

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
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all docs

52
docs citations

52
times ranked

1306
citing authors

#	ARTICLE	IF	CITATIONS
1	Surface Reaction Mechanisms during Ozone and Oxygen Plasma Assisted Atomic Layer Deposition of Aluminum Oxide. Langmuir, 2010, 26, 13732-13735.	3.5	86
2	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
3	Area-Selective Deposition of Ruthenium by Combining Atomic Layer Deposition and Selective Etching. Chemistry of Materials, 2019, 31, 3878-3882.	6.7	71
4	Low-Temperature Conformal Atomic Layer Deposition of SiN _x Films Using Si ₂ Cl ₆ and NH ₃ Plasma. ACS Applied Materials & Interfaces, 2015, 7, 10806-10813.	8.0	70
5	Surface Reaction Mechanisms during Plasma-Assisted Atomic Layer Deposition of Titanium Dioxide. Journal of Physical Chemistry C, 2009, 113, 12962-12965.	3.1	64
6	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
7	Surface Reaction Mechanisms during Ozone-Based Atomic Layer Deposition of Titanium Dioxide. Journal of Physical Chemistry C, 2008, 112, 9552-9554.	3.1	56
8	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
9	In Situ Gas-Phase Hydrosilylation of Plasma-Synthesized Silicon Nanocrystals. ACS Applied Materials & Interfaces, 2011, 3, 3033-3041.	8.0	50
10	Threshold ionization mass spectrometry of reactive species in remote Ar•C ₂ H ₂ expanding thermal plasma. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 1400-1412.	2.1	46
11	Understanding the charge transport mechanisms through ultrathin SiO _x layers in passivated contacts for high-efficiency silicon solar cells. Applied Physics Letters, 2019, 114, .	3.3	41
12	Surface Hydride Composition of Plasma-Synthesized Si Nanoparticles. Journal of Physical Chemistry C, 2011, 115, 20375-20379.	3.1	40
13	Surface Phenomena During Plasma-Assisted Atomic Layer Etching of SiO ₂ . ACS Applied Materials & Interfaces, 2017, 9, 31067-31075.	8.0	40
14	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
15	Atomic hydrogen interactions with amorphous carbon thin films. Journal of Applied Physics, 2009, 106, .	2.5	33
16	Effect of Crystallographic Orientation and Nanoscale Surface Morphology on Poly-Si/SiO _x Contacts for Silicon Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 42021-42031.	8.0	29
17	Self-limiting growth of tantalum oxide thin films by pulsed plasma-enhanced chemical vapor deposition. Applied Physics Letters, 2007, 90, 131504.	3.3	28
18	Etch selectivity during plasma-assisted etching of SiO ₂ and SiN _x : 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	<i>In situ</i> diagnostics for studying gas-surface reactions during thermal and plasma-assisted atomic layer deposition. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2012, 30, .	2.1	26
20	Atomic layer deposition of titanium dioxide using titanium tetrachloride and titanium tetraisopropoxide as precursors. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2013, 31, .	2.1	26
21	Atomic Layer Deposition of Si _x N _y Using Si ₂ Cl ₆ and CH ₃ NH ₂ Plasma. <i>Chemistry of Materials</i> , 2017, 29, 6269-6278.	6.7	21
22	A Three-Step Atomic Layer Deposition Process for SiN Using Si ₂ Cl ₆ , CH ₃ NH ₂ , and N ₂ Plasma. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 19153-19161.	8.0	21
23	Effect of Surface Texture on Pinhole Formation in SiO _x -Based Passivated Contacts for High-Performance Silicon Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 55737-55745.	8.0	18
24	Challenges in atomic layer deposition of carbon-containing silicon-based dielectrics. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2017, 35, .	2.1	16
25	Surface prefunctionalization of SiO ₂ to modify the etch per cycle during plasma-assisted atomic layer etching. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2019, 37, .	2.1	16
26	Surface reaction mechanisms during atomic layer deposition of zirconium oxide using water, ethanol, and water-ethanol mixture as the oxygen sources. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2020, 38, .	2.1	15
27	Modifications of Textured Silicon Surface Morphology and Its Effect on Poly-Si/SiO _x Contact Passivation for Silicon Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2019, 9, 1513-1521.	2.5	13
28	Functionalization of the SiO ₂ Surface with Aminosilanes to Enable Area-Selective Atomic Layer Deposition of Al ₂ O ₃ . <i>Langmuir</i> , 2022, 38, 652-660.	3.5	13
29	Gas Phase Organic Functionalization of SiO ₂ with Propanoyl Chloride. <i>Langmuir</i> , 2018, 34, 14489-14497.	3.5	12
30	Isolating p- and n-Doped Fingers With Intrinsic Poly-Si in Passivated Interdigitated Back Contact Silicon Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2020, 10, 1574-1581.	2.5	12
31	Low temperature hydrogen plasma-assisted atomic layer deposition of copper studied using <i>in situ</i> infrared reflection absorption spectroscopy. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2014, 32, .	2.1	11
32	Surface reactions of aminosilane precursors during N ₂ plasma-assisted atomic layer deposition of SiN _x . <i>Plasma Processes and Polymers</i> , 2019, 16, 1900032.	3.0	10
33	Self-Aligned Selective Area Front Contacts on Poly-Si/SiO _x Passivating Contact <i>c</i> -Si Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2022, 12, 678-689.	2.5	10
34	Atomic layer deposition and selective etching of ruthenium for area-selective deposition: Temperature dependence and supercycle design. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2021, 39, .	2.1	9
35	Silicon Nitride Encapsulated Silicon Nanocrystals for Lithium Ion Batteries. <i>Plasma Processes and Polymers</i> , 2016, 13, 116-123.	3.0	8
36	Mechanism for growth initiation on aminosilane-functionalized SiO ₂ during area-selective atomic layer deposition of ZrO ₂ . <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2021, 39, .	2.1	8

#	ARTICLE	IF	CITATIONS
37	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
38	Selective Gas-Phase Functionalization of SiO ₂ and SiN _x Surfaces with Hydrocarbons. Langmuir, 2021, 37, 3960-3969.	3.5	7
39	Vacancy Healing as a Desorption Tool: Oxygen Triggered Removal of Stored Ammonia from NiO ⁺ /MOR Validated by Experiments and Simulations. ACS Applied Energy Materials, 2020, 3, 8233-8239.	5.1	6
40	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
41	Chemical Passivation of Crystalline Si by Al ₂ O ₃ Deposited Using Atomic Layer Deposition: Implications for Solar Cells. ACS Applied Nano Materials, 2021, 4, 6629-6636.	5.0	6
42	Facile abstraction of hydrogen atoms from graphane, diamond, and amorphous carbon surfaces: A first-principles study. Physical Review B, 2010, 82, .	3.2	5
43	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
44	Gas-phase surface functionalization of SiN _x with benzaldehyde to increase SiO ₂ to SiN _x etch selectivity in atomic layer etching. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	2.1	5
45	Area-selective atomic layer deposition of Al ₂ O ₃ on SiN _x with SiO ₂ as the nongrowth surface. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2022, 40, 012403.	2.1	5
46	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
47	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
48	Understanding SiO _x Layer Breakup in poly-Si/SiO _x Passivating Contacts for Si Solar Cells Using Precisely Engineered Surface Textures. ACS Applied Energy Materials, 2022, 5, 3043-3051.	5.1	2
49	Extending growth inhibition during area-selective atomic layer deposition of Al ₂ O ₃ on aminosilane-functionalized SiO ₂ . Chemical Communications, 2022, 58, 6650-6652.	4.1	1
50	Silicon quantum dot optical properties and synthesis: Implications for photovoltaic devices. , 2010, , .		0
51	Selective functionalization of partially etched SiN _x to enhance SiO ₂ to SiN _x etch selectivity. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, 050401.	2.1	0