariat for Research and Technology (GSRT), Greece

Participation in Research Projects

- Research & Innovation Foundation, Cyprus, ”Excellence Hubs” Programme (CoDeTHreE)
- Europeans Communitys Seventh Framework Programme (FP7/2007- 2013)/ERC grant agreement no. [240710]
- General Secretariat for Research and Technology, Ministry of Education, Greece, ”THALES” (COVISCO)
- Engineering and Physical Sciences Research Council (EPSRC) (EP/E056466/1)
- LIMMAT foundation under the grant MuSiComPS
- KARATHEODORI, Basic Research, 2003-2005 (Code: 568)
- General Secretariat for Research and Technology, Ministry of Education, Greece, PENED 2001 (Code: 01ED136)

Teaching Experience

2021 – present	**Unit Operations I**, Undergraduate course (5^{th} semester – compulsory)
2019 – present	**Unit Operations II**, Undergraduate course (6^{th} semester – compulsory)
2018 – 2022	**Transport Phenomena**, Postgraduate course (1^{st} semester – compulsory)
2018 – 2024	**Numerical Methods for Engineers**, Undergraduate course (4^{th} semester – compulsory)
2020 – 2021	**Chemical Engineering Laboratory I**, Undergraduate course (7^{th} semester – compulsory)
2019 – present	**Practical Training – Energy, Environment**, Undergraduate course ($\geq 8^{th}$ semester – elective)
2019 – 2020	**Introduction to Computing**, Undergraduate course (2^{nd} semester – compulsory)
2020	**Chemical Product and Plant Design Project I**, Undergraduate course (9^{th} semester – compulsory)
2021	**Chemical Product and Plant Design Project II**, Undergraduate course (10^{th} semester – compulsory)

Supervision and Mentoring

Post-doctoral researchers

2019 - 2022	**Chris Dritselis**, Aristotle University of Thessaloniki
2020 - 2021	**Sotiris Evgenides**, Aristotle University of Thessaloniki

PhD - in progress

2021 - present	**A. Malachtari**, Aristotle University of Thessaloniki, Flow of liquid films over compliant substrates. (Supervisor)
2021 - present	**S. Kavuri**, Indian Institute of Technology Hyderabad, Dynamics of freezing droplets. (Co-supervisor)
2022 - present	**D. Debnath**, University of Edinburgh, Evaporation of multiple droplets of a binary mixture of liquids. (Co-supervisor)

PhD - completed

2019 - 2024	**K. Thomson**, University of Edinburgh, Dynamics of evaporating drops comprising binary mixtures. (Co-supervisor)
2016 - 2019	**A. Williams**, University of Edinburgh, Evaporation of Binary Liquids: Planar Layers and Sessile Drops. (Co-supervisor)
2016 - 2019	**R. Nazareth**, University of Edinburgh, Multiphase Dynamics in Liquid Mixtures: Thermocapillary propulsion of bubbles and instabilities in evaporating layers. (Co-supervisor)
2013 - 2019	**D. Pettas**, University of Patras, Steady flow and stability analysis of a thin film over variable topography. (Co-supervisor)

Participation in the three-member committee of 3 PhD students and in the examination committees of 5 PhD students.

MSc theses - completed

June 2024	**H. Koufos**, Aristotle University of Thessaloniki, Stability of viscoelastic falling films (Supervisor)
March 2021	**C. Potamopoulos**, Aristotle University of Thessaloniki, Non isothermal bubble motion at a viscoplastic material (Supervisor)
June 2015	**D. Pettas**, University of Patras, Linear stability analysis of viscoelastic fluid extrusion through a planar die. (Co-supervisor)
Sept 2010	**R. Zhang**, Imperial College London, Modelling of hydrothermal waves in evaporating droplets. (Co-supervisor)

Participation in the examination committee of 1 MSc student.

Diploma theses - in progress

Expected in 2025	**S. Solomou**, Aristotle University of Thessaloniki, CFD modelling of microfluidic chip
Expected in 2025	**C. Evmoiridis**, Aristotle University of Thessaloniki, CFD model for drying sessile droplets
Expected in 2025	**P. Lazaridis**, Aristotle University of Thessaloniki, Evaporation of binary mixture droplets
Expected in 2025	**I. Gkllaftse**, Aristotle University of Thessaloniki, Time-dependent simulations of electrowetting

Diploma theses - completed

April 2024	**P. N. Angelopoulos**, Aristotle University of Thessaloniki, Droplet spreading on elasto-viscoplastic material
Nov 2023	**K. Theologou**, Aristotle University of Thessaloniki, Non-isothermal bubble rise in a viscoplastic medium
June 2023	**I. Tsakelidis**, Aristotle University of Thessaloniki, Simulations of evaporating droplets and deposition particles on elastic substrates
June 2023	**K. Alvanos**, Aristotle University of Thessaloniki, Model development for the simulation of evaporation phenomena in droplets.
Oct 2022	**A. Efthymiadou**, Aristotle University of Thessaloniki, Numerical simulation of the superspreading dynamics of surfactant laden droplets on solid surfaces
Mar 2022	**C. Sarakinou**, Aristotle University of Thessaloniki, Flow simulation of liquid drops in elasto-viscoplastic medium
Nov 2021	**A. Prasinou**, Aristotle University of Thessaloniki, Droplets spreading on viscoelastic substrates
Nov 2021	**M. Markopoulos**, Aristotle University of Thessaloniki, Simulation of the spreading of a liquid droplet on the surface of a suspended liquid film
Mar 2021	**A. Chatzis - Mpakratsas**, Aristotle University of Thessaloniki, Dynamics of a drying viscoelastic polymer solution
Mar 2021	**P. Spanidis**, Aristotle University of Thessaloniki, Stability study of an inclined viscoelastic falling film in three dimensions
Nov 2019	**A. Vadarlis**, Aristotle University of Thessaloniki, Effect of viscoelasticity on the stability characteristics of a drying polymer solution
Nov 2019	**E. Petlis**, Aristotle University of Thessaloniki, Linear stability of the flow of a viscoelastic film over an inclined substrate

Participation in the examination committee of $\sim$ 50 undergraduate students (diploma theses).

Reviewing

- **Reviewer for the following international scientific journals:**

  Journal of Fluid Mechanics, Physical Review Fluids, Physics of Fluids, Journal of Non-Newtonian Fluid Mechanics, Langmuir, Soft Matter, Scientific Reports, Applied Surface Science, International Journal of Heat and Mass Transfer, International Journal of Thermal Sciences, Chemical Engineering Science, Physical Review E, Chemical Engineering Journal, International Communications in Heat and Mass Transfer, Chemical Engineering Research and Design, Computer Methods in Applied Mechanics and Engineering, Microgravity Science and Technology, The European Physical Journal E, Experimental Thermal and Fluid Science, Computers and Mathematics with Applications, Tribology International, Fluid Dynamics Research, Journal of Engineering Mathematics
- **Reviewer for the following research funding organisations:**

  German Research Foundation (DFG), Czech Science Foundation (CSF)
- **Editorial board of:**

  Microfluidic Engineering and Process Intensification

Administrative Activities

Director of the A' Chemical Engineering Laboratory in Dept. of Chemical Engineering, AUTh (2024-present)

Member of the following committees in Dept. of Chemical Engineering, AUTh:

- Coordination Committee of Graduate Study Programme (2019-present)
- Organization, Informatics and Computer Center Committee (2020-present, Coordinator)
- Security and Building Maintenance Committee (2020-present, Coordinator)
- Academic calendar Committee (2020-present, Coordinator)

Membership in Professional Societies

- American Physical Society
- Hellenic Rheology Society
- Technical Chamber of Greece

Publications & Presentations

Summary (until November 2024)

Peer-reviewed articles:	46 published, 1 accepted, 2 submitted, 5 in preparation
Conference presentations:	129 given, 1 upcoming
Invited Lectures:	5 given
Citations of Journal articles (Google scholar):	1745
Hirsch index (Google scholar):	23
i10 index (Google scholar):	38
Citations of Journal articles (Scopus):	1416
Hirsch index (Scopus):	22
Citations of Journal articles (Web of Science):	1317
Hirsch index (Web of Science):	21

Articles in international refereed journals

Articles in preparation:

P5 A. Prasinou, M. Pavlidis, **G. Karapetsas**, "Spreading droplets on Newtonian and viscoelastic falling films" (Research Paper)

P4 K. Thomson, **G. Karapetsas**, Y. Kita, O. K. Matar, K. Sefiane, D. Orejon, and P. Valluri, "Stability of volatile evaporating sessile droplets comprising of binary mixtures" (Research Paper)

P3 D. Debnath, A. Malachtari, **G. Karapetsas**, D. Orejon, K. Sefiane, A. Amirfazli, O.K. Matar, and P. Valluri, "Evaporation dynamics of binary-mixture droplet population" (Research Paper)

P2 C. Dritselis, **G. Karapetsas**, "Spreading of liquid lenses on viscoplastic liquids" (Research Paper)

P1 A. Chatzis-Mpakratsas, T. Vadarlis, S. Yiantsios, **G. Karapetsas**, "Dynamics of a drying viscoelastic polymer solution" (Research Paper)

Articles submitted for publication:

S3 A. Malachtari, I. Tsakelidis, **G. Karapetsas**, "Evaporation of a thin particle-laden sessile droplet on a soft viscoelastic substrate" (submitted for publication to Phys. Rev. Fluids)

S2 S. Kavuri, C. S. Sharma, **G. Karapetsas**, K. C. Sahu, "Evaporation of sessile drops on a heated superhydrophobic substrate" (submitted for publication in Langmuir)

S1 S. Kavuri, **G. Karapetsas**, C. S. Sharma, K. C. Sahu, ”Evaporation-driven coalescence of two droplets undergoing freezing” accepted for publication in J. Fluid Mech.

Published articles:

J46 D. Pettas, **G. Karapetsas**, A. Syrakos, Y. Dimakopoulos and J. Tsamopoulos, ”Flow of Viscoelastic Films over Grooved Surfaces with Partial Wetting” J. Fluid Mech. 1000 (2024) A10

J45 Z. Wang, **G. Karapetsas**, P. Valluri, C. Inoue, ”Role of volatility and thermal properties in droplet spreading: a generalisation to Tanner’s law” J. Fluid Mech. 987 (2024) A15

J44 Z. Wang, **G. Karapetsas**, P. Valluri, C. Inoue, ”Flow Structure near Three Phase Contact Line of Low-Contact-Angle Evaporating Droplets” Appl. Phys. Lett. 124 (2024) 101603

J43 A. Malachtari, **G. Karapetsas**, ”Dynamics of the interaction of multiple evaporating droplets on compliant substrates” J. Fluid Mech. 978 (2024) A8

J42 C. M. Linares, Y. Psarellis, **G. Karapetsas**, E.D. Koronaki, I.G. Kevrekidis, ”Physics-agnostic and Physics-infused machine learning for thin films flows: modeling, and predictions from small data” J. Fluid Mech. 975 (2023) A41

J41 S. Kavuri, **G. Karapetsas**, C. S. Sharma, K. C. Sahu, ”Freezing of sessile droplet and frost halo formation” Phys. Rev. Fluids 8 (2023) 124003

J40 C. Dritselis, **G. Karapetsas**, ”Open-source finite volume solvers for multiphase (n-phase) flows involving either Newtonian or non-Newtonian complex fluid”, Computer & Fluids, 245 (2022) 105590

J39 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and Tsamopoulos, ”Stability analysis of a Newtonian film flow over hydrophobic micro-textured substrates”, Phys. Rev. Fluids 7 (2022) 034004

J38 A. Marousis, D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and Tsamopoulos, ”Stability analysis of viscoelastic film flows over an inclined substrate with rectangular trenches”, J. Fluid Mechanics 915 (2021) A98

J37 Z. Wang, **G. Karapetsas**, P. Valluri, K. Sefiane, A. Williams, Y. Takata, ”Dynamics of hygroscopic aqueous solution droplets undergoing evaporation or vapor absorption”, J. Fluid Mechanics 912 (2021) A2

J36 A. G. L. Williams, **G. Karapetsas**, D. Mamalis, K. Sefiane, O. K. Matar and P. Valluri, ”Spreading and retraction dynamics of sessile evaporating droplets comprising volatile binary mixtures”, J. Fluid Mechanics 907 (2020) A22

J35 R. Nazareth, **G. Karapetsas**, K. Sefiane, O. K. Matar and P. Valluri, ”Stability of slowly evaporating thin liquid films of binary mixtures”, Phys. Rev. Fluids 5 (2020) 104007

J34 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, ”Viscoelastic film flows over an inclined substrate with sinusoidal topography. I. Steady state”, Phys. Rev. Fluids 4 (2019) 083303

J33 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, ”Viscoelastic film flows over an inclined substrate with sinusoidal topography. II. Linear stability analysis”, Phys. Rev. Fluids 4 (2019) 083304

J32 **G. Karapetsas**, D. Photeinos, Y. Dimakopoulos, J. Tsamopoulos, ”Dynamics and motion of a gas bubble in a viscoplastic medium under acoustic excitation” J. Fluid Mechanics 865 (2019) 381-413

J31 M. Balla, M. K. Tripathi, K. C. Sahu, **G. Karapetsas**, O. K. Matar, ”Non-isothermal bubble rise dynamics in a self-rewetting fluid: three-dimensional effects” J. Fluid Mechanics 858 (2019) 689-713

J30 N. T. Chamakos, **G. Karapetsas**, A. G. Papathanasiou, ”Effect of substrate topography, material wettability and dielectric thickness on reversible electrowetting” Colloids & Surf. A 555 (2018) 595-604

J29 **G. Karapetsas**, N. T. Chamakos, A. G. Papathanasiou, ”Thermocapillary Droplet Actuation: Effect of Solid Structure and Wettability” Langmuir 33 (2017) 10838-10850

J28 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos, J. Tsamopoulos, ”On the degree of wetting of a slit by a liquid film flowing along an inclined plane” J. Fluid Mech. 820 (2017) 5-41

J27 **G. Karapetsas**, N. K. Lampropoulos, Y. Dimakopoulos, J. Tsamopoulos, ”Transient flow of gravity-driven viscous films over 3d patterned substrates: conditions leading to wenzel, cassie and intermediate states” Microfluidics & Nanofluidics, (2017) 21:17

J26 N. T. Chamakos, **G. Karapetsas** and A. G. Papathanasiou ”How asymmetric surfaces induce directional droplet motion” Colloids and Surfaces A: Physicochem. Eng. Aspects, 511 (2016) 180-189

J25 **G. Karapetsas**, K. C. Sahu, O. K. Matar, ”Evaporation of sessile droplets laden with particles and insoluble surfactants”, Langmuir, 32 (2016) 6871-6881

J24 M. Pavlidis, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, ”Steady viscoelastic film flow over 2d topography: II. The effect of capillarity, inertia and substrate geometry”, J. Non-Newt. Fluid Mech., 234 (2016) 201-214

J23 **G. Karapetsas**, N. T. Chamakos, A. G. Papathanasiou, ”Efficient modelling of droplet dynamics on complex surfaces” J. Phys.: Condens. Matter 28 (2016) 085101

J22 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos, J. Tsamopoulos, ”On the origin of extrusion instabilities: linear stability analysis of the viscoelastic die swell” J. Non-Newt.Fluid Mech. 224 (2015) 61-77

J21 M. K. Tripathi, K. C. Sahu, **G. Karapetsas** and O. K. Matar, ”Bubble rise dynamics in a viscoplastic material” J. Non-Newtonian Fluid Mech. 222 (2015) 217-226

J20 **G. Karapetsas** and V. Bontozoglou, ”Non-linear dynamics of a viscoelastic film subjected to a spatially periodic electric field ” J. Non-Newtonian Fluid Mech. 217 (2015) 1-13

J19 M. K. Tripathi, K. C. Sahu, **G. Karapetsas**, K. Sefiane and O. K. Matar, ”Non-isothermal bubble rise: non-monotonic dependence of surface tension on temperature ” J. Fluid Mech. 763 (2015) 82-108

J18 P. A.P. Swain, **G. Karapetsas**, O. K. Matar and K. C. Sahu, "Pressure-driven displacement of a viscoplastic material by a Newtonian fluid" European J. of Mech. B/Fluids 49 (2015) 197-207

J17 **G. Karapetsas**, K. C. Sahu, K. Sefiane and O. K. Matar, "Thermocapillary-driven motion of a sessile drop: effect of non-monotonic dependence of surface tension on temperature" Langmuir 30 (2014) 4310-4321

J16 **G. Karapetsas** and V. Bontozoglou, "The role of surfactants on the mechanism of the long-wave instability in liquid film flows", J. Fluid Mech. 741 (2014) 139-155

J15 P. Saenz, P. Valluri, K. Sefiane, **G. Karapetsas** and O. K. Matar "On phase change in Marangoni-driven flows and its effects on the hydrothermal-wave instabilities" Phys. Fluids 26 (2014) 024114

J14 **G. Karapetsas** and J. Tsamopoulos, "On the stick-slip flow from slit and cylindrical dies of a Phan-Thien and Tanner fluid model . II. Linear stability analysis", Phys. Fluids 25 (2013), 093105

J13 P. Saenz, P. Valluri, K. Sefiane, **G. Karapetsas** and O. K. Matar "Linear stability and numerical simulations of hydrothermal waves in planar liquid layers driven by thermocapillarity", Phys. Fluids 25 (2013) 094101

J12 **G. Karapetsas** and V. Bontozoglou , "The primary instability of falling films in the presence of soluble surfactants", J. Fluid Mech. 729 (2013) 123-150

J11 **G. Karapetsas**, K. C. Sahu and O. K. Matar "Effect of contact line dynamics on the thermocapillary motion of a droplet on an inclined plate.", Langmuir 29 (2013) 8892-8906

J10 **G. Karapetsas** and E. Mitsoulis, "Some experiences with the slip boundary condition in viscous and viscoelastic Flows", J. Non-Newtonian Fluid Mech. 198 (2013) 96-108

J9 Y. Dimakopoulos, **G. Karapetsas**, N. A. Malamataris and E. Mitsoulis, "The Free (Open) Boundary Condition at Inflow Boundaries", J. Non-Newtonian Fluid Mech. 188 (2012) 16-31

J8 **G. Karapetsas**, P. Valluri, K. Sefiane and O. Matar "Convective rolls and hydrothermal waves in the evaporation of sessile droplets", Langmuir 28 (2012) 11433-11439

J7 **G. Karapetsas**, R. V. Craster and O. K. Matar, 'Surfactant-driven dynamics on liquid lenses', Phys. Fluids 23 (2011) 122106

J6 **G. Karapetsas**, R. V. Craster and O. K. Matar, 'On the surfactant-enhanced spreading and superspreading of liquid drops on solid surfaces', J. Fluid Mech. 670 (2011) 5-37

J5 **G. Karapetsas** and J. Tsamopoulos, "On the stick-slip flow from slit and cylindrical dies of a Phan-Thien and Tanner fluid model . I. Steady state", Phys. Fluids 21 (2009) 123101-18

J4 J. Papaioannou, **G. Karapetsas**, Y. Dimakopoulos, J. Tsamopoulos, "Injection of a viscoplastic material inside a tube or between two parallel disks: Conditions for wall detachment of the advancing front", J. Rheol 53 (2009) 1155-1191

J3 **G. Karapetsas** and J. Tsamopoulos, "Steady extrusion of viscoelastic materials from an annular die", J. Non-Newt. Fluid Mech., 154 (2008) 136-152

J2 J. Tsamopoulos, Y. Dimakopoulos, N. Chatzidai, **G. Karapetsas**, M. Pavlidis, "Steady bubble rise and deformation in Newtonian and viscoplastic fluids and conditions for their entrapment", J. Fluid Mech. 601 (2008) 123-164

J1 **G. Karapetsas** and J. Tsamopoulos, "Transient squeeze flow of viscoplastic materials", J. Non-Newtonian Fluid Mech. 133 (2006) 35-56

	Journal Title	*Rank (Quartile, 2021)*	*Categories*	*Impact Factor (2021)*	*5-Year Impact Factor*	*Number published*
1	Journal of Fluid Mechanics	22/163 (Q1) 7/37 (Q1)	Mechanics Physics, Fluids & Plasma	4.245	4.471	15 + 1 (accepted)
2	Journal of Non-Newt. Fluid Mechanics	64/163 (Q2)	Mechanics	3.112	2.885	8
3	Physics of Fluids	14/163 (Q1) 3/37 (Q1)	Mechanics Physics, Fluids & Plasma	4.980	4.534	5
4	Langmuir	81/224 (Q2) 70/172 (Q2) 172/414 (Q2)	Chemistry, Multidisciplinary Chemistry, Physical Materials Science, Multidisciplinary	4.331	3.825	5
5	Physical Review Fluids	10/37 (Q2)	Physics, Fluids & Plasma	2.895	2.880	5
6	Colloids and Surfaces A: Physicochemical and Engineering Aspects	61/172 (Q2)	Chemistry, Physical	5.518	4.746	2
7	Journal of Rheology	30/163 (Q1)	Mechanics	4.534	4.453	1
8	Applied Physics Letters	12/67 (Q1)	Physics and Astronomy	4.000	3.700	1
9	Computer & Fluids	73/157 (Q2) 67/163 (Q2)	Computer Science, Interdisciplinary Applications Mechanics	3.077	3.167	1
10	Journal of Physics: Condensed Matter	39/79 (Q2)	Physics, Condensed Matter	2.745	2.935	1
11	European Journal of Mechanics B / Fluids	56/163 (Q2) 14/37 (Q2)	Mechanics Physics, Fluids & Plasma	2.731	2.731	1
12	Microfluidics & Nanofluidics	59/138 (Q2) 29/76 (Q2) 19/37 (Q3)	Nanoscience & Nanotechonology Nanoscience & Nanotechonology Physics, Fluids & Plasma	3.090	2.860	1

Conference presentations

C130 D. Debnath, A. Malachtari, **G. Karapetsas**, D. Orejon, K. Sefiane, A. Amirfazli, P. Valluri, "Evaporation dynamics of multiple binary mixture droplets", 12th International Conference on Multiphase Flow, May 2025, Toulouse, France

C129 S. Kavuri, **G. Karapetsas**, C. S. Sharma, K. C. Sahu, "Evaporation-driven coalescence of two droplets undergoing freezing", 77th Annual Meeting of the Division of Fluid Dynamics, November 2024, Salt Lake City, Utah, USA

C128 D. Debnath, A. Malachtari, **G. Karapetsas**, D. Orejon, K. Sefiane, A. Amirfazli, P. Valluri, "Evaporation-induced translation of Multiple Binary Droplets", 77th Annual Meeting of the Division of Fluid Dynamics, November 2024, Salt Lake City, Utah, USA

C127 A. Malachtari, I. Tsakelidis, **G. Karapetsas**,"Dynamics of drying particle-laden droplets on soft viscoelastic substrates", 1st European Fluid Dynamics Conference, September 2024, Aachen, Germany

C126 P. Angelopoulos, C. Dritselis, **G. Karapetsas**,"Spreading of a droplet on a elastoviscoplastic substrate", 14th Panhellenic Chemical Engineering Conference, May 2024, Thessaloniki, Greece

C125 A. Malachtari, I. Tsakelidis, **G. Karapetsas**,"Evaporation of a sessile droplet laden with PARTICLES on a soft viscoelastic substrate", 14th Panhellenic Chemical Engineering Conference, May 2024, Thessaloniki, Greece

C124 A. Malachtari, I. Tsakelidis, **G. Karapetsas**,"Dynamics of clean and particle-laden drying droplets on soft viscoelastic substrates", 76th Annual Meeting of the Division of Fluid Dynamics, November 2023, Washington DC, USA

C123 A. Malachtari, I. Tsakelidis, **G. Karapetsas**,"Dynamics of clean and particle-laden drying droplets on soft viscoelastic substrates", 76th Annual Meeting of the Division of Fluid Dynamics, November 2023, Washington DC, USA

C122 S. Kavuri, **G. Karapetsas**, C. S. Sharma, K. C. Sahu, "On the dynamics of freezing sessile droplets: Frost halo formation", 76th Annual Meeting of the Division of Fluid Dynamics, November 2023, Washington DC, USA

C121 K. Thomson, **G. Karapetsas**, Y. Kita, K. Sefiane, D. Orejon, P. Valluri, "Transient growth stability analysis of evaporating sessile drops comprising binary mixtures", 76th Annual Meeting of the Division of Fluid Dynamics, November 2023, Washington DC, USA

C120 D. Debnath, A. Malachtari, **G. Karapetsas**, K. Sefiane, D. Orejon, A. Amirfazli, P. Valluri, "Evaporating populations of sessile droplets comprising binary mixtures", 76th Annual Meeting of the Division of Fluid Dynamics, November 2023, Washington DC, USA

C119 Z. Wang, **G. Karapetsas**, P. Valluri, I. Chihiro, "Intricate Role of Thermal Properties and Volatility in Droplet Spreading: A Generalization to Tanner's Law", 76th Annual Meeting of the Division of Fluid Dynamics, November 2023, Washington DC, USA

C118 A. Malachtari, **G. Karapetsas**, "Evaporation of Multiple Droplets on a Soft Viscoelastic Substrate", 11th International Conference on Boiling and Condensation Heat Transfer, May 2023, Edinburgh, Scotland, UK

C117 K. Thomson, **G. Karapetsas**, O. K. Matar, Y. Kita, K. Sefiane, D. Orejon, P. Valluri, "Transient growth analysis of evaporating sessile drops comprising binary mixtures", 17th International Heat Transfer Conference, August 2023, Cape Town, South Africa

C116 C. M. Linares, E.D. Koronaki , Y. Psarellis, **G. Karapetsas**, I.G. Kevrekidis, "A machine learning approach to bridge the gap between the Kuramoto-Sivashinsky and the Navier-Stokes equations for thin film flow", 2022 AIChE Annual Meeting, November 2022, Phoenix, Arizona, USA

C115 Z. Wang, **G. Karapetsas**, P. Valluri, I. Chihiro, "Quantifying the interacting mechanisms in shape evolution of sessile volatile droplets", 75th Annual Meeting of the Division of Fluid Dynamics, November 2022, Indianapolis, Indiana, USA

C114 K. Thomson, A. G. Williams, **G. Karapetsas**, O. K. Matar, Y. Kita, K. Sefiane, D. Orejon, P. Valluri, "Transient growth stability analysis of evaporating sessile drops comprising binary mixtures", 75th Annual Meeting of the Division of Fluid Dynamics, November 2022, Indianapolis, Indiana, USA

C113 C. M. Linares, E.D. Koronaki , Y. Psarellis, **G. Karapetsas**, I.G. Kevrekidis, "From Navier-Stokes simulations for thin films to amplitude equations and back via physics-assisted machine-learning", 75th Annual Meeting of the Division of Fluid Dynamics, November 2022, Indianapolis, Indiana, USA

C112 A. Prasinou, M. Pavlidis, **G. Karapetsas**, "Dynamics of droplet spreading on weakly viscoelastic liquid films", 14th European Fluid Mechanics Conference, September 2022, Athens, Greece

C111 A. Malachtari, **G. Karapetsas**, "Spreading dynamics of evaporating droplets on compliant substrates", 14th European Fluid Mechanics Conference, September 2022, Athens, Greece

C110 C. M. Linares, E.D. Koronaki , Y. Psarellis, **G. Karapetsas**, I.G. Kevrekidis, "A machine learning approach to bridge the gap between the Kuramoto-Sivashinsky and the Navier-Stokes equations for thin film flow", 14th European Fluid Mechanics Conference, September 2022, Athens, Greece

C109 C. Dritselis, **G. Karapetsas**, "Dynamics of liquid lens spreading over a viscoplastic liquid substrate", 10th Hellenic Society of Rheology, June 2022, Skiathos, Greece

C108 A. Chatzis-Mpakratsas, T. Vadarlis, S. Yiantsios, **G. Karapetsas**, "Linear stability analysis and dynamics of a drying viscoelastic polymer solution", 13th Panhellenic Conference in Chemical Engineering, May 2022, Patras, Greece

C107 A. Malachtari, **G. Karapetsas**, "Spreading dynamics of evaporating droplets on compliant substrates", 13th Pan-

hellenic Conference in Chemical Engineering, May 2022, Patras, Greece

C106 K. Thomson, A. Williams, **G. Karapetsas**, O. Matar, Y. Kita, K. Sefiane, P. Valluri, "Stability of evaporating sessile drops comprising binary mixtures", 17th UK Heat Transfer Conference, April 2022, Manchester, United Kingdom

C105 C. Dritselis, **G. Karapetsas**, "Open-source finite volume solvers for the simulation of multiphase (n-phase) Newtonian/non-Newtonian fluid flows", 74th Annual Meeting of the APS Division of Fluid Dynamics, November 2021, Phoenix, Arizona, USA

C104 **G. Karapetsas**, G.-A. Ioannidis, "On the spreading of liquid lenses over rheologically complex liquid films", 74th Annual Meeting of the APS Division of Fluid Dynamics, November 2021, Phoenix, Arizona, USA

C103 K. Thomson, **G. Karapetsas**, O. Matar, P. Valluri, A. Williams, K. Sefiane, "Transient growth stability analysis of evaporating sessile drops comprising binary mixtures", 74th Annual Meeting of the APS Division of Fluid Dynamics, November 2021, Phoenix, Arizona, USA

C102 C. Dritselis and **G. Karapetsas**, "A numerical study of a droplet spreading between Newtonian and viscoplastic stratified fluids", 5th International Conference on Droplets, August 2021, Darmstadt (Virtual), Germany

C101 K. Thomson, A. Williams, **G. Karapetsas**, O. Matar, Y. Kita, K. Sefiane, P. Valluri, "Stability of evaporating drops comprising binary mixtures",5th International Conference on Droplets, August 2021, Darmstadt (Virtual), Germany

C100 G.-A. Ioannidis, O. K. Matar, **G. Karapetsas**, "Droplet spreading over a non-Newtonian liquid film" 73rd Annual Meeting of the APS Division of Fluid Dynamics, November 2020, Chicago (Virtual), USA

C99 C. Dritselis, **G. Karapetsas**, "Numerical study of non-linear dynamics of liquid lenses spreading over a viscoplastic liquid layer" 73rd Annual Meeting of the APS Division of Fluid Dynamics, November 2020, Chicago (Virtual), USA

C98 A. Hatzis-Mpakratsas, **G. Karapetsas**, "Dynamics of a drying viscoelastic polymer solution" 73rd Annual Meeting of the APS Division of Fluid Dynamics, November 2020, Chicago (Virtual), USA

C97 K. Thomson, A. Williams, **G. Karapetsas**, O. K. Matar, K. Sefiane, P. Valluri, "Stability of evaporating sessile drops comprising binary mixtures" 73rd Annual Meeting of the APS Division of Fluid Dynamics, November 2020, Chicago (Virtual), USA

C96 Z. Wang, **G. Karapetsas**, P. Valluri, K. Sefiane, Y. Takata, "Spreading of hygroscopic ionic solution droplets during vapor absorption" 73rd Annual Meeting of the APS Division of Fluid Dynamics, November 2020, Chicago (Virtual), USA

C95 **G. Karapetsas**, A. Vadarlis, "Effect of viscoelasticity on the stability characteristics of a drying polymer solution" 72nd Annual Meeting of the APS Division of Fluid Dynamics, November 2019, Seattle, USA

C94 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos, J. Tsamopoulos, "Flow stability of a liquid film partially wetting a substrate with rectangular trenches" 72nd Annual Meeting of the APS Division of Fluid Dynamics, November 2019, Seattle, USA

C93 R. Nazareth, **G. Karapetsas**, P. Saenz, O. Matar, K. Sefiane, P. Valluri, "The stability of evaporating binary liquid film heated from below" 72nd Annual Meeting of the APS Division of Fluid Dynamics, November 2019, Seattle, USA

C92 Z. Wang, **G. Karapetsas**, P. Valluri, A. Williams, K. Sefiane, Y. Takata, "Lubrication model for vapor absorption into hygroscopic liquid desiccant droplets" 72nd Annual Meeting of the APS Division of Fluid Dynamics, November 2019, Seattle, USA

C91 A. Williams, **G. Karapetsas**, P. Saenz, O. Matar, K. Sefiane, P. Valluri, "Stability of evaporating sessile drops comprising binary mixtures" 72nd Annual Meeting of the APS Division of Fluid Dynamics, November 2019, Seattle, USA

C90 Z. Wang, G. Karapetsas, P. Valluri, A. Williams, K. Sefiane, Y. Takata, "Lubrication model for vapor absorption into hygroscopic liquid desiccant droplets" 16th UK Heat Transfer Conference, September 2019, Nottingham, United Kingdom

C89 D. Pettas, **G. Karapetsas**, J. Tsamopoulos, "Stability of a viscoelastic film flowing over a substrate with sinusoidal corrugations" 12th Panhellenic scientific conference in Chemical Engineering, Athens, May 2019

C88 **G. Karapetsas**, J. Tsamopoulos, D. Pettas, "Stability of film flow over a substrate with rectangular trenches forming air inclusions" 12th Panhellenic scientific conference in Chemical Engineering, Athens, May 2019

C87 **G. Karapetsas**, A. Williams, P. Saenz, O. Matar, K. Sefiane, P. Valluri, "Evaporation of binary sessile drops" 12th Panhellenic scientific conference in Chemical Engineering, Athens, May 2019

C86 Z. Wang, **G. Karapetsas**, P. Valluri, A. Williams, K. Sefiane and Y. Takata, "Lubrication model for vapor absorption into hygroscopic liquid desiccant droplets" 16th UK Heat Transfer Conference, September 2019, Nottingham, UK

C85 A. Williams, P. Saenz, **G. Karapetsas**, K. Sefiane, O. K. Matar, P. Valluri, "Evaporation of binary mixtures: pools and droplets" 16th International Heat Transfer Conference, August 2018, Beijing, China

C84 M. K. Tripathi, M. Balla, K. C. Sahu, **G. Karapetsas**, O. K. Matar, "Non-isothermal bubble rise dynamics in a self-rewetting fluid at high Marangoni numbers" 71st Annual Meeting of the APS Division of Fluid Dynamics, November 2018, Atlanta, USA

C83 R. Nazareth, **G. Karapetsas**, S. Harish, D. Orejon, K. Sefiane, P. Valluri, "The stability of evaporating binary liquid film heated from below" 71st Annual Meeting of the APS Division of Fluid Dynamics, November 2018, Atlanta, USA

C82 **G. Karapetsas**, D. Photeinos, Y. Dimakopoulos, J. Tsamopoulos, “Use of acoustic excitation to enhance the mobility of buoyancy driven bubbles inside a viscoplastic material” 71st Annual Meeting of the APS Division of Fluid Dynamics, November 2018, Atlanta, USA

C81 A. Williams, **G. Karapetsas**, P. Saenz, O. K. Matar, K. Sefiane, P. Valluri, “Spreading and evaporation of sessile drops comprising binary mixture” 71st Annual Meeting of the APS Division of Fluid Dynamics, November 2018, Atlanta, USA

C80 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos, J. Tsamopoulos, “Linear stability of viscoelastic film flow over structured surfaces” 71st Annual Meeting of the APS Division of Fluid Dynamics, November 2018, Atlanta, USA

C79 **G. Karapetsas**, D. Photeinos, Y. Dimakopoulos, J. Tsamopoulos, “Acoustic excitation of a bubble inside a viscoplastic medium” 12th European Fluid Mechanics Conference, September 2018, Vienna, Austria

C78 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos, J. Tsamopoulos, “Stability analysis of viscoelastic fluid over a structured topography” 12th European Fluid Mechanics Conference, September 2018, Vienna, Austria

C77 N. T. Chamakos, **G. Karapetsas**, A. G. Papathanasiou, “Mechanisms of wetting transitions of electrowetting on patterned surfaces: effect of surface topography, material wettability and dielectric thickness on reversibility” Electrowetting conference – 11th International conference, June 2018, Twente, Netherlands

C76 **G. Karapetsas**, N. T. Chamakos, A. G. Papathanasiou, “Thermocapillary droplet actuation on structured solid surfaces” 70th Annual Meeting of the APS Division of Fluid Dynamics, November 2017, Denver, USA

C75 Y. Dimakopoulos, D. Pettas, **G. Karapetsas**, J. Tsamopoulos, “Linear Stability analysis of a Newtonian film flowing over a substrate with topographical features” 70th Annual Meeting of the APS Division of Fluid Dynamics, November 2017, Denver, USA

C74 A. Williams, P. Saenz, **G. Karapetsas**, O. K. Matar, K. Sefiane, P. Valluri, “Lubrication model for evaporation of binary sessile drops” 70th Annual Meeting of the APS Division of Fluid Dynamics, November 2017, Denver, USA

C73 M. Tripathi, A. R. Premlata, **G. Karapetsas**, K. C. Sahu, O. K. Matar, “Non-isothermal bubble rise dynamics in a self-rewetting fluid” 70th Annual Meeting of the APS Division of Fluid Dynamics, November 2017, Denver, USA

C72 **G. Karapetsas**, N. Lampropoulos, Y. Dimakopoulos, J. Tsamopoulos, ”Transient coating of substrates with variable topography by viscous films: 3D simulations” 11th Panhellenic scientific conference in Chemical Engineering, Thessaloniki, May 2017

C71 A. Georgantaki, **G. Karapetsas**, M. Vlachogiannis and V. Bontozoglou, “Liquid film flow with soluble surfactants: Theory and experiment”, International Conference on Multiphase Flow, May 2016, Firenze, Italy

C70 N. Chamakos, **G. Karapetsas** and A. G. Papathanasiou, “Modelling of droplet mobility on bio-inspired asymetrically structured substrates”, Smart and Green Interfaces Conference, May 2016, Athens, Greece

C69 **G. Karapetsas**, K. C. Sahu and O. K. Matar, “Dynamics of surfactant-laden evaporating droplets”, 68th Annual Meeting of the APS Division of Fluid Dynamics, November 2015, Boston, USA

C68 D. Mamalis, K. Sefiane, K. C. Sahu, **G. Karapetsas** and O. K. Matar, “Non-isothermal spreading dynamics of self-rewetting droplets”, 68th Annual Meeting of the APS Division of Fluid Dynamics, November 2015, Boston, USA

C67 A. Premlata, M. Tripathi, K. C. Sahu, **G. Karapetsas**, K. Sefiane, O. K. Matar, “Threedimensional simulations of a rising bubble in a self-rewetting fluid”, 68th Annual Meeting of the APS Division of Fluid Dynamics, November 2015, Boston, USA

C66 **G. Karapetsas**, N. T. Chamakos, A. G. Papathanasiou, ”Effect of substrate topography on the thermocapillary migration of droplets under microgravity”, 22nd ELGRA Symposium and General Assembly Sept 2015, Corfu, Greece

C65 **G. Karapetsas**, V. Bontozoglou, “Non-linear dynamics of a viscoelastic film subjected to a spatially periodic electric field”, Conference on Modelling Fluid Flow (CMFF’15), Sept 2015, Budapest, Hungary

C64 N. T. Chamakos, **G. Karapetsas**, M. Kavousanakis, A. G. Papathanasiou, “Efficient modelling of droplet spreading on rough surfaces”, 8th GRACM International Congress on Computational Mechanics, July 2015, Volos, Greece

C63 **G. Karapetsas**, V. Bontozoglou, “The effect of soluble surfactants on the linear stability of liquid film flow”, 8th GRACM International Congress on Computational Mechanics, July 2015, Volos, Greece

C62 **G. Karapetsas** and V. Bontozoglou, “Non-linear evolution of a viscoelastic film under the influence of DC and AC electric fields”, 10th Panhellenic Scientific Chemical Engineering Congress, June 2015, Patras, Greece

C61 **G. Karapetsas**, N. T. Chamakos, A. G. Papathanasiou, “Modelling droplet interaction with flat or structured solid surfaces”, 10th Panhellenic Scientific Chemical Engineering Congress, June 2015, Patras, Greece

C60 N. T. Chamakos, **G. Karapetsas**, M. Kavousanakis, A. G. Papathanasiou, “Droplet passive movement on asymmetric patterned surfaces”, 10th Panhellenic Scientific Chemical Engineering Congress, June 2015, Patras, Greece

C59 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, “Linear stability analysis of the viscoelastic extrusion flow from a planar die”, 10th Panhellenic Scientific Chemical Engineering Congress, June 2015, Patras, Greece

C58 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, “Linear stability analysis of viscoelastic fluid extrusion through a planar die”, 10th Annual European Rheology Conference AERC, April 2015, Nantes, France

C57 **G. Karapetsas**, N. T. Chamakos, M. E. Kavousanakis and A. G.Papathanasiou, “Modeling of dynamic contact lines”, Smart and Green Interfaces Conference - 2015, Joint with COST MP1106 Annual MC meeting, March 2015, Belgrade, Serbia

C56 **G. Karapetsas** and V. Bontozoglou “Non-linear evolution of the electrohydrodynamic instability of a Newtonian

or viscoelastic film under a spatially periodic electric field" FLOW 2014, December 2014, Athens, Greece

C55 D. Pettas, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos "Linear stability of the viscoelastic extrusion flow from a slit die" FLOW 2014, December 2014, Athens, Greece

C54 M. Tripathi, K. C. Sahu, **G. Karapetsas** and O. K. Matar "The dynamics of rising bubble inside a viscoplastic material" 67th Annual Meeting of the APS Division of Fluid Dynamics, November 2014, San Fransisco, California, USA

C53 O. K. Matar, M. Tripathi, K. C. Sahu, **G. Karapetsas** and K. Sefiane "Thermocapillary motion of bubble under the action of gravity in a self-rewetting fluid" 67th Annual Meeting of the APS Division of Fluid Dynamics, November 2014, San Fransisco, California, USA

C52 **G. Karapetsas** & V. Bontozoglou "Non-linear dynamics of viscoelastic liquid trilayers subjected to an electric field" 67th Annual Meeting of the APS Division of Fluid Dynamics, November 2014, San Fransisco, California, USA

C51 C. Dritselis, **G. Karapetsas** & V. Bontozoglou "Non-linear dynamics of viscous bilayers subjected to an electric field: 3D phase field simulations" 67th Annual Meeting of the APS Division of Fluid Dynamics, November 2014, San Fransisco, California, USA

C50 K. C. Sahu, M. Tripathi, O. K. Matar and **G. Karapetsas** "Numerical simulation of rising bubble with chemical reaction" 67th Annual Meeting of the APS Division of Fluid Dynamics, November 2014, San Fransisco, California, USA

C49 **G. Karapetsas** and V. Bontozoglou, "Non-linear dynamics of the electro-hydrodynamic patterning of viscoelastic materials" EFMC10 – European Fluid Mechanics Conference, September 2014, Copenhagen, Denmark

C48 **G. Karapetsas** and V. Bontozoglou, "The effect of soluble surfactants on the linear stability of liquid film flow" EFMC10 – European Fluid Mechanics Conference, September 2014, Copenhagen, Denmark

C47 **G. Karapetsas** and V. Bontozoglou, "A numerical study of electrohydrodynamic patterning of viscoelastic materials" 7th Conference of the International Marangoni Association, June 2014, Vienna, Austria, p.68

C46 **G. Karapetsas** and V. Bontozoglou, "The primary instability of falling films in the presence of soluble surfactants", 10th HSTAM 2013 International Congress on Mechanics, 25-27 May 2013, Chania, Greece

C45 **G. Karapetsas**, M. Tripathi, K. C. Sahu and O. K. Matar, Bubble rise in the presence of chemical reactions and non-newtonian effects, 2014 INNFM Meeting on Rheometry and General Rheology, April 2014, UK

C44 P. A.P. Swain, **G. Karapetsas**, O. K. Matar and K. C. Sahu, "Pressure-driven displacement of a viscoplastic material by a Newtonian fluid" 66th Annual Meeting of the APS Division of Fluid Dynamics, November 2013, Pittsburgh, Pennsylvania, USA

C43 V. Bontozoglou and **G. Karapetsas**, "The stabilizing mechanism of surfactants in falling films" 66th Annual Meeting of the APS Division of Fluid Dynamics, November 2013, Pittsburgh, Pennsylvania, USA

C42 K. Sefiane, M. Tripathi, K. C. Sahu, **G. Karapetsas** and O. K. Matar, "Bubble rise in a non- isothermal channel with a non-monotonic dependence of the surface tension on temperature" 66th Annual Meeting of the APS Division of Fluid Dynamics, November 2013, Pittsburgh, Pennsylvania, USA

C41 M. Tripathi, K. C. Sahu, **G. Karapetsas** and O. K. Matar, "Numerical simulation of a bubble rising in an unconfined viscoplastic fluid with chemical reaction" 66th Annual Meeting of the APS Division of Fluid Dynamics, November 2013, Pittsburgh, Pennsylvania, USA

C40 P. Saenz, P. Valluri, K. Sefiane, **G. Karapetsas**, J. Kim and O. K. Matar, "Dynamics of evaporating sessile droplets" 66th Annual Meeting of the APS Division of Fluid Dynamics, November 2013, Pittsburgh, Pennsylvania, USA

C39 J. Tsamopoulos and **G. Karapetsas**, "Linear stability analysis of the stick-slip flow of a viscoelastic fluid following the Phan-Thien Tanner model" 66th Annual Meeting of the APS Division of Fluid Dynamics, November 2013, Pittsburgh, Pennsylvania, USA

C38 **G. Karapetsas**, K. C. Sahu, K. Sefiane and O. K. Matar, "Thermocapillary-driven motion of a droplet on an inclined substrate: contact line dynamics, and non-monotonic dependence of surface tension on temperature" 66th Annual Meeting of the APS Division of Fluid Dynamics, November 2013, Pittsburgh, Pennsylvania, USA

C37 **G. Karapetsas** and V. Bontozoglou, "Linear stability of falling films in the presence of soluble surfactants", 27th European Colloid and Interface Society (ECIS) Conference, September 2013, Sofia, Bulgaria

C36 **G. Karapetsas**, K. C. Sahu and O. K. Matar, "The effect of varying substrate wettability on the thermocapillary motion of droplets", 27th European Colloid and Interface Society (ECIS) Conference, September 2013, Sofia, Bulgaria

C35 E. Mitsoulis and **G. Karapetsas**, "Some experiences with slip boundary condition in viscous and viscoelastic flows", Annual European Rheology Conference, April 2013, Leuven, Belgium

C34 **G. Karapetsas**, K. Sahu and O. K. Matar, "Thermocapillary motion of a droplet on an inclined plate" 65th Annual Meeting of the APS Division of Fluid Dynamics, November 2012, San Diego, California, USA, p. 261

C33 A. Georgantaki, **G. Karapetsas** and V. Bontozoglou, "Dynamics of an inclined film in the presence of soluble surfactants" 65th Annual Meeting of the APS Division of Fluid Dynamics, November 2012, San Diego, California, USA, p. 374

C32 P. Saenz, P. Valluri, K. Sefiane, **G. Karapetsas** and O. K. Matar, "On phase change in thermocapillary flows" 65th Annual Meeting of the APS Division of Fluid Dynamics, November 2012, San Diego, California, USA, p. 317

C31 K. Sefiane, P. Saenz, P. Valluri, **G. Karapetsas** and O. K. Matar, "Two-phase investigation of hydrothermal waves

in saturated interfaces" 65th Annual Meeting of the APS Division of Fluid Dynamics, November 2012, San Diego, California, USA, p. 260

C30 **G. Karapetsas**, A. Georgantaki and V. Bontozoglou, "Dynamics of a surfactant-laden falling film", International Focus Workshop on Multiscale Complex Fluid Flows and Interfacial Phenomena, October 2012, Dresden, GERMANY

C29 **G. Karapetsas**, R. V. Craster and O. K. Matar, "Spreading, retraction and sustained oscillations of surfactant-laden lenses", 64th Annual Meeting of the APS Division of Fluid Dynamics, November 2011, Baltimore, Maryland, USA, p. 94

C28 **G. Karapetsas**, P. Valluri, K. Sefiane and O. K. Matar, "Convective rolls and hydrothermal waves in evaporating sessile drops", 64th Annual Meeting of the APS Division of Fluid Dynamics, November 2011, Baltimore, Maryland, USA, p.94

C27 P. Saenz, **G. Karapetsas**, P. Valluri, K. Sefiane and O. K. Matar, "Numerical study of thermocapillary instabilities in evaporating annular pools and sessile droplets", 64th Annual Meeting of the APS Division of Fluid Dynamics, November 2011, Baltimore, Maryland, USA, p. 201

C26 **G. Karapetsas**, R. V. Craster and O. K. Matar, "Dynamics of surfactant-laden drops on liquid substrates", Bifurcations and Instabilities in Fluid Dynamics, July 2011, Barcelona, SPAIN

C25 **G. Karapetsas**, K. Sefiane, R. V. Craster and O. K. Matar, "Linear stability analysis on the evaporation of sessile drops: formation of hydrothermal waves", Bifurcations and Instabilities in Fluid Dynamics, July 2011, Barcelona, SPAIN

C24 **G. Karapetsas**, R. V. Craster and O. K. Matar, "Surfactant-induced superspreading of liquid drops on solid substrates", 63nd Annual meeting of the APS division of fluid dynamics, November 2010, Long Beach, California, USA, p. 110

C23 **G. Karapetsas**, P. Saenz, K. Sefiane, P. Valluri, O. Matar, "Numerical study of the evaporation of sessile drops: formation of hydrothermal waves", 63nd Annual meeting of the APS division of fluid dynamics, November 2010, Long Beach, California, USA, p. 65

C22 P. Saenz, P. Valluri, **G. Karapetsas**, K. Sefiane and O. K. Matar, "Hydrothermal waves in evaporating annular pools and sessile drops using DNS", 63nd Annual meeting of the APS division of fluid dynamics, November 2010, Long Beach, California, USA, p. 403

C21 **G. Karapetsas**, O. K. Matar and R. V. Craster, "Surfactant enhanced spreading of liquid drops on solid surfaces", 8th International Conference of Computational Methods in Sciences and Engineering, ICCMSE 2010, Kos, Greece, October 2010

C20 **G. Karapetsas**, R. V. Craster and O. K. Matar, "Spreading of surfactant-laden drops on solid surfaces", 24th European Colloid and Interface Society (ECIS) Conference 2010, Prague, CZECH REPUBLIC

C19 **G. Karapetsas** & J. Tsamopoulos, "Linear stability analysis for the stick-slip flow in cylindrical or planar die of a viscoelastic fluid", 7th Panhellenic scientific conference in Chemical Engineering, Patras, June 2009

C18 I. Papaioannou, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, "Injection molding of a viscoplastic material in a cylindrical pipe or between two parallel disks", 7th Panhellenic scientific conference in Chemical Engineering, Patras, June 2009

C17 J. Papaioannou, **G. Karapetsas**, Y. Dimakopoulos and J. Tsamopoulos, "Injection of a viscoplastic material inside a pipe or in the space between two parallel disks: Conditions for wall detachment", AERC 2009, 6th Annual European Rheology Conference, Cardiff, UK, April 2009

C16 **G. Karapetsas** and J. Tsamopoulos "Linear stability analysis of the cylindrical or planar stick-slip flow for a PTT fluid model", 6th Annual European Rheology Conference, AERC, Cardiff, UK, April 2009

C15 J. Tsamopoulos, Y. Dimakopoulos, N. Chatzidai, **G. Karapetsas** and M. Pavlidis, "Steady bubble rise and deformation in Bingham fluids and conditions for their entrapment", 4th Annual European Rheology Conference, AERC, Napoli, ITALY, April 2007, p. 227

C14 J. Tsamopoulos, Y. Dimakopoulos, N. Chatzidai, **G. Karapetsas** and M. Pavlidis, "Steady bubble rise and deformation in Newtonian and Bingham fluids and conditions for their entrapment", 6th European congress of chemical engineering, Copenhagen, Denmark, September 2007, p. 245, vol. 2

C13 J. Tsamopoulos, Y. Dimakopoulos, N. Chatzidai, **G. Karapetsas** and M. Pavlidis, "Steady bubble rise and deformation in Bingham fluids and conditions for their entrapment", XVth International Workshop on Numerical Methods for non-Newtonian Flows, Rhodes, GREECE, June 2007, p. 42

C12 **G. Karapetsas** & J. Tsamopoulos, "Axisymmetric linear stability analysis of the extrusion of viscoelastic materials through an annular die", 6th Panhellenic scientific conference in Chemical Engineering, Athens, May 2007

C11 M. Pavlidis, **G. Karapetsas**, N. Chatzidai, Y. Dimakopoulos and J. Tsamopoulos, "Steady flow, deformation and entrapment of bubbles in a viscoplastic fluid", 6th Panhellenic scientific conference in Chemical Engineering, Athens, May 2007, p. 1057

C10 N. Chatzidai, **G. Karapetsas**, M. Pavlidis, Y. Dimakopoulos και J. Tsamopoulos, "Flow and deformation of a bubble rising in a viscoplastic material", FLOW 2006, Patras, November.2006, p. 17

C9 **G. Karapetsas** & J. Tsamopoulos, "Axisymmetric linear stability analysis for the extrusion of viscoelastic fluids", FLOW 2006, Patras, November. 2006, p. 18

C8 **G. Karapetsas** and J. Tsamopoulos, "Viscoelastic simulations of the extrudate swell problem using the PTT

model", 6th EUROMECH Fluid Mechanics Conference, Stockholm, SWEDEN, June 2006, p. 267

C7 **G. Karapetsas** and J. Tsamopoulos, "A numerical study of extrudate swell for viscoelastic fluids", AERC 2006, 3nd Annual European Rheology Conference, Hersonisos, GREECE, April 2006, p. 18

C6 **G. Karapetsas** & J. Tsamopoulos, "Squeeze flow of viscoplastic materials fully accounting for the highly deforming domain of the material", 5th GRACM International Congress on Computational Mechanics, Limassol, CYPRUS, July 2005, p. 613-620

C5 **G. Karapetsas** & J. Tsamopoulos, "Transient simulation of the squeeze flow of a viscoplastic material between two parallel disks", 5th Panhellenic scientific conference in Chemical Engineering, Thessaloniki, May 2005. p. 797-800

C4 **G. Karapetsas** and J. Tsamopoulos, "Transient squeeze flow of viscoplastic materials", AERC 2005, 2nd Annual European Rheology Conference, Grenoble, FRANCE, April 2005, p. 163

C3 **G. Karapetsas** and J. Tsamopoulos, "Transient squeeze flow of viscoplastic materials", 77th Annual meeting of SOR (Society of Rheology), Vancouver, CANAΔA, October 16-20, 2005, p. 63

C2 **G. Karapetsas** & J. Tsamopoulos, "Transient simulation of the squeeze flow of a viscoplastic material between two parallel plates", FLOW 2004, Athens, November 2004, p. 252-259

C1 **G. Karapetsas**, N. Chatzidai, M. Pavlidis and J. Tsamopoulos, "Transient squeeze flow of viscoplastic liquids", HSR 2004, Athens, Greece, June 2004, p. 50

Invited lectures at Universities and Conferences

L5 ***Keynote Lecture***, 10th International Bifurcations and Instabilities in Fluid Dynamics Symposium, Edinburgh, June 2024, "Unravelling the complex dynamics of wetting and phase change"

L4 University of Edinburgh, School of Engineering, Edinburgh, United Kingdom, May 2016, "Droplet interaction with structured substrates"

L3 University of Patras, Department of Chemical Engineering, Rio, Greece, September 2013, "Interfacial flows, contact lines, evaporation and the Marangoni effect"

L2 7th International Conference Material Technologies and Modeling, Ariel, ISRAEL, August 2012, "Surfactant-assisted superspreading of liquid drops on dry substrates"

L1 Imperial College London, Department of Mathematics, London, UK, February 2011, "Dynamics of droplets on solid and liquid substrates"

Meetings organized - Sessions chaired

6. 14th Panhellenic Chemical Engineering Conference, Thessaloniki, Greece, May 2024, Member of the Organizing Committee and Chaired Sessions on "Transport Phenomena"
5. European Fluid Mechanics Conference, Athens, Greece, September 2022, Member of the Organizing Committee and Chaired Sessions on "Compressible flows 1", "General fluid dynamics 1" and "Porous media 1"
4. 13th Panhellenic Conference in Chemical Engineering, Patras, Greece, May 2022, Member of the scientific committee and Chaired Session on "Unit Operations"
3. 5th International Conference on Droplets, Darmstadt, Germany, August 2021, Chaired Session on "Droplets of Complex Fluids I"
2. 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, Georgia, USA, November 2018, Chaired Session on "Bubble Dynamics II"
1. European Fluid Mechanics Conference, Vienna, Austria, September 2018, Chaired Session on "Drops and bubbles 3"