Alejandro D Rey

List of Publications by Citations

185 papers	2,862 citations	26 h-index	41 g-index
194 ext. papers	3,307 ext. citations	3.6 avg, IF	5.85 L-index

#	Paper	IF	Citations
185	DYNAMICALPHENOMENA INLIQUID-CRYSTALLINEMATERIALS. *Annual Review of Fluid Mechanics*, **2002**, 34, 233-266	22	168
184	Liquid crystal models of biological materials and processes. *Soft Matter*, **2010**, 6, 3402	3.6	164
183	Effect of long range order on sheared liquid crystalline materials Part 1: compatibility between tumbling behavior and fixed anchoring. *Journal of Non-Newtonian Fluid Mechanics*, **1997**, 73, 127-152	2.7	96
182	Capillary models for liquid crystal fibers, membranes, films, and drops. *Soft Matter*, **2007**, 3, 1349-1368	3.6	77
181	Polymerization-Induced Phase Separation. 1. Droplet Size Selection Mechanism. *Macromolecules*, **1996**, 29, 8934-8941	5.5	71
180	Polymerization-Induced Phase Separation. 2. Morphological Analysis. *Macromolecules*, **1997**, 30, 2135-2143	5.5	70
179	Recent advances in theoretical liquid crystal rheology. *Macromolecular Theory and Simulations*, **1998**, 7, 623-639	1.5	67
178	Shear flows of nematic polymers. I. Orienting modes, bifurcations, and steady state rheological predictions. *Journal of Rheology*, **1993**, 37, 289-314	4.1	55
177	Invited review liquid crystal models of biological materials and silk spinning. *Biopolymers*, **2012**, 97, 374-396	2.2	39
176	Flow alignment in the helix uncoiling of sheared cholesteric liquid crystals. *Physical Review E*, **1996**, 53, 4198-4201	2.4	39
175	Viscoelastic theory for nematic interfaces. *Physical Review E*, **2000**, 61, 1540-9	2.4	38
174	Computational analysis of spinodal decomposition dynamics in polymer solutions. *Macromolecular Theory and Simulations*, **1995**, 4, 873-899	1.5	38
173	Point and ring defects in nematics under capillary confinement. *Journal of Chemical Physics*, **2007**, 127, 104902	3.9	36
172	Nanoscale analysis of defect shedding from liquid crystal interfaces. *Nano Letters*, **2007**, 7, 1474-9	11.5	35
171	Marangoni flow in liquid crystal interfaces. *Journal of Chemical Physics*, **1999**, 110, 9769-9770	3.9	34
170	Texture formation under phase ordering and phase separation in polymer-liquid crystal mixtures. *Journal of Chemical Physics*, **2004**, 121, 9733-43	3.9	33
169	Chiral front propagation in liquid-crystalline materials: Formation of the planar monodomain twisted plywood architecture of biological fibrous composites. *Physical Review E*, **2004**, 69, 011706	2.4	32

168	Defect controlled dynamics of nematic liquids. *Liquid Crystals*, **1990**, 7, 315-334	2.3	30
167	Phase equilibrium and structure formation in gold nanoparticles–nematic liquid crystal composites: experiments and theory. *Soft Matter*, **2012**, 8, 2860	3.6	29
166	Thermodynamics, Transition Dynamics, and Texturing in Polymer-Dispersed Liquid Crystals with Mesogens Exhibiting a Direct Isotropic/Smectic-A Transition. *Macromolecules*, **2009**, 42, 9486-9497	5.5	29
165	Cahn–Hoffman capillarity vector thermodynamics for curved liquid crystal interfaces with applications to fiber instabilities. *Journal of Chemical Physics*, **2002**, 117, 5062-5071	3.9	28
164	Theory of linear viscoelasticity of cholesteric liquid crystals. *Journal of Rheology*, **2000**, 44, 855-869	4.1	28
163	Texture rules for concentrated filled nematics. *Physical Review Letters*, **2005**, 95, 127802	7.4	27
162	Analysis of transient periodic textures in nematic polymers. *Liquid Crystals*, **1989**, 4, 409-422	2.3	27
161	Interfacial nematodynamics of heterogeneous curved isotropic-nematic moving fronts. *Journal of Chemical Physics*, **2006**, 124, 244902	3.9	26
160	Ringlike cores of cylindrically confined nematic point defects. *Journal of Chemical Physics*, **2007**, 126, 094907	3.9	26
159	Theoretical and Computational Rheology for Discotic Nematic Liquid Crystals. *Molecular Crystals and Liquid Crystals*, **2003**, 391, 57-94	0.5	26
158	Ideal Strength of Methane Hydrate and Ice Ih from First-Principles. *Crystal Growth and Design*, **2015**, 15, 5301-5309	3.5	25
157	Shear-induced textural transitions in flow-aligning liquid crystal polymers. *Physical Review E*, **2003**, 68, 061704	2.4	25
156	Simple shear and small amplitude oscillatory rectilinear shear permeation flows of cholesteric liquid crystals. *Journal of Rheology*, **2002**, 46, 225-240	4.1	25
155	Ab initio DFT study of structural and mechanical properties of methane and carbon dioxide hydrates. *Molecular Simulation*, **2015**, 41, 572-579	2	24
154	Growth and structure of nematic spherulites under shallow thermal quenches. *Continuum Mechanics and Thermodynamics*, **2007**, 19, 37-58	3.5	24
153	Mechanical model for anisotropic curved interfaces with applications to surfactant-laden liquid-liquid crystal interfaces. *Langmuir*, **2006**, 22, 219-28	4	24
152	Thermodynamics of soft anisotropic interfaces. *Journal of Chemical Physics*, **2004**, 120, 2010-9	3.9	24
151	Effect of Guest Size on the Mechanical Properties and Molecular Structure of Gas Hydrates from First-Principles. *Crystal Growth and Design*, **2017**, 17, 6407-6416	3.5	23

150	Structure and dynamics of biological liquid crystals. *Liquid Crystals*, **2014**, 41, 430-451	2.3	23
149	Liquid crystal model of membrane flexoelectricity. *Physical Review E*, **2006**, 74, 011710	2.4	23
148	Bifurcational analysis of the isotropic-nematic phase transition of rigid rod polymers subjected to biaxial stretching flow. *Macromolecular Theory and Simulations*, **1995**, 4, 857-872	1.5	23
147	Transient rheology of discotic mesophases. *Rheologica Acta*, **2003**, 42, 590-604	2.3	22
146	Mechanics of soft-solid-liquid-crystal interfaces. *Physical Review E*, **2005**, 72, 011706	2.4	21
145	Cahn-Hoffman capillarity vector thermodynamics for liquid crystal interfaces. *Physical Review E*, **2002**, 66, 021704	2.4	21
144	Young□aplace equation for liquid crystal interfaces. *Journal of Chemical Physics*, **2000**, 113, 10820-10822	3.9	21
143	Modelling complex liquid crystal mixtures: from polymer dispersed mesophase to nematic nanocolloids. *Molecular Simulation*, **2012**, 38, 735-750	2	20
142	Converging flow of tumbling nematic liquid crystals. *Liquid Crystals*, **1989**, 4, 253-272	2.3	19
141	Modeling Textural Processes during Self-Assembly of Plant-Based Chiral-Nematic Liquid Crystals. *Polymers*, **2010**, 2, 766-785	4.5	18
140	Polar fluid model of viscoelastic membranes and interfaces. *Journal of Colloid and Interface Science*, **2006**, 304, 226-38	9.3	18
139	Structural transformations and viscoelastic response of sheared fingerprint cholesteric textures. *Journal of Non-Newtonian Fluid Mechanics*, **1996**, 64, 207-227	2.7	18
138	Jeffrey-Hamel flow of Leslie-Ericksen nematic liquids. *Journal of Non-Newtonian Fluid Mechanics*, **1988**, 27, 375-401	2.7	18
137	Thermodynamic model of surfactant adsorption on soft liquid crystal interfaces. *Langmuir*, **2004**, 20, 11473-9	4	17
136	Nematostatics of triple lines. *Physical Review E*, **2003**, 67, 011706	2.4	17
135	Nemato-capillarity theory and the orientation-induced Marangoni flow. *Liquid Crystals*, **1999**, 26, 913-917	2.3	17
134	Computer simulation of dynamics and morphology of discotic mesophases in extensional flows. *Liquid Crystals*, **1995**, 18, 219-230	2.3	17
133	Atomistic modeling of structure II gas hydrate mechanics: Compressibility and equations of state. *AIP Advances*, **2016**, 6, 085317	1.5	17

132	Generalized cholesteric permeation flows. *Physical Review E*, **2002**, 65, 022701	2.4	16
131	Bifurcations and traveling waves in a delayed partial differential equation. *Chaos*, **1992**, 2, 231-244	3.3	16
130	Linear oscillatory dynamics of flexoelectric membranes embedded in viscoelastic media with applications to outer hair cells. *Journal of Non-Newtonian Fluid Mechanics*, **2012**, 185-186, 1-17	2.7	15
129	Linear viscoelastic model for bending and torsional modes in fluid membranes. *Rheologica Acta*, **2008**, 47, 861-871	2.3	15
128	Theory and Simulation of Cholesteric Film Formation Flows of Dilute Collagen Solutions. *Langmuir*, **2016**, 32, 11799-11812	4	14
127	Computational study of the elastic properties of Rheum rhabarbarum tissues via surrogate models of tissue geometry. *Journal of Structural Biology*, **2014**, 185, 285-94	3.4	14
126	Nanostructured free surfaces in plant-based plywoods driven by chiral capillarity. *Colloids and Interface Science Communications*, **2014**, 1, 23-26	5.4	14
125	Bioinspired model of mechanical energy harvesting based on flexoelectric membranes. *Physical Review E*, **2013**, 87, 022505	2.4	14
124	Energetics and dynamics of hydrogen adsorption, desorption and migration on a carbon-supported palladium cluster. *Journal of Materials Chemistry*, **2010**, 20, 10503		14
123	Computational modelling of nematic phase ordering by film and droplet growth over heterogeneous substrates. *Liquid Crystals*, **2007**, 34, 1397-1413	2.3	14
122	Relaxation dynamics in bio-colloidal cholesteric liquid crystals confined to cylindrical geometry. *Nature Communications*, **2020**, 11, 4616	17.4	14
121	Biological plywood film formation from para-nematic liquid crystalline organization. *Soft Matter*, **2017**, 13, 8076-8088	3.6	13
120	Nano-scale surface wrinkling in chiral liquid crystals and plant-based plywoods. *Soft Matter*, **2015**, 11, 1127-39	3.6	13
119	Thermodynamic Modelling of Phase Equilibrium in Nanoparticles Nematic Liquid Crystals Composites. *Molecular Crystals and Liquid Crystals*, **2012**, 553, 118-126	0.5	13
118	Steady state and transient rheological behavior of mesophase pitch, Part II: Theory. *Journal of Rheology*, **2005**, 49, 175-195	4.1	13
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116	Nematic contact lines and the Neumann and Young equations for liquid crystals. *Journal of Chemical Physics*, **1999**, 111, 7675-7684	3.9	13
115	Morphology of elastic nematic liquid crystal membranes. *Soft Matter*, **2017**, 13, 5366-5380	3.6	12

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113	Theory and modeling of nematic disclination branching under capillary confinement. *Soft Matter*, **2012**, 8, 11135	3.6	12
112	Thermodynamic Modeling of Polymer Solution Interface. *Macromolecular Theory and Simulations*, **2009**, 18, 127-137	1.5	12
111	Structure and rheology of fiber-laden membranes via integration of nematodynamics and membranodynamics. *Journal of Non-Newtonian Fluid Mechanics*, **2010**, 165, 32-44	2.7	12
110	Computational modelling of multi-phase equilibria of mesogenic mixtures. *Computational Materials Science*, **2004**, 29, 152-164	3.2	12
109	Elastic properties and anisotropic behavior of structure-H (sH) gas hydrate from first principles. *Chemical Engineering Science*, **2020**, 227, 115948	4.4	12
108	Two negative minima of the first normal stress difference in a cellulose-based cholesteric liquid crystal: Helix uncoiling. *Journal of Polymer Science, Part B: Polymer Physics*, **2017**, 55, 821-830	2.6	11
107	THF Hydrates as Model Systems for Natural Gas Hydrates: Comparing Their Mechanical and Vibrational Properties. *Industrial & Engineering Chemistry Research*, **2019**, 58, 16588-16596	3.9	11
106	Actuation of flexoelectric membranes in viscoelastic fluids with applications to outer hair cells. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2014**, 372,	3	11
105	Hedgehog defects in mixtures of a nematic liquid crystal and a non-nematogenic component. *Soft Matter*, **2012**, 8, 1395-1403	3.6	11
104	A Multiscale Mechanical Model for Plant Tissue Stiffness. *Polymers*, **2013**, 5, 730-750	4.5	11
103	Thermodynamic modelling of carbonaceous mesophase mixtures. *Liquid Crystals*, **2009**, 36, 75-92	2.3	11
102	Theory and Simulation of Gas Diffusion in Cholesteric Liquid Crystal Films. *Molecular Crystals and Liquid Crystals*, **1997**, 293, 87-109		11
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98	Radial creeping flow of rod-like nematic liquid crystals. *Journal of Rheology*, **1990**, 34, 425-467	4.1	11
97	Hydrogen-Bonded Liquid Crystal Nanocomposites. *Langmuir*, **2016**, 32, 8442-50	4	11

96	Molecular dynamics characterization of the water-methane, ethane, and propane gas mixture interfaces. *Chemical Engineering Science*, **2019**, 208, 114769	4.4	10
95	Molecular Dynamics Characterization of Temperature and Pressure Effects on the Water-Methane Interface. *Colloids and Interface Science Communications*, **2018**, 24, 75-81	5.4	10
94	Defect textures in polygonal arrangements of cylindrical inclusions in cholesteric liquid crystal matrices. *Soft Matter*, **2013**, 9, 1054-1065	3.6	10
93	A good and computationally efficient polynomial approximation to the Maier-Saupe nematic free energy. *Liquid Crystals*, **2011**, 38, 201-205	2.3	10
92	Metastable Nematic Preordering in Smectic Liquid Crystalline Phase Transitions. *Macromolecules*, **2009**, 42, 3841-3844	5.5	10
91	Entropic Behavior of Binary Carbonaceous Mesophases. *Entropy*, **2008**, 10, 183-199	2.8	10
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88	Multiscale Modeling and Simulation of Water and Methane Hydrate Crystal Interface. *Crystal Growth and Design*, **2019**, 19, 5142-5151	3.5	9
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84	Edge dislocation core structure in lamellar smectic-A liquid crystals. *Soft Matter*, **2010**, 6, 1117	3.6	9
83	A model for mesophase wetting thresholds of sheets, fibers and fiber bundles. *Soft Matter*, **2011**, 7, 5002	3.6	9
82	Dynamic interactions between nematic point defects in the spinning extrusion duct of spiders. *Journal of Chemical Physics*, **2006**, 124, 144904	3.9	9
81	Computational thermodynamics of multiphase polymer-liquid crystal materials. *Computational Materials Science*, **2006**, 38, 325-339	3.2	9
80	Line tension vector thermodynamics of anisotropic contact lines. *Physical Review E*, **2004**, 69, 041707	2.4	9
79	Impact of texture on stress growth in thermotropic liquid crystalline polymers subjected to step-shear. *Rheologica Acta*, **2004**, 44, 135-149	2.3	9

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76	Generalized Boussinesq-Scriven surface fluid model with curvature dissipation for liquid surfaces and membranes. *Journal of Colloid and Interface Science*, **2017**, 503, 103-114	9.3	8
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74	Dynamic wetting model for the isotropic-to-nematic transition over a flat substrate. *Soft Matter*, **2014**, 10, 1611-20	3.6	8
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70	Magnetic Field-Induced Shape Transitions in Multiphase Polymer-Liquid Crystal Blends. *Macromolecular Theory and Simulations*, **2006**, 15, 469-486	1.5	8
69	Generalized Young-Laplace Equation for Nematic Liquid Crystal Interfaces and its Application to Free-Surface Defects. *Molecular Crystals and Liquid Crystals*, **2001**, 369, 63-74		8
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67	Characterization of nucleation of methane hydrate crystals: Interfacial theory and molecular simulation. *Journal of Colloid and Interface Science*, **2019**, 557, 556-567	9.3	7
66	Effects of Sodium and Magnesium Cations on the Aggregation of Chromonic Solutions Using Molecular Dynamics. *Journal of Physical Chemistry B*, **2019**, 123, 1718-1732	3.4	7
65	Self-assembly via branching morphologies in nematic liquid-crystal nanocomposites. *Physical Review E*, **2014**, 90, 020501	2.4	7
64	Rheological Theory and Simulation of Surfactant Nematic Liquid Crystals **2012**, 21-77		7
63	Shape-dynamic growth, structure, and elasticity of homogeneously oriented spherulites in an isotropic/smectic-A mesophase transition. *Liquid Crystals*, **2009**, 36, 1125-1137	2.3	7
62	Interfacial Thermodynamics of Polymeric Mesophases. *Macromolecular Theory and Simulations*, **2004**, 13, 686-696	1.5	7
61	Mechanical Theory for Nematic Thin Films. *Langmuir*, **2001**, 17, 1922-1927	4	7

60	Nucleation and growth of cholesteric collagen tactoids: A time-series statistical analysis based on integration of direct numerical simulation (DNS) and long short-term memory recurrent neural network (LSTM-RNN). *Journal of Colloid and Interface Science*, **2021**, 582, 859-873	9.3	7
59	Molecular Dynamics Study of the Effect of l-Alanine Chiral Dopants on Diluted Chromonic Solutions. *Journal of Physical Chemistry B*, **2019**, 123, 8995-9010	3.4	6
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50	Geometric reconstruction of biological orthogonal plywoods. *Soft Matter*, **2016**, 12, 1184-91	3.6	5
49	Stress-sensor device based on flexoelectric liquid crystalline membranes. *ChemPhysChem*, **2014**, 15, 1405-12	3.1	5
48	Mechanical model for fiber-laden membranes. *Continuum Mechanics and Thermodynamics*, **2011**, 23, 45-61	3.5	5
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43	Structural properties of sH hydrate: a DFT study of anisotropy and equation of state. *Molecular Simulation*, **2019**, 45, 1524-1537	2	4

42	Surface Anchoring Effects on the Formation of Two-Wavelength Surface Patterns in Chiral Liquid Crystals. *Crystals*, **2019**, 9, 190	2.3	4
41	Non-classical scaling for forced wetting of a nematic fluid on a polymeric fiber. *Soft Matter*, **2009**, 5, 2277	3.6	4
40	Mechanical model for filament buckling and growth by phase ordering. *Langmuir*, **2008**, 24, 662-5	4	4
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38	Molecular mobility in carbon dioxide hydrates. *Molecular Systems Design and Engineering*, **2017**, 2, 500-506	4	3
37	Theory and simulation of ovoidal disclination loops in nematic liquid crystals under conical confinement. *Liquid Crystals*, **2015**, 42, 506-519	2.3	3
36	Extracting shape from curvature evolution in moving surfaces. *Soft Matter*, **2018**, 14, 1465-1473	3.6	3
35	Electrorheological Model Based on Liquid Crystals Membranes with Applications to Outer Hair Cells. *Fluids*, **2018**, 3, 35	1.6	3
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12	Defect Dynamics of a Nematic Polymer in a Magnetic Field. *Materials Research Society Symposia Proceedings*, **1990**, 209, 299		1
11	TinyLev acoustically levitated water: Direct observation of collective, inter-droplet effects through morphological and thermal analysis of multiple droplets.. *Journal of Colloid and Interface Science*, **2022**, 619, 84-95	9.3	1
10	Wrinkling pattern formation with periodic nematic orientation: From egg cartons to corrugated surfaces.. *Physical Review E*, **2022**, 105, 034702	2.4	0
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