

Frank W Delrio

List of Publications by Year in descending order

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56
papers

2,283
citations

304743

22
h-index

214800

47
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57
all docs

57
docs citations

57
times ranked

3696
citing authors

#	ARTICLE	IF	CITATIONS
1	The role of van der Waals forces in adhesion of micromachined surfaces. <i>Nature Materials</i> , 2005, 4, 629-634.	27.5	501
2	Adsorption and Conformation of Serum Albumin Protein on Gold Nanoparticles Investigated Using Dimensional Measurements and in Situ Spectroscopic Methods. <i>Langmuir</i> , 2011, 27, 2464-2477.	3.5	359
3	Tissue geometry drives deterministic organoid patterning. <i>Science</i> , 2022, 375, eaaw9021.	12.6	186
4	Spatially patterned matrix elasticity directs stem cell fate. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E4439-45.	7.1	184
5	Fracture strength of micro- and nano-scale silicon components. <i>Applied Physics Reviews</i> , 2015, 2, .	11.3	96
6	Elastic and adhesive properties of alkanethiol self-assembled monolayers on gold. <i>Applied Physics Letters</i> , 2009, 94, .	3.3	70
7	Injury-mediated stiffening persistently activates muscle stem cells through YAP and TAZ mechanotransduction. <i>Science Advances</i> , 2021, 7, .	10.3	63
8	Indentation mapping revealed poroelastic, but not viscoelastic, properties spanning native zonal articular cartilage. <i>Acta Biomaterialia</i> , 2017, 64, 41-49.	8.3	51
9	Methylammonium lead iodide grain boundaries exhibit depth-dependent electrical properties. <i>Energy and Environmental Science</i> , 2016, 9, 3642-3649.	30.8	47
10	Interfacial Strength and Surface Damage Characteristics of Atomically Thin h-BN, MoS ₂ , and Graphene. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 9164-9177.	8.0	45
11	Capillary adhesion model for contacting micromachined surfaces. <i>Scripta Materialia</i> , 2008, 59, 916-920.	5.2	43
12	Tumor necrosis factor interaction with gold nanoparticles. <i>Nanoscale</i> , 2012, 4, 3208.	5.6	41
13	Hydrogen embrittlement in ferritic steels. <i>Applied Physics Reviews</i> , 2020, 7, .	11.3	40
14	Contact Resonance Force Microscopy for Viscoelastic Property Measurements: From Fundamentals to State-of-the-Art Applications. <i>Macromolecules</i> , 2018, 51, 6977-6996.	4.8	37
15	Controlled Formation and Characterization of Dithiothreitol-Conjugated Gold Nanoparticle Clusters. <i>Langmuir</i> , 2014, 30, 3397-3405.	3.5	36
16	Etching Process Effects on Surface Structure, Fracture Strength, and Reliability of Single-Crystal Silicon Theta-Like Specimens. <i>Journal of Microelectromechanical Systems</i> , 2013, 22, 589-602.	2.5	33
17	Operational and environmental conditions regulate the frictional behavior of two-dimensional materials. <i>Applied Surface Science</i> , 2019, 483, 34-44.	6.1	29
18	Strength distribution of single-crystal silicon theta-like specimens. <i>Scripta Materialia</i> , 2010, 63, 422-425.	5.2	27

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19	Laser-Induced Particle Adsorption on Atomically Thin MoS ₂ . ACS Applied Materials & Interfaces, 2016, 8, 2974-2984.	8.0	27
20	Electronic and Morphological Inhomogeneities in Pristine and Deteriorated Perovskite Photovoltaic Films. Nano Letters, 2017, 17, 1796-1801.	9.1	25
21	Deformation and fracture of single-crystal silicon theta-like specimens. Journal of Materials Research, 2011, 26, 2575-2589.	2.6	23
22	Surface Properties of Laser-Treated Molybdenum Disulfide Nanosheets for Optoelectronic Applications. ACS Applied Materials & Interfaces, 2018, 10, 18104-18112.	8.0	23
23	Predicting strength distributions of MEMS structures using flaw size and spatial density. Microsystems and Nanoengineering, 2019, 5, 49.	7.0	22
24	Elastic, Adhesive, and Charge Transport Properties of a Metal-Molecule-Metal Junction: The Role of Molecular Orientation, Order, and Coverage. Langmuir, 2010, 26, 1688-1699.	3.5	21
25	Nanomechanical Properties of Polyethylene Glycol Brushes on Gold Substrates. Journal of Physical Chemistry B, 2012, 116, 3138-3147.	2.6	21
26	Mechanical characterization of sequentially layered photo-clickable thiol-ene hydrogels. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 65, 454-465.	3.1	20
27	Material Flaw Populations and Component Strength Distributions in the Context of the Weibull Function. Experimental Mechanics, 2019, 59, 279-293.	2.0	20
28	Hydrogels with Reversible Mechanics to Probe Dynamic Cell Microenvironments. Angewandte Chemie, 2017, 129, 12300-12304.	2.0	19
29	Layer-by-layer thinning of MoS ₂ via laser irradiation. Nanotechnology, 2019, 30, 275302.	2.6	19
30	Determination of the True Lateral Grain Size in Organic-Inorganic Halide Perovskite Thin Films. ACS Applied Materials & Interfaces, 2017, 9, 33565-33570.	8.0	17
31	Monitoring Fast, Voxel-Scale Cure Kinetics via Sample-Coupled Resonance Photorheology. Small Methods, 2019, 3, 1800275.	8.6	15
32	Determination of ceramic flaw populations from component strengths. Journal of the American Ceramic Society, 2019, 102, 4794-4808.	3.8	11
33	Quantitative Scanning Probe Microscopy for Nanomechanical Forensics. Experimental Mechanics, 2017, 57, 1045-1055.	2.0	10
34	Mechanical and electrical coupling at metal-insulator-metal nanoscale contacts. Applied Physics Letters, 2008, 93, 203102.	3.3	9
35	Near-theoretical fracture strengths in native and oxidized silicon nanowires. Nanotechnology, 2016, 27, 31LT02.	2.6	8
36	High-throughput bend-strengths of ultra-small polysilicon MEMS components. Applied Physics Letters, 2021, 118, 201601.	3.3	8

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37	Photo-tunable hydrogel mechanical heterogeneity informed by predictive transport kinetics model. <i>Soft Matter</i> , 2020, 16, 4131-4141.	2.7	7
38	Structure-property relationships for methyl-terminated alkyl self-assembled monolayers. <i>Chemical Physics Letters</i> , 2011, 512, 243-246.	2.6	6
39	Shoulder fillet effects in strength distributions of microelectromechanical system components. <i>Journal of Micromechanics and Microengineering</i> , 2020, 30, 125013.	2.6	6
40	Eliciting stable nanoscale fracture in single-crystal silicon. <i>Materials Research Letters</i> , 2022, 10, 728-735.	8.7	6
41	Hydrophobic coatings using atomic layer deposition and non-chlorinated precursors. , 0, , .		5
42	Green's function modeling of response of two-dimensional materials to point probes for scanning probe microscopy. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2016, 380, 1750-1756.	2.1	5
43	Dominant factors for fracture at the micro-scale in electrodeposited nickel alloys. <i>Sensors and Actuators A: Physical</i> , 2020, 314, 112239.	4.1	5
44	Elastic-plastic properties of mesoscale electrodeposited LIGA nickel alloy films: microscopy and mechanics. <i>Journal of Micromechanics and Microengineering</i> , 2021, 31, 015002.	2.6	5
45	Room temperature wideband tunable photoluminescence of pulsed thermally annealed layered black phosphorus. <i>Nanophotonics</i> , 2020, 9, 4253-4264.	6.0	5
46	Atomic layer deposition of Al/sub 2/O/sub 3/ZnO nano-scale films for gold RF MEMS. , 0, , .		4
47	Decoupling small-scale roughness and long-range features on deep reactive ion etched silicon surfaces. <i>Journal of Applied Physics</i> , 2013, 114, 113506.	2.5	4
48	On the bending strength of single-crystal silicon theta-like specimens Rebecca Kirkpatrick. <i>MRS Communications</i> , 2013, 3, 113-117.	1.8	4
49	Design and test of reliable high strength ingressive polycrystalline silicon microgripper arrays. <i>Journal of Micromechanics and Microengineering</i> , 2015, 25, 015009.	2.6	4
50	Emerging investigators in materials science 2017-2018. <i>Materials Research Express</i> , 2018, 5, 040201.	1.6	4
51	Ullmann-like reactions for the synthesis of complex two-dimensional materials. <i>Nanotechnology</i> , 2016, 27, 442501.	2.6	2
52	Van der Waals and Capillary Adhesion of Polycrystalline Silicon Micromachined Surfaces. <i>Nanoscience and Technology</i> , 2012, , 363-393.	1.5	2
53	Effect of Tempering on the Ductile-to-Brittle Transitional Behavior of Ni-Cr-Mo Low-Alloy Steel. <i>Experimental Mechanics</i> , 2020, 60, 1167-1172.	2.0	1
54	Mechanical and Electrical Properties of Alkanethiol Self-Assembled Monolayers: A Conducting-Probe Atomic Force Microscopy Study. <i>Nanoscience and Technology</i> , 2011, , 439-471.	1.5	1

#	ARTICLE	IF	CITATIONS
55	Synthesis and Mechanical Properties of sub 5-Å PolyLiO ₆ Thin Films on Gold Surfaces. ChemPhysChem, 2021, , .	2.1	1
56	US-Czech conference strengthens bilateral and multidisciplinary collaborations in nanotechnology and chemistry. Nanotechnology, 2019, 30, 052501.	2.6	0