

Viswanathan Shankar

List of Publications by Year in descending order

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65
papers

1,363
citations

279487

23
h-index

377514

34
g-index

68
all docs

68
docs citations

68
times ranked

656
citing authors

#	ARTICLE	IF	CITATIONS
1	Instability of the interface between thin fluid films subjected to electric fields. <i>Journal of Colloid and Interface Science</i> , 2004, 274, 294-308.	5.0	120
2	Viscoelastic Pipe Flow is Linearly Unstable. <i>Physical Review Letters</i> , 2018, 121, 024502.	2.9	58
3	Theory of linear viscoelasticity of semiflexible rods in dilute solution. <i>Journal of Rheology</i> , 2002, 46, 1111-1154.	1.3	56
4	Numerical simulation of mixing at $1\ \mu\text{m}$ and $1\ \mu\text{m}^2$ microfluidic junctions. <i>Chemical Engineering and Processing: Process Intensification</i> , 2014, 85, 227-240.	1.8	56
5	Viscoelasticity of dilute solutions of semiflexible polymers. <i>Physical Review E</i> , 2001, 64, 020802.	0.8	55
6	Electrohydrodynamic instability of a confined viscoelastic liquid film. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2007, 143, 120-130.	1.0	53
7	Stability of wall modes in fluid flow past a flexible surface. <i>Physics of Fluids</i> , 2002, 14, 2324.	1.6	49
8	Stability of non-parabolic flow in a flexible tube. <i>Journal of Fluid Mechanics</i> , 1999, 395, 211-236.	1.4	40
9	Instability and dynamics of thin viscoelastic liquid films. <i>European Physical Journal E</i> , 2006, 20, 185-200.	0.7	40
10	Stability of fluid flow in a flexible tube to non-axisymmetric disturbances. <i>Journal of Fluid Mechanics</i> , 2000, 407, 291-314.	1.4	39
11	Stability of fluid flow through deformable neo-Hookean tubes. <i>Journal of Fluid Mechanics</i> , 2009, 627, 291-322.	1.4	37
12	The centre-mode instability of viscoelastic plane Poiseuille flow. <i>Journal of Fluid Mechanics</i> , 2021, 915, .	1.4	36
13	Instability of viscoelastic plane Couette flow past a deformable wall. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2004, 116, 371-393.	1.0	35
14	Stability of pressure-driven flow in a deformable neo-Hookean channel. <i>Journal of Fluid Mechanics</i> , 2010, 659, 318-350.	1.4	32
15	Experimental study of the instability of laminar flow in a tube with deformable walls. <i>Physics of Fluids</i> , 2015, 27, .	1.6	31
16	Understanding viscoelastic flow instabilities: Oldroyd-B and beyond. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2022, 302, 104742.	1.0	31
17	Weakly nonlinear stability of viscous flow past a flexible surface. <i>Journal of Fluid Mechanics</i> , 2001, 434, 337-354.	1.4	30
18	Linear instability of viscoelastic pipe flow. <i>Journal of Fluid Mechanics</i> , 2021, 908, .	1.4	29

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19	Onset of transition in the flow of polymer solutions through microtubes. <i>Journal of Fluid Mechanics</i> , 2018, 844, 1052-1083.	1.4	28
20	Continuous Pathway between the Elasto-Inertial and Elastic Turbulent States in Viscoelastic Channel Flow. <i>Physical Review Letters</i> , 2021, 127, 134502.	2.9	28
21	Asymptotic analysis of wall modes in a flexible tube revisited. <i>European Physical Journal B</i> , 2001, 19, 607-622.	0.6	27
22	Elasto-inertial wall mode instabilities in viscoelastic plane Poiseuille flow. <i>Journal of Fluid Mechanics</i> , 2019, 881, 119-163.	1.4	27
23	Distinguishing thixotropy from viscoelasticity. <i>Journal of Rheology</i> , 2021, 65, 663-680.	1.3	27
24	Instabilities and pattern miniaturization in confined and free elastic-viscous bilayers. <i>Journal of Chemical Physics</i> , 2008, 128, 154909.	1.2	23
25	Consistent formulations for stability of fluid flow through deformable channels and tubes. <i>Journal of Fluid Mechanics</i> , 2017, 827, 31-66.	1.4	21
26	Stability of two-layer Newtonian plane Couette flow past a deformable solid layer. <i>Physics of Fluids</i> , 2004, 16, 4426-4442.	1.6	20
27	Suppression of instability in liquid flow down an inclined plane by a deformable solid layer. <i>Physical Review E</i> , 2006, 73, 016301.	0.8	20
28	Stability of gravity-driven free-surface flow past a deformable solid at zero and finite Reynolds number. <i>Physics of Fluids</i> , 2007, 19, 024105.	1.6	18
29	Stability of fluid flow through deformable tubes and channels: An overview. <i>Sadhana - Academy Proceedings in Engineering Sciences</i> , 2015, 40, 925-943.	0.8	17
30	Instability of high-frequency modes in viscoelastic plane Couette flow past a deformable wall at low and finite Reynolds number. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2005, 125, 121-141.	1.0	16
31	Absolute and convective instabilities in combined Couette-Poiseuille flow past a neo-Hookean solid. <i>Physics of Fluids</i> , 2017, 29, 124104.	1.6	16
32	Role of inertia and thixotropy in start-up flows of aging soft materials: Transient dynamics and shear banding in a rate-controlled flow field. <i>Journal of Rheology</i> , 2018, 62, 1001-1016.	1.3	16
33	Early transition, relaminarization and drag reduction in the flow of polymer solutions through microtubes. <i>Journal of Fluid Mechanics</i> , 2020, 885, .	1.4	15
34	Stability of two-layer viscoelastic plane Couette flow past a deformable solid layer. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2004, 117, 163-182.	1.0	14
35	Electric-field and contact-force induced tunable patterns in slipping soft elastic films. <i>Europhysics Letters</i> , 2010, 89, 36002.	0.7	14
36	Role of wall deformability on interfacial instabilities in gravity-driven two-layer flow with a free surface. <i>Physics of Fluids</i> , 2010, 22, .	1.6	14

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37	Suppression of purely elastic instabilities in the torsional flow of viscoelastic fluid past a soft solid. <i>Physics of Fluids</i> , 2013, 25, 124102.	1.6	13
38	Instability of viscous flow over a deformable two-layered gel: Experiments and theory. <i>Physical Review E</i> , 2014, 90, 043004.	0.8	13
39	Stability of flow through deformable channels and tubes: implications of consistent formulation. <i>Journal of Fluid Mechanics</i> , 2019, 860, 837-885.	1.4	13
40	Stability of plane Couette flow of a power-law fluid past a neo-Hookean solid at arbitrary Reynolds number. <i>Physics of Fluids</i> , 2017, 29, .	1.6	12
41	Effect of tangential interface motion on the viscous instability in fluid flow past flexible surfaces. <i>European Physical Journal B</i> , 2001, 23, 533-550.	0.6	10
42	Instability suppression in viscoelastic film flows down an inclined plane lined with a deformable solid layer. <i>Physical Review E</i> , 2007, 76, 046314.	0.8	10
43	CFD simulations to study the effects of wall protrusions on microfluidic mixing. <i>Journal of Micromechanics and Microengineering</i> , 2015, 25, 084008.	1.5	10
44	Elastohydrodynamic Suppression of Free-Surface Instabilities in Annular Liquid Film Flow Outside Wires and Inside Tubes. <i>Industrial & Engineering Chemistry Research</i> , 2008, 47, 6473-6485.	1.8	9
45	Stability of plane Couette flow of Carreau fluids past a deformable solid at arbitrary Reynolds numbers. <i>Physics of Fluids</i> , 2018, 30, .	1.6	8
46	Stability of two-layer viscoelastic plane Couette flow past a deformable solid layer: implications of fluid viscosity stratification. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2005, 125, 143-158.	1.0	7
47	Manipulation of instabilities in core-annular flows using a deformable solid layer. <i>Physics of Fluids</i> , 2013, 25, .	1.6	7
48	Passive manipulation of free-surface instability by deformable solid bilayers. <i>Physical Review E</i> , 2016, 94, 013111.	0.8	7
49	Suppression or enhancement of interfacial instability in two-layer plane Couette flow of FENE-P fluids past a deformable solid layer. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2007, 141, 43-58.	1.0	6
50	Planar equilibria of sessile and pendant liquid drops on geometrically non-linear elastic membranes. <i>Physics of Fluids</i> , 2018, 30, 082114.	1.6	6
51	Flow-induced resonant shear-wave instability between a viscoelastic fluid and an elastic solid. <i>Physics of Fluids</i> , 2019, 31, .	1.6	6
52	Consistent formulation of solid dissipative effects in stability analysis of flow past a deformable solid. <i>Physical Review Fluids</i> , 2016, 1, .	1.0	6
53	Onset of transient shear banding in viscoelastic shear start-up flows: Implications from linearized dynamics. <i>Journal of Rheology</i> , 2021, 65, 1391-1412.	1.3	6
54	Manipulation of interfacial instabilities by using a soft, deformable solid layer. <i>Sadhana - Academy Proceedings in Engineering Sciences</i> , 2015, 40, 1033-1048.	0.8	5

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55	Onset of transition in the flow of polymer solutions through deformable tubes. <i>Physics of Fluids</i> , 2019, 31, 114103.	1.6	3
56	Instability driven by shear thinning and elasticity in the flow of concentrated polymer solutions through microtubes. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	3
57	Instability induced by wall deformability in sliding Couette flow. <i>Physics of Fluids</i> , 2020, 32, .	1.6	3
58	Stability of flow in a deformable channel with an unrestrained boundary. <i>Physics of Fluids</i> , 2020, 32, 054107.	1.6	2
59	Stability of gravity-driven free-surface flow past a deformable solid: The role of depth-dependent modulus. <i>Physical Review E</i> , 2020, 101, 043107.	0.8	2
60	Electrohydrodynamic instability of confined viscoelastic liquid jets. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2021, 288, 104453.	1.0	2
61	Stability of plane Poiseuille flow of a Bingham fluid through a deformable neo-Hookean channel. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	2
62	A linear route to elasto-inertial turbulence. , 2022, 3, 100051.		2
63	Instability of ultrathin viscoelastic freestanding films. <i>Physics of Fluids</i> , 2021, 33, 032115.	1.6	1
64	Dynamics and shear banding in stress-controlled start-up shear flow of a model aging soft materials: the role of inertia and thixotropy. <i>Rheologica Acta</i> , 2022, 61, 355.	1.1	1
65	Suppression of Interfacial Instabilities using Soft, Deformable Solid Coatings. <i>Springer Tracts in Mechanical Engineering</i> , 2015, , 179-232.	0.1	0