Sumit Agarwal

List of Publications by Year
in descending order

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51 papers	1,239 citations	331670 21 h-index	377865 34 g-index
52 all docs	52 docs citations	52 times ranked	1306 citing authors

#	Article	IF	Citations
1	Area-selective atomic layer deposition of Al2O3 on SiNx with SiO2 as the nongrowth surface. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2022, 40, 012403.	2.1	5
2	Functionalization of the SiO₂ Surface with Aminosilanes to Enable Area-Selective Atomic Layer Deposition of Al₂O₃. Langmuir, 2022, 38, 652-660.	3.5	13
3	Self-Aligned Selective Area Front Contacts on <i>Poly</i>-Si/SiO<i> _x </i> Passivating Contact <i>c</i>-Si Solar Cells. IEEE Journal of Photovoltaics, 2022, 12, 678-689.	2.5	10
4	Understanding SiO_{<i>x</i>} Layer Breakup in poly-Si/SiO_{<i>x</i>} Passivating Contacts for Si Solar Cells Using Precisely Engineered Surface Textures. ACS Applied Energy Materials, 2022, 5, 3043-3051.	5.1	2
5	Extending growth inhibition during area-selective atomic layer deposition of Al₂O₃ on aminosilane-functionalized SiO₂. Chemical Communications, 2022, 58, 6650-6652.	4.1	1
6	Atomic structure of light-induced efficiency-degrading defects in boron-doped Czochralski silicon solar cells. Energy and Environmental Science, 2021, 14, 5416-5422.	30.8	6
7	Selective Gas-Phase Functionalization of SiO₂ and SiN<i>_x</i> Surfaces with Hydrocarbons. Langmuir, 2021, 37, 3960-3969.	3.5	7
8	Mechanism for growth initiation on aminosilane-functionalized SiO2 during area-selective atomic layer deposition of ZrO2. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	2.1	8
9	Atomic layer deposition and selective etching of ruthenium for area-selective deposition: Temperature dependence and supercycle design. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	2.1	9
10	Chemical Passivation of Crystalline Si by Al₂O₃ Deposited Using Atomic Layer Deposition: Implications for Solar Cells. ACS Applied Nano Materials, 2021, 4, 6629-6636.	5.0	6
11	Gas-phase surface functionalization of SiN<i>x</i> with benzaldehyde to increase SiO2 to SiN<i>x</i> etch selectivity in atomic layer etching. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	2.1	5
12	Designing Anion-Exchange Ionomers with Oriented Nanoscale Phase Separation at a Silver Interface. Journal of Physical Chemistry C, 2021, 125, 20592-20605.	3.1	3
13	Trap-Assisted Dopant Compensation Prevents Shunting in Poly-Si Passivating Interdigitated Back Contact Silicon Solar Cells. ACS Applied Energy Materials, 2021, 4, 10774-10782.	5.1	8
14	Selective functionalization of partially etched SiNx to enhance SiO2 to SiNx etch selectivity. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, 050401.	2.1	0
15	Surface reaction mechanisms during atomic layer deposition of zirconium oxide using water, ethanol, and water-ethanol mixture as the oxygen sources. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, .	2.1	15
16	Investigating Silver Nanoparticle Interactions with Quaternary Ammonium Functionalized Triblock Copolymers and Their Effect on Midblock Crystallinity. ACS Applied Polymer Materials, 2020, 2, 4914-4923.	4.4	5
17	Effect of Surface Texture on Pinhole Formation in SiO<i>_x</i>-Based Passivated Contacts for High-Performance Silicon Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 55737-55745.	8.0	18
18	Etch selectivity during plasma-assisted etching of SiO2 and SiN<i>x</i>: Transitioning from reactive ion etching to atomic layer etching. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, .	2.1	28

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19	Influence of Tabula Rasa on Process- and Light-Induced Degradation of Solar Cells Fabricated From Czochralski Silicon. IEEE Journal of Photovoltaics, 2020, 10, 1557-1565.	2.5	4
20	Isolating p- and n-Doped Fingers With Intrinsic Poly-Si in Passivated Interdigitated Back Contact Silicon Solar Cells. IEEE Journal of Photovoltaics, 2020, 10, 1574-1581.	2.5	12
21	Vacancy Healing as a Desorption Tool: Oxygen Triggered Removal of Stored Ammonia from NiO_{1â€“<i>x</i>}/MOR Validated by Experiments and Simulations. ACS Applied Energy Materials, 2020, 3, 8233-8239.	5.1	6
22	Effect of Crystallographic Orientation and Nanoscale Surface Morphology on Poly-Si/SiO_{<i>x</i>} Contacts for Silicon Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 42021-42031.	8.0	29
23	Surface prefunctionalization of SiO2 to modify the etch per cycle during plasma-assisted atomic layer etching. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2019, 37, .	2.1	16
24	Modifications of Textured Silicon Surface Morphology and Its Effect on Poly-Si/SiO<i> _x </i> Contact Passivation for Silicon Solar Cells. IEEE Journal of Photovoltaics, 2019, 9, 1513-1521.	2.5	13
25	Atomic layer deposition of silicon-based dielectrics for semiconductor manufacturing: Current status and future outlook. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2019, 37, .	2.1	74
26	Area-Selective Deposition of Ruthenium by Combining Atomic Layer Deposition and Selective Etching. Chemistry of Materials, 2019, 31, 3878-3882.	6.7	71
27	Surface reactions of aminosilane precursors during N₂ plasmaâ€assisted atomic layer deposition of SiN<i>_x</i>. Plasma Processes and Polymers, 2019, 16, 1900032.	3.0	10
28	Understanding the charge transport mechanisms through ultrathin SiO<i>x</i> layers in passivated contacts for high-efficiency silicon solar cells. Applied Physics Letters, 2019, 114, .	3.3	41
29	Gas Phase Organic Functionalization of SiO₂ with Propanoyl Chloride. Langmuir, 2018, 34, 14489-14497.	3.5	12
30	A Three-Step Atomic Layer Deposition Process for SiN_{<i>x</i>} Using Si₂Cl₆, CH₃NH₂, and N₂ Plasma. ACS Applied Materials & Interfaces, 2018, 10, 19153-19161.	8.0	21
31	Effect of silicon oxide thickness on polysilicon based passivated contacts for high-efficiency crystalline silicon solar cells. Solar Energy Materials and Solar Cells, 2018, 185, 270-276.	6.2	60
32	Challenges in atomic layer deposition of carbon-containing silicon-based dielectrics. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2017, 35, .	2.1	16
33	Surface Phenomena During Plasma-Assisted Atomic Layer Etching of SiO₂. ACS Applied Materials & Interfaces, 2017, 9, 31067-31075.	8.0	40
34	Atomic Layer Deposition of SiC_{<i>x</i>}N_{<i>y</i>} Using Si₂Cl₆ and CH₃NH₂ Plasma. Chemistry of Materials, 2017, 29, 6269-6278.	6.7	21
35	Silicon Nitride Encapsulated Silicon Nanocrystals for Lithium Ion Batteries. Plasma Processes and Polymers, 2016, 13, 116-123.	3.0	8
36	Low-Temperature Conformal Atomic Layer Deposition of SiN_{<i>x</i>} Films Using Si₂Cl₆ and NH₃ Plasma. ACS Applied Materials & Interfaces, 2015, 7, 10806-10813.	8.0	70

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37	Low temperature hydrogen plasma-assisted atomic layer deposition of copper studied using <i>in situ</i> infrared reflection absorption spectroscopy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2014, 32, .	2.1	11
38	Atomic layer deposition of titanium dioxide using titanium tetrachloride and titanium tetraisopropoxide as precursors. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2013, 31, .	2.1	26
39	<i>In situ</i> diagnostics for studying gas-surface reactions during thermal and plasma-assisted atomic layer deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2012, 30, .	2.1	26
40	Influence of Surface Temperature on the Mechanism of Atomic Layer Deposition of Aluminum Oxide Using an Oxygen Plasma and Ozone. Langmuir, 2012, 28, 350-357.	3.5	54
41	In Situ Gas-Phase Hydrosilylation of Plasma-Synthesized Silicon Nanocrystals. ACS Applied Materials & Interfaces, 2011, 3, 3033-3041.	8.0	50
42	Surface Hydride Composition of Plasma-Synthesized Si Nanoparticles. Journal of Physical Chemistry C, 2011, 115, 20375-20379.	3.1	40
43	Mechanism of Self-catalytic Atomic Layer Deposition of Silicon Dioxide Using 3-Aminopropyl Triethoxysilane, Water, and Ozone. Chemistry of Materials, 2011, 23, 2312-2316.	6.7	39
44	Facile abstraction of hydrogen atoms from graphane, diamond, and amorphous carbon surfaces: A first-principles study. Physical Review B, 2010, 82, .	3.2	5
45	Surface Reaction Mechanisms during Ozone and Oxygen Plasma Assisted Atomic Layer Deposition of Aluminum Oxide. Langmuir, 2010, 26, 13732-13735.	3.5	86
46	Silicon quantum dot optical properties and synthesis: Implications for photovoltaic devices. , 2010, , .		0
47	Surface Reaction Mechanisms during Plasma-Assisted Atomic Layer Deposition of Titanium Dioxide. Journal of Physical Chemistry C, 2009, 113, 12962-12965.	3.1	64
48	Atomic hydrogen interactions with amorphous carbon thin films. Journal of Applied Physics, 2009, 106, .	2.5	33
49	Surface Reaction Mechanisms during Ozone-Based Atomic Layer Deposition of Titanium Dioxide. Journal of Physical Chemistry C, 2008, 112, 9552-9554.	3.1	56
50	Self-limiting growth of tantalum oxide thin films by pulsed plasma-enhanced chemical vapor deposition. Applied Physics Letters, 2007, 90, 131504.	3.3	28
51	Threshold ionization mass spectrometry of reactive species in remote Arâˆ•C2H2 expanding thermal plasma. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 1400-1412.	2.1	46