Wouter H Roos

List of Publications by Year
in descending order

76 papers	4,197 citations	94269 37 h-index	118652 62 g-index
78 all docs	78 docs citations	78 times ranked	4824 citing authors

#	Article	IF	Citations
1	Atomic force microscopy-based mechanobiology. Nature Reviews Physics, 2019, 1, 41-57.	11.9	500
2	Physical virology. Nature Physics, 2010, 6, 733-743.	6.5	311
3	High-resolution mass spectrometry of viral assemblies: Molecular composition and stability of dimorphic hepatitis B virus capsids. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 9216-9220.	3.3	204
4	Viral capsids: Mechanical characteristics, genome packaging and delivery mechanisms. Cellular and Molecular Life Sciences, 2007, 64, 1484-1497.	2.4	164
5	The role of the cytoskeleton in sensing changes in gravity by nonspecialized cells. FASEB Journal, 2014, 28, 536-547.	0.2	128
6	Scaffold expulsion and genome packaging trigger stabilization of herpes simplex virus capsids. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 9673-9678.	3.3	125
7	Norwalk Virus Assembly and Stability Monitored by Mass Spectrometry. Molecular and Cellular Proteomics, 2010, 9, 1742-1751.	2.5	118
8	Probing the biophysical interplay between a viral genome and its capsid. Nature Chemistry, 2013, 5, 502-509.	6.6	117
9	Mechanics of bacteriophage maturation. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 2342-2347.	3.3	106
10	Squeezing Protein Shells: How Continuum Elastic Models, Molecular Dynamics Simulations, and Experiments Coalesce at the Nanoscale. Biophysical Journal, 2010, 99, 1175-1181.	0.2	101
11	InÂVitro-Reconstituted Nucleoids Can Block Mitochondrial DNA Replication and Transcription. Cell Reports, 2014, 8, 66-74.	2.9	98
12	Elucidating the Mechanism behind Irreversible Deformation of Viral Capsids. Biophysical Journal, 2009, 97, 2061-2069.	0.2	94
13	VPS4 triggers constriction and cleavage of ESCRT-III helical filaments. Science Advances, 2019, 5, eaau7198.	4.7	84
14	Human ESCRT-III polymers assemble on positively curved membranes and induce helical membrane tube formation. Nature Communications, 2020, 11, 2663.	5.8	81
15	The fluid membrane determines mechanics of erythrocyte extracellular vesicles and is softened in hereditary spherocytosis. Nature Communications, 2018, 9, 4960.	5.8	79
16	Competition between Bending and Internal Pressure Governs the Mechanics of Fluid Nanovesicles. ACS Nano, 2017, 11, 2628-2636.	7.3	78
17	Integrin and Defensin Modulate the Mechanical Properties of Adenovirus. Journal of Virology, 2013, 87, 2756-2766.	1.5	76
18	Nanoindentation Studies Reveal Material Properties of Viruses. Advanced Materials, 2009, 21, 1187-1192.	11.1	70

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19	Ultraviolet-emitting ZnO nanowhiskers prepared by a vapor transport process on prestructured surfaces with self-assembled polymers. Journal of Applied Physics, 2003, 93, 6252-6257.	1.1	68
20	Imaging and manipulation of single viruses by atomic force microscopy. Soft Matter, 2010, 6, 5273.	1.2	67
21	Acetylation and phosphorylation of human TFAM regulate TFAMâ€“DNA interactions via contrasting mechanisms. Nucleic Acids Research, 2018, 46, 3633-3642.	6.5	63
22	Assembly and Mechanical Properties of the Cargo-Free and Cargo-Loaded Bacterial Nanocompartment Encapsulin. Biomacromolecules, 2016, 17, 2522-2529.	2.6	62
23	Physics of viral dynamics. Nature Reviews Physics, 2021, 3, 76-91.	11.9	58
24	Prestress Strengthens the Shell of Norwalk Virus Nanoparticles. Nano Letters, 2011, 11, 4865-4869.	4.5	55
25	Microtubule Gliding and Cross-Linked Microtubule Networks on Micropillar Interfaces. Nano Letters, 2005, 5, 2630-2634.	4.5	50
26	Dynamic kinesin-1 clustering on microtubules due to mutually attractive interactions. Physical Biology, 2008, 5, 046004.	0.8	50
27	Self-assembly and characterization of small and monodisperse dye nanospheres in a protein cage. Chemical Science, 2014, 5, 575-581.	3.7	50
28	Physical virology: From virus selfâ€assembly to particle mechanics. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, 2020, 12, e1613.	3.3	49
29	Nanomechanics of Extracellular Vesicles Reveals Vesiculation Pathways. Small, 2018, 14, e1801650.	5.2	48
30	Structural Transitions and Energy Landscape for Cowpea Chlorotic Mottle Virus Capsid Mechanics from Nanomanipulation inÂVitro and in Silico. Biophysical Journal, 2013, 105, 1893-1903.	0.2	47
31	Effects of Salts on Internal DNA Pressure and Mechanical Properties of Phage Capsids. Journal of Molecular Biology, 2011, 405, 18-23.	2.0	45
32	Nanocolloidal albumin-IRDye 800CW: a near-infrared fluorescent tracer with optimal retention in the sentinel lymph node. European Journal of Nuclear Medicine and Molecular Imaging, 2012, 39, 1161-1168.	3.3	44
33	Caught in the Act: Mechanistic Insight into Supramolecular Polymerization-Driven Self-Replication from Real-Time Visualization. Journal of the American Chemical Society, 2020, 142, 13709-13717.	6.6	44
34	Probing the impact of loading rate on the mechanical properties of viral nanoparticles. Micron, 2012, 43, 1343-1350.	1.1	43
35	Freely Suspended Actin Cortex Models on Arrays of Microfabricated Pillars. ChemPhysChem, 2003, 4, 872-877.	1.0	41
36	⁸⁹Zr-Nanocolloidal Albuminâ€“Based PET/CT Lymphoscintigraphy for Sentinel Node Detection in Head and Neck Cancer: Preclinical Results. Journal of Nuclear Medicine, 2011, 52, 1580-1584.	2.8	41

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37	A Theoretical Description of Elastic Pillar Substrates in Biophysical Experiments. ChemPhysChem, 2005, 6, 1492-1498.	1.0	40
38	Mechanical Characterization of Liposomes and Extracellular Vesicles, a Protocol. Frontiers in Molecular Biosciences, 2020, 7, 139.	1.6	40
39	Multilamellar nanovesicles show distinct mechanical properties depending on their degree of lamellarity. Nanoscale, 2018, 10, 5318-5324.	2.8	38
40	Real-Time Assembly of Viruslike Nucleocapsids Elucidated at the Single-Particle Level. Nano Letters, 2019, 19, 5746-5753.	4.5	37
41	Visualization of Single Molecules Building a Viral Capsid Protein Lattice through Stochastic Pathways. ACS Nano, 2020, 14, 8724-8734.	7.3	33
42	How to Perform a Nanoindentation Experiment on a Virus. Methods in Molecular Biology, 2011, 783, 251-264.	0.4	33
43	Vertex-Specific Proteins pUL17 and pUL25 Mechanically Reinforce Herpes Simplex Virus Capsids. Journal of Virology, 2017, 91, .	1.5	32
44	Unlocking Internal Prestress from Protein Nanoshells. Physical Review Letters, 2012, 109, 168104.	2.9	30
45	Probing cellular mechanics with acoustic force spectroscopy. Molecular Biology of the Cell, 2018, 29, 2005-2011.	0.9	27
46	Cell-assisted assembly of colloidal crystallites. Soft Matter, 2007, 3, 337-348.	1.2	25
47	Sampling Protein Form and Function with the Atomic Force Microscope. Molecular and Cellular Proteomics, 2010, 9, 1678-1688.	2.5	25
48	Controlled tip wear on high roughness surfaces yields gradual broadening and rounding of cantilever tips. Scientific Reports, 2016, 6, 36972.	1.6	24
49	De novo rational design of a freestanding, supercharged polypeptide, proton-conducting membrane. Science Advances, 2020, 6, eabc0810.	4.7	24
50	Revealing in real-time a multistep assembly mechanism for SV40 virus-like particles. Science Advances, 2020, 6, eaaz1639.	4.7	22
51	Mechanical Unfolding of an Autotransporter Passenger Protein Reveals the Secretion Starting Point and Processive Transport Intermediates. ACS Nano, 2016, 10, 5710-5719.	7.3	21
52	Effect of dsDNA on the Assembly Pathway andÂMechanical Strength of SV40 VP1 Virus-like Particles. Biophysical Journal, 2018, 115, 1656-1665.	0.2	21
53	Biomimetic Models of the Actin Cytoskeleton. Small, 2007, 3, 1015-1022.	5.2	20
54	Atomic Force Microscopy: An Introduction. Methods in Molecular Biology, 2018, 1665, 243-258.	0.4	20

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55	AFM nanoindentation of protein shells, expanding the approach beyond viruses. Seminars in Cell and Developmental Biology, 2018, 73, 145-152.	2.3	19
56	The effect of ethylene oxide, glow discharge and electron beam on the surface characteristics of poly(l-lactide-co-caprolactone) and the corresponding cellular response of adipose stem cells. Acta Biomaterialia, 2010, 6, 2060-2065.	4.1	18
57	A single point mutation in precursor protein VI doubles the mechanical strength of human adenovirus. Journal of Biological Physics, 2018, 44, 119-132.	0.7	18
58	Fluctuating Nonlinear Spring Model of Mechanical Deformation of Biological Particles. PLoS Computational Biology, 2016, 12, e1004729.	1.5	17
59	The ESCRT-III isoforms CHMP2A and CHMP2B display different effects on membranes upon polymerization. BMC Biology, 2021, 19, 66.	1.7	16
60	Control of septum thickness by the curvature of SepF polymers. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	16
61	Virus self-assembly proceeds through contact-rich energy minima. Science Advances, 2021, 7, eabg0811.	4.7	16
62	Synaptotagmin-1 and Doc2b Exhibit Distinct Membrane-Remodeling Mechanisms. Biophysical Journal, 2020, 118, 643-656.	0.2	13
63	Single Cell Reactomics: Realâ€Time Singleâ€Cell Activation Kinetics of Optically Trapped Macrophages. Small Methods, 2021, 5, e2000849.	4.6	13
64	Artificial Protein Cage with Unusual Geometry and Regularly Embedded Gold Nanoparticles. Nano Letters, 2022, 22, 3187-3195.	4.5	13
65	Material Properties of Viral Nanocages Explored by Atomic Force Microscopy. Methods in Molecular Biology, 2015, 1252, 115-137.	0.4	10
66	Probing the mechanical stability of bridged DNA-H-NS protein complexes by single-molecule AFM pulling. Scientific Reports, 2017, 7, 15275.	1.6	10
67	High-speed atomic force microscopy reveals a three-state elevator mechanism in the citrate transporter CitS. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	9
68	Single-particle fusion of influenza viruses reveals complex interactions with target membranes. Journal of Physics Condensed Matter, 2018, 30, 204005.	0.7	8
69	Elucidating the molecular mechanisms underlying cellular response to biophysical cues using synthetic biology approaches. Cell Adhesion and Migration, 2016, 10, 540-553.	1.1	7
70	AFM Nanoindentation Experiments on Protein Shells: A Protocol. Methods in Molecular Biology, 2019, 1886, 243-257.	0.4	6
71	Fluctuating nonlinear spring theory: Strength, deformability, and toughness of biological nanoparticles from theoretical reconstruction of force-deformation spectra. Acta Biomaterialia, 2021, 122, 263-277.	4.1	5
72	Role of Mechanical Properties of Cell Mediated Vesicles in Membrane Fusion. Biophysical Journal, 2013, 104, 620a.	0.2	4

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73	Freely Suspended Actin Cortex Models on Arrays of Microfabricated Pillars. ChemPhysChem, 2003, 4, 908-908.	1.0	1
74	Special Issue on the Physics of Viral Capsids. Journal of Physics Condensed Matter, 2018, 30, 290201.	0.7	1
75	Freestanding non-covalent thin films of the propeller-shaped polycyclic aromatic hydrocarbon decacyclene. Nature Communications, 2022, 13, 1920.	5.8	1
76	Probing the Unbinding Kinetics of DNA-H-NS-DNA Protein Complexes by a High-Speed and High-Throughput Single-Molecule Pulling Assay using Atomic Force Microscopy. Biophysical Journal, 2014, 106, 386a.	0.2	0