John R Dutcher

List of Publications by Year
in descending order

72 papers	2,832 citations	156536 32 h-index	198040 52 g-index
72 all docs	72 docs citations	72 times ranked	4096 citing authors

#	ARTICLE	IF	CITATIONS
1	Transition in the Glassy Dynamics of Melts of Acid-Hydrolyzed Phytoglycogen Nanoparticles. Biomacromolecules, 2022, , .	2.6	5
2	Quantifying stabilizing additive hydrolysis and kinetics through principal component analysis of infrared spectra of cross-linked polyethylene pipe. Polymer Degradation and Stability, 2022, 200, 109963.	2.7	3
3	Deep Learning and Infrared Spectroscopy: Representation Learning with a Î²-Variational Autoencoder. Journal of Physical Chemistry Letters, 2022, 13, 5787-5793.	2.1	9
4	Correlation of mechanical and hydration properties of soft phytoglycogen nanoparticles. Carbohydrate Polymers, 2021, 251, 116980.	5.1	8
5	Force Spectroscopy Mapping of the Effect of Hydration on the Stiffness and Deformability of Phytoglycogen Nanoparticles. Biomacromolecules, 2021, 22, 2985-2995.	2.6	9
6	Hydration Water Structure, Hydration Forces, and Mechanical Properties of Polysaccharide Films. Biomacromolecules, 2020, 21, 4871-4877.	2.6	10
7	Technology readiness and overcoming barriers to sustainably implement nanotechnology-enabled plant agriculture. Nature Food, 2020, 1, 416-425.	6.2	239
8	Structure, Hydration, and Interactions of Native and Hydrophobically Modified Phytoglycogen Nanoparticles. Biomacromolecules, 2020, 21, 4053-4062.	2.6	19
9	Classifying formulations of crosslinked polyethylene pipe by applying machineâ€learning concepts to infrared spectra. Journal of Polymer Science, Part B: Polymer Physics, 2019, 57, 1255-1262.	2.4	10
10	Nanofibres induce remodelling of cell membranes. Nature, 2018, 563, 481-482.	13.7	0
11	Fundamental science and discoveries at the interface of microbiology and physics. Canadian Journal of Microbiology, 2018, 64, 639-641.	0.8	0
12	Ethylcellulose oleogels with extra virgin olive oil: the role of oil minor components on microstructure and mechanical strength. Food Hydrocolloids, 2018, 84, 508-514.	5.6	51
13	Unusual polysaccharide rheology of aqueous dispersions of soft phytoglycogen nanoparticles. Soft Matter, 2018, 14, 6496-6505.	1.2	28
14	Equilibrium Swelling, Interstitial Forces, and Water Structuring in Phytoglycogen Nanoparticle Films. Langmuir, 2017, 33, 2810-2816.	1.6	20
15	Correlation Between Chain Architecture and Hydration Water Structure in Polysaccharides. Biomacromolecules, 2016, 17, 1198-1204.	2.6	62
16	Structure and Hydration of Highly-Branched, Monodisperse Phytoglycogen Nanoparticles. Biomacromolecules, 2016, 17, 735-743.	2.6	70
17	Thickness-dependent mobility in tetracene thin-film field-effect-transistors. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2015, 33, 050604.	0.6	7
18	Nanoscale Pulling of Type IV Pili Reveals Their Flexibility and Adhesion to Surfaces over Extended Lengths of the Pili. Biophysical Journal, 2015, 108, 2865-2875.	0.2	32

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19	Proteome Profiles of Outer Membrane Vesicles and Extracellular Matrix of <i>Pseudomonas aeruginosa</i> Biofilms. Journal of Proteome Research, 2015, 14, 4207-4222.	1.8	75
20	Microstructure of ethylcellulose oleogels and its relationship to mechanical properties. Food Structure, 2014, 2, 27-40.	2.3	124
21	Nanomechanical response of bacterial cells to cationic antimicrobial peptides. Soft Matter, 2014, 10, 1806.	1.2	23
22	Advances in Surface Plasmon Resonance Imaging Enable Quantitative Tracking of Nanoscale Changes in Thickness and Roughness. Analytical Chemistry, 2014, 86, 3346-3354.	3.2	7
23	Direct in Situ Observation of Synergism between Cellulolytic Enzymes during the Biodegradation of Crystalline Cellulose Fibers. Langmuir, 2013, 29, 14997-15005.	1.6	36
24	Interactions of Thellungiella salsuginea dehydrins TsDHN-1 and TsDHN-2 with membranes at cold and ambient temperaturesâ€”Surface morphology and single-molecule force measurements show phase separation, and reveal tertiary and quaternary associations. Biochimica Et Biophysica Acta - Biomembranes, 2013, 1828, 967-980.	1.4	34
25	Electrochemical and PM-IRRAS Characterization of Cholera Toxin Binding at a Model Biological Membrane. Langmuir, 2013, 29, 965-976.	1.6	39
26	Infrared Studies of the Potential Controlled Adsorption of Sodium Dodecyl Sulfate at the Au(111) Electrode Surface. Langmuir, 2012, 28, 2455-2464.	1.6	38
27	Using Nanoscale Substrate Curvature to Control the Dimerization of a Surface-Bound Protein. ACS Nano, 2012, 6, 10571-10580.	7.3	13
28	Real-Time Observation of the Swelling and Hydrolysis of a Single Crystalline Cellulose Fiber Catalyzed by Cellulase 7B from Trichoderma reesei. Langmuir, 2012, 28, 9664-9672.	1.6	29
29	Surface plasmon resonance imaging of the enzymatic degradation of cellulose microfibrils. Analytical Methods, 2012, 4, 3238.	1.3	11
30	Probing protein conformations at the oil dropletâ€“water interface using single-molecule force spectroscopy. Soft Matter, 2011, 7, 10274.	1.2	10
31	Phosphorylation of <i>Thellungiella salsuginea</i> Dehydrins TsDHN-1 and TsDHN-2 Facilitates Cation-Induced Conformational Changes and Actin Assembly. Biochemistry, 2011, 50, 9587-9604.	1.2	38
32	Structure and Mechanism of the Saposin-like Domain of a Plant Aspartic Protease. Journal of Biological Chemistry, 2011, 286, 28265-28275.	1.6	36
33	Electric Field Driven Changes of a Gramicidin Containing Lipid Bilayer Supported on a Au(111) Surface. Langmuir, 2011, 27, 10072-10087.	1.6	44
34	Viscoelasticity of the bacterial cell envelope. Soft Matter, 2011, 7, 4101.	1.2	54
35	Zinc induces disorder-to-order transitions in free and membrane-associated Thellungiella salsuginea dehydrins TsDHN-1 and TsDHN-2: a solution CD and solid-state ATR-FTIR study. Amino Acids, 2011, 40, 1485-1502.	1.2	21
36	The interaction of zinc with membrane-associated 18.5ÂkDa myelin basic protein: an attenuated total reflectance-Fourier transform infrared spectroscopic study. Amino Acids, 2010, 39, 739-750.	1.2	28

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37	Direct Visualization of the Enzymatic Digestion of a Single Fiber of Native Cellulose in an Aqueous Environment by Atomic Force Microscopy. Langmuir, 2010, 26, 5007-5013.	1.6	26
38	Interactions of intrinsically disordered <i>Thellungiella salsuginea</i> dehydrins TsDHN-1 and TsDHN-2 with membranesÂâ€” synergistic effects of lipid composition and temperature on secondary structure. Biochemistry and Cell Biology, 2010, 88, 791-807.	0.9	58
39	Differential Lipopolysaccharide Core Capping Leads to Quantitative and Correlated Modifications of Mechanical and Structural Properties in <i>Pseudomonas aeruginosa</i> Biofilms. Journal of Bacteriology, 2009, 191, 6618-6631.	1.0	99
40	In Situ Characterization of Differences in the Viscoelastic Response of Individual Gram-Negative and Gram-Positive Bacterial Cells. Journal of Bacteriology, 2009, 191, 5518-5525.	1.0	70
41	In Situ PM-IRRAS Studies of an Archaea Analogue Thiolipid Assembled on a Au(111) Electrode Surface. Langmuir, 2009, 25, 10354-10363.	1.6	67
42	Molecular Resolution Imaging of an Antibiotic Peptide in a Lipid Matrix. Journal of the American Chemical Society, 2009, 131, 6439-6444.	6.6	50
43	Absolute Quantitation of Bacterial Biofilm Adhesion and Viscoelasticity by Microbead Force Spectroscopy. Biophysical Journal, 2009, 96, 2935-2948.	0.2	139
44	Dynamic viscoelastic behavior of individual Gram-negative bacterial cells. Soft Matter, 2009, 5, 5012.	1.2	32
45	pH-induced changes in adsorbed Î²-lactoglobulin molecules measured using atomic force microscopy. Soft Matter, 2009, 5, 220-227.	1.2	23
46	Electric Field Driven Conformational Changes of Gramicidin D in a Model Membrane Supported on a Au(111) Electrode Surface. Biophysical Journal, 2009, 96, 461a.	0.2	0
47	Surface Viscoelasticity of Individual Gram-Negative Bacterial Cells Measured Using Atomic Force Microscopy. Journal of Bacteriology, 2008, 190, 4225-4232.	1.0	115
48	Use of Atomic Force Microscopy and Transmission Electron Microscopy for Correlative Studies of Bacterial Capsules. Applied and Environmental Microbiology, 2008, 74, 5457-5465.	1.4	59
49	Measurement of the Charge Number Per Adsorbed Molecule and Packing Densities of Self-Assembled Long-Chain Monolayers of Thiols. Langmuir, 2007, 23, 6205-6211.	1.6	68
50	New Method to Measure Packing Densities of Self-Assembled Thiolipid Monolayers. Langmuir, 2006, 22, 5509-5519.	1.6	73
51	Effect of Changes in Relative Humidity and Temperature on Ultrathin Chitosan Films. Biomacromolecules, 2006, 7, 3460-3465.	2.6	64
52	Hole growth as a microrheological probe to measure the viscosity of polymers confined to thin films. Journal of Polymer Science, Part B: Polymer Physics, 2006, 44, 3011-3021.	2.4	27
53	Relative humidity control for atomic force microscopes. Review of Scientific Instruments, 2006, 77, 033704.	0.6	25
54	Glass transition temperature of freely-standing films of atactic poly(methyl methacrylate). European Physical Journal E, 2003, 12, 103-107.	0.7	115

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55	Dielectric relaxations in ultrathin isotactic PMMA films and PS-PMMA-PS trilayer films. European Physical Journal E, 2003, 12, 109-112.	0.7	41
56	Changes in the Morphology of Self-Assembled Polystyrene Microsphere Monolayers Produced by Annealing. Journal of Colloid and Interface Science, 2001, 243, 143-155.	5.0	20
57	Instabilities in thin polymer films: from pattern formation to rupture. Macromolecular Symposia, 2000, 159, 143-150.	0.4	16
58	Hole formation and growth in freely standing polystyrene films. Physical Review E, 1999, 59, 2153-2156.	0.8	73
59	Optical Probes of the Glass Transition in Thin Polymer Films. ACS Symposium Series, 1999, , 127-139.	0.5	4
60	Phase separation morphology of spin-coated polymer blend thin films. Physica A: Statistical Mechanics and Its Applications, 1997, 239, 87-94.	1.2	87
61	Brillouin Light Scattering Determination of the Glass Transition in Thin, Freely-Standing Poly(styrene) Films. Materials Research Society Symposia Proceedings, 1995, 407, 131.	0.1	11
62	Superlattice model for the elastic properties of polymeric Langmuir-Blodgett films. Physical Review Letters, 1993, 70, 2427-2430.	2.9	8
63	Origin of very large in-plane anisotropies in (110)-oriented Co/Pd and Co/Pt coherent superlattices. Physical Review B, 1993, 47, 6126-6129.	1.1	34
64	STUDY OF Co-BASED MULTILAYERS BY BRILLOUIN LIGHT SCATTERING. Journal of the Magnetics Society of Japan, 1993, 17, S1_17-22.	0.4	6
65	Characterization of the Structure and Interfaces in Metallic Superlattices. Materials Research Society Symposia Proceedings, 1990, 202, 691.	0.1	0
66	Elastic properties of Cuî—¸Co multilayers. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1990, 126, 13-18.	2.6	11
67	Brillouin scattering studies of the elastic properties of metallic superlattices. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 1990, 6, 199-204.	1.7	16
68	Structural and magnetic properties of Ti/Co multilayers. Journal of Applied Physics, 1990, 67, 4910-4912.	1.1	20
69	Enhancement of the c_{11} elastic constant of Ag/Pd superlattice films as determined from longitudinal guided modes. Physical Review Letters, 1990, 65, 1231-1234.	2.9	68
70	Dispersion and localization of guided acoustic modes in a Langmuir-Blodgett film studied by surface-plasmon-polariton-enhanced Brillouin scattering. Physical Review B, 1990, 41, 5382-5387.	1.1	9
71	Calculation of the intensity of light scattered from magnons in thin films. Journal of Magnetism and Magnetic Materials, 1988, 73, 299-310.	1.0	46
72	Dielectric relaxations in ultra-thin films of PMMA: assessing the length scale of cooperativity in the dynamic glass transition. , 0, , .		10