

# Neil P Dasgupta

## List of Publications by Citations

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68

papers

5,482

citations

33

h-index

74

g-index

79

ext. papers

6,722

ext. citations

11

avg, IF

6.19

L-index

#	Paper	IF	Citations
68	25th anniversary article: semiconductor nanowires--synthesis, characterization, and applications. <i>Advanced Materials</i> , <b>2014</b> , 26, 2137-84	24	649
67	Dendrites and Pits: Untangling the Complex Behavior of Lithium Metal Anodes through Operando Video Microscopy. <i>ACS Central Science</i> , <b>2016</b> , 2, 790-801	16.8	477
66	Dead lithium: mass transport effects on voltage, capacity, and failure of lithium metal anodes. <i>Journal of Materials Chemistry A</i> , <b>2017</b> , 5, 11671-11681	13	457
65	Surface Chemistry Mechanism of Ultra-Low Interfacial Resistance in the Solid-State Electrolyte Li <sub>7</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub> . <i>Chemistry of Materials</i> , <b>2017</b> , 29, 7961-7968	9.6	403
64	Lithium Metal Anodes: Toward an Improved Understanding of Coupled Morphological, Electrochemical, and Mechanical Behavior. <i>ACS Energy Letters</i> , <b>2017</b> , 2, 664-672	20.1	322
63	Semiconductor Nanowires for Artificial Photosynthesis. <i>Chemistry of Materials</i> , <b>2014</b> , 26, 415-422	9.6	277
62	Improved Cycle Life and Stability of Lithium Metal Anodes through Ultrathin Atomic Layer Deposition Surface Treatments. <i>Chemistry of Materials</i> , <b>2015</b> , 27, 6457-6462	9.6	254
61	Atomic layer deposition of platinum catalysts on nanowire surfaces for photoelectrochemical water reduction. <i>Journal of the American Chemical Society</i> , <b>2013</b> , 135, 12932-5	16.4	240
60	Challenges in Lithium Metal Anodes for Solid-State Batteries. <i>ACS Energy Letters</i> , <b>2020</b> , 5, 922-934	20.1	171
59	Bioinspired Bifunctional Membrane for Efficient Clean Water Generation. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2016</b> , 8, 772-9	9.5	152
58	Atomic layer deposition of metal sulfide materials. <i>Accounts of Chemical Research</i> , <b>2015</b> , 48, 341-8	24.3	145
57	Atomic Layer Deposition of Al-doped ZnO Films: Effect of Grain Orientation on Conductivity. <i>Chemistry of Materials</i> , <b>2010</b> , 22, 4769-4775	9.6	133
56	Lithium Mechanics: Roles of Strain Rate and Temperature and Implications for Lithium Metal Batteries. <i>Journal of the Electrochemical Society</i> , <b>2019</b> , 166, A89-A97	3.9	128
55	Li Penetration in Ceramic Solid Electrolytes: Operando Microscopy Analysis of Morphology, Propagation, and Reversibility. <i>Matter</i> , <b>2020</b> , 2, 1025-1048	12.7	126
54	Atomic Layer Deposition of the Solid Electrolyte Garnet Li <sub>7</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub> . <i>Chemistry of Materials</i> , <b>2017</b> , 29, 3785-3792	9.6	107
53	ALD for clean energy conversion, utilization, and storage. <i>MRS Bulletin</i> , <b>2011</b> , 36, 899-906	3.2	100
52	Synergistic Effect of 3D Current Collectors and ALD Surface Modification for High Coulombic Efficiency Lithium Metal Anodes. <i>Advanced Energy Materials</i> , <b>2019</b> , 9, 1802534	21.8	94

51	Core-Shell CdS-Cu <sub>2</sub> S Nanorod Array Solar Cells. <i>Nano Letters</i> , <b>2015</b> , 15, 4096-101	11.5	91
50	Atomic layer deposition of lead sulfide quantum dots on nanowire surfaces. <i>Nano Letters</i> , <b>2011</b> , 11, 934-405	10.5	73
49	Efficient fast-charging of lithium-ion batteries enabled by laser-patterned three-dimensional graphite anode architectures. <i>Journal of Power Sources</i> , <b>2020</b> , 471, 228475	8.9	67
48	Design of an atomic layer deposition reactor for hydrogen sulfide compatibility. <i>Review of Scientific Instruments</i> , <b>2010</b> , 81, 044102	1.7	54
47	Plan-View Operando Video Microscopy of Li Metal Anodes: Identifying the Coupled Relationships among Nucleation, Morphology, and Reversibility. <i>ACS Energy Letters</i> , <b>2020</b> , 5, 994-1004	20.1	52
46	Atomic Layer Deposition of Lead Sulfide Thin Films for Quantum Confinement. <i>Chemistry of Materials</i> , <b>2009</b> , 21, 3973-3978	9.6	50
45	Epitaxially aligned cuprous oxide nanowires for all-oxide, single-wire solar cells. <i>Nano Letters</i> , <b>2014</b> , 14, 4665-70	11.5	46
44	Area-selective atomic layer deposition of lead sulfide: nanoscale patterning and DFT simulations. <i>Langmuir</i> , <b>2010</b> , 26, 6845-52	4	46
43	Rational Design of Hyperbranched Nanowire Systems for Tunable Superomniphobic Surfaces Enabled by Atomic Layer Deposition. <i>ACS Nano</i> , <b>2017</b> , 11, 478-489	16.7	45
42	Uniform doping of metal oxide nanowires using solid state diffusion. <i>Journal of the American Chemical Society</i> , <b>2014</b> , 136, 10521-6	16.4	45
41	Semiconductor nanowires for photovoltaic and photoelectrochemical energy conversion. <i>Frontiers of Physics</i> , <b>2014</b> , 9, 289-302	3.7	44
40	Atomic layer deposition and first principles modeling of glassy Li <sub>3</sub> BO <sub>3</sub> Li <sub>2</sub> CO <sub>3</sub> electrolytes for solid-state Li metal batteries. <i>Journal of Materials Chemistry A</i> , <b>2018</b> , 6, 19425-19437	13	41
39	Biotemplated Morpho Butterfly Wings for Tunable Structurally Colored Photocatalysts. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2018</b> , 10, 4614-4621	9.5	38
38	Electro-chemo-mechanical evolution of sulfide solid electrolyte/Li metal interfaces: operando analysis and ALD interlayer effects. <i>Journal of Materials Chemistry A</i> , <b>2020</b> , 8, 6291-6302	13	36
37	Enabling 6C Fast Charging of Li-Ion Batteries with Graphite/Hard Carbon Hybrid Anodes. <i>Advanced Energy Materials</i> , <b>2021</b> , 11, 2003336	21.8	35
36	Hierarchical ZnO Nanowire Growth with Tunable Orientations on Versatile Substrates Using Atomic Layer Deposition Seeding. <i>Chemistry of Materials</i> , <b>2015</b> , 27, 4799-4807	9.6	30
35	Transitioning solid-state batteries from lab to market: Linking electro-chemo-mechanics with practical considerations. <i>Joule</i> , <b>2021</b> , 5, 1371-1390	27.8	30
34	Quantifying Geometric Strain at the PbS QD-TiO <sub>2</sub> Anode Interface and Its Effect on Electronic Structures. <i>Nano Letters</i> , <b>2015</b> , 15, 7829-36	11.5	24

33	Challenges and Opportunities for Fast Charging of Solid-State Lithium Metal Batteries. <i>ACS Energy Letters</i> , 3734-3749	20.1	22
32	Evolution of Dead Lithium Growth in Lithium Metal Batteries: Experimentally Validated Model of the Apparent Capacity Loss. <i>Journal of the Electrochemical Society</i> , <b>2019</b> , 166, A3456-A3463	3.9	21
31	Nickel Silicide Nanowire Arrays for Anti-Reflective Electrodes in Photovoltaics. <i>Advanced Functional Materials</i> , <b>2012</b> , 22, 3650-3657	15.6	21
30	In Situ Cycle-by-Cycle Flash Annealing of Atomic Layer Deposited Materials. <i>Journal of Physical Chemistry C</i> , <b>2012</b> , 116, 24177-24183	3.8	19
29	Atomic Layer Deposition of Bismuth Vanadate Core-Shell Nanowire Photoanodes. <i>Chemistry of Materials</i> , <b>2019</b> , 31, 3221-3227	9.6	18
28	High-Performance Zinc Tin Oxide TFTs with Active Layers Deposited by Atomic Layer Deposition. <i>Advanced Electronic Materials</i> , <b>2020</b> , 6, 2000195	6.4	18
27	Operando analysis of the molten Li LLZO interface: Understanding how the physical properties of Li affect the critical current density. <i>Matter</i> , <b>2021</b> , 4, 1947-1961	12.7	17
26	Area-Selective Atomic Layer Deposition Patterned by Electrohydrodynamic Jet Printing for Additive Manufacturing of Functional Materials and Devices. <i>ACS Nano</i> , <b>2020</b> ,	16.7	15
25	Elucidating the Evolving Atomic Structure in Atomic Layer Deposition Reactions with in Situ XANES and Machine Learning. <i>Chemistry of Materials</i> , <b>2019</b> , 31, 8937-8947	9.6	14
24	Scanning tunneling spectroscopy of lead sulfide quantum wells fabricated by atomic layer deposition. <i>Nanotechnology</i> , <b>2010</b> , 21, 485402	3.4	13
23	Electrochemical and Surface Chemistry Analysis of Lithium Lanthanum Zirconium Tantalum Oxide (LLZTO)/Liquid Electrolyte (LE) Interfaces. <i>Journal of Power Sources</i> , <b>2020</b> , 474, 228598	8.9	13
22	Rate Limitations in Composite Solid-State Battery Electrodes: Revealing Heterogeneity with Operando Microscopy. <i>ACS Energy Letters</i> , <b>2021</b> , 6, 2993-3003	20.1	13
21	Molecular layer deposition of Li-ion conducting "Lithicone" solid electrolytes. <i>Chemical Communications</i> , <b>2020</b> , 56, 15537-15540	5.8	12
20	Operando Analysis of Interphase Dynamics in Anode-Free Solid-State Batteries with Sulfide Electrolytes. <i>Journal of the Electrochemical Society</i> , <b>2021</b> , 168, 070557	3.9	12
19	Macroporous p-GaP Photocathodes Prepared by Anodic Etching and Atomic Layer Deposition Doping. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2016</b> , 8, 16178-85	9.5	11
18	Enhanced Interfacial Toughness of Thermoplastic-Epoxy Interfaces Using ALD Surface Treatments. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 43573-43580	9.5	11
17	Rational Design of Transparent Nanowire Architectures with Tunable Geometries for Preventing Marine Fouling. <i>Advanced Materials Interfaces</i> , <b>2020</b> , 7, 2000672	4.6	10
16	Spatial variation of available electronic excitations within individual quantum dots. <i>Nano Letters</i> , <b>2013</b> , 13, 716-21	11.5	9

15	Causes of the Difference Between Hall Mobility and Field-Effect Mobility for p-Type RF Sputtered CuO Thin-Film Transistors. <i>IEEE Transactions on Electron Devices</i> , <b>2020</b> , 67, 5557-5563	2.9	9
14	Operando video microscopy of Li plating and re-intercalation on graphite anodes during fast charging. <i>Journal of Materials Chemistry A</i> , <b>2021</b> , 9, 23522-23536	13	7
13	Lithium stripping: anisotropic evolution and faceting of pits revealed by operando 3-D microscopy. <i>Journal of Materials Chemistry A</i> , <b>2021</b> , 9, 21013-21023	13	6
12	Electrochemical Deposition of Metallic Nanowires as a Scanning Probe Tip. <i>Journal of the Electrochemical Society</i> , <b>2009</b> , 156, D431	3.9	5
11	Plasma-Enhanced Atomic Layer Deposition of p-Type Copper Oxide Semiconductors with Tunable Phase, Oxidation State, and Morphology. <i>Journal of Physical Chemistry C</i> , <b>2021</b> , 125, 9383-9390	3.8	5
10	Enabling 4C Fast Charging of Lithium-Ion Batteries by Coating Graphite with a Solid-State Electrolyte. <i>Advanced Energy Materials</i> , 2102618	21.8	4
9	Subtractive patterning: High-resolution electrohydrodynamic jet printing with solvents. <i>Applied Physics Letters</i> , <b>2020</b> , 117, 133702	3.4	4
8	Tunable Atomic Layer Deposition into Ultra-High-Aspect-Ratio (>60000:1) Aerogel Monoliths Enabled by Transport Modeling. <i>Chemistry of Materials</i> , <b>2021</b> , 33, 5572-5583	9.6	3
7	Geometric Optimization of Bismuth Vanadate Core-Shell Nanowire Photoanodes using Atomic Layer Deposition. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2021</b> ,	9.5	2
6	Operando detection of Li plating during fast charging of Li-ion batteries using incremental capacity analysis. <i>Journal of Power Sources</i> , <b>2022</b> , 539, 231601	8.9	2
5	Atomic Layer Deposition of PbS-ZnS quantum wells for high-efficiency solar cells <b>2009</b> ,		1
4	Sodium mechanics: Effects of temperature, strain rate, and grain rotation and implications for sodium metal batteries. <i>Extreme Mechanics Letters</i> , <b>2022</b> , 52, 101644	3.9	1
3	Transparent Refractory Aerogels for Efficient Spectral Control in High-Temperature Solar Power Generation. <i>Advanced Functional Materials</i> , 2108774	15.6	0
2	Mechanical Properties of Fibers Coated by Atomic Layer Deposition for Polymer-Matrix Composites with Enhanced Thermal and Ultraviolet Resistance. <i>Minerals, Metals and Materials Series</i> , <b>2020</b> , 1513-1529 <sup>3</sup>	9.3	0
1	Inkjet-defined site-selective (IDSS) growth for controllable production of in-plane and out-of-plane MoS device arrays. <i>Nanoscale</i> , <b>2020</b> , 12, 16917-16927	7.7	0