

# Colin A Wolden

## List of Publications by Year in descending order

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116  
papers

3,347  
citations

147801

31  
h-index

168389

53  
g-index

117  
all docs

117  
docs citations

117  
times ranked

4783  
citing authors

#	ARTICLE	IF	CITATIONS
1	Photovoltaic manufacturing: Present status, future prospects, and research needs. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2011, 29, .	2.1	226
2	On the formation and stability of p-type conductivity in nitrogen-doped zinc oxide. Applied Physics Letters, 2005, 86, 112112.	3.3	211
3	Activation of Hematite Nanorod Arrays for Photoelectrochemical Water Splitting. ChemSusChem, 2011, 4, 474-479.	6.8	160
4	Plasma assisted synthesis of WS <sub>2</sub> for gas sensing applications. Chemical Physics Letters, 2014, 615, 6-10.	2.6	150
5	Room temperature chemical vapor deposition of c-axis ZnO. Journal of Crystal Growth, 2005, 274, 412-417.	1.5	107
6	Synthesis of Stoichiometric FeS <sub>2</sub> through Plasma-Assisted Sulfurization of Fe <sub>2</sub> O <sub>3</sub> Nanorods. Journal of the American Chemical Society, 2012, 134, 17854-17857.	13.7	107
7	Controlled activation of ZnTe:Cu contacted CdTe solar cells using rapid thermal processing. Solar Energy Materials and Solar Cells, 2015, 133, 208-215.	6.2	104
8	Plasma-enhanced chemical vapor deposition of TiO <sub>2</sub> thin films for dielectric applications. Thin Solid Films, 2006, 515, 1708-1713.	1.8	93
9	Efficient Ammonia Decomposition in a Catalytic Membrane Reactor To Enable Hydrogen Storage and Utilization. ACS Sustainable Chemistry and Engineering, 2019, 7, 5975-5985.	6.7	84
10	Low-Temperature Synthesis of n-Type WS <sub>2</sub> Thin Films via H <sub>2</sub> S Plasma Sulfurization of WO <sub>3</sub> . Chemistry of Materials, 2014, 26, 3986-3992.	6.7	75
11	Accelerated development of CuSbS <sub>2</sub> thin film photovoltaic device prototypes. Progress in Photovoltaics: Research and Applications, 2016, 24, 929-939.	8.1	74
12	The roles of ZnTe buffer layers on CdTe solar cell performance. Solar Energy Materials and Solar Cells, 2016, 147, 203-210.	6.2	67
13	Synthesis of $\hat{\Gamma}^2$ -Mo <sub>2</sub> C Thin Films. ACS Applied Materials & Interfaces, 2011, 3, 517-521.	8.0	60
14	PdAu and PdAuAg composite membranes for hydrogen separation from synthetic water-gas shift streams containing hydrogen sulfide. Journal of Membrane Science, 2014, 465, 167-176.	8.2	59
15	Trade-offs in Thin Film Solar Cells with Layered Chalcostibite Photovoltaic Absorbers. Advanced Energy Materials, 2017, 7, 1601935.	19.5	58
16	An investigation of annealing on the dielectric performance of TiO <sub>2</sub> thin films. Semiconductor Science and Technology, 2006, 21, 1573-1579.	2.0	56
17	Properties of reactively sputtered oxygenated cadmium sulfide (CdS:O) and their impact on CdTe solar cell performance. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2015, 33, .	2.1	56
18	Electrochromic films produced by ultrasonic spray deposition of tungsten oxide nanoparticles. Solar Energy Materials and Solar Cells, 2012, 99, 50-55.	6.2	52

#	ARTICLE	IF	CITATIONS
19	Reversible multicolor chromism in layered formamidium metal halide perovskites. <i>Nature Communications</i> , 2020, 11, 5234.	12.8	48
20	3D/2D passivation as a secret to success for polycrystalline thin-film solar cells. <i>Joule</i> , 2021, 5, 1057-1073.	24.0	48
21	Plasma-Enhanced Atomic Layer Deposition of Semiconductor Grade ZnO Using Dimethyl Zinc. <i>Chemical Vapor Deposition</i> , 2009, 15, 15-20.	1.3	43
22	The influence of sol-gel processing on the electrochromic properties of mesoporous WO <sub>3</sub> films produced by ultrasonic spray deposition. <i>Solar Energy Materials and Solar Cells</i> , 2014, 121, 163-170.	6.2	41
23	An experimental and modeling analysis of vapor transport deposition of cadmium telluride. <i>Solar Energy Materials and Solar Cells</i> , 2004, 83, 55-65.	6.2	40
24	A comparison of the performance and stability of Pd/BCC metal composite membranes for hydrogen purification. <i>International Journal of Hydrogen Energy</i> , 2014, 39, 19009-19017.	7.1	39
25	Facile Synthesis of Lithium Sulfide Nanocrystals for Use in Advanced Rechargeable Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2015, 7, 28444-28451.	8.0	39
26	Dense Carbide/Metal Composite Membranes for Hydrogen Separations Without Platinum Group Metals. <i>Advanced Materials</i> , 2011, 23, 3585-3589.	21.0	36
27	An Investigation of the Plasma Chemistry Involved in the Synthesis of ZnO by PECVD. <i>Journal of the Electrochemical Society</i> , 2003, 150, C693.	2.9	34
28	Low-temperature ozone exposure technique to modulate the stoichiometry of WO <sub>x</sub> nanorods and optimize the electrochromic performance. <i>Nanotechnology</i> , 2012, 23, 255601.	2.6	33
29	An Analysis of the Deposition Mechanisms Involved during Self-Limiting Growth of Aluminum Oxide by Pulsed PECVD. <i>Chemical Vapor Deposition</i> , 2008, 14, 296-302.	1.3	32
30	Plasma and gas-phase characterization of a pulsed plasma-enhanced chemical vapor deposition system engineered for self-limiting growth of aluminum oxide thin films. <i>Surface and Coatings Technology</i> , 2007, 201, 8991-8997.	4.8	31
31	The role (or lack thereof) of nitrogen or ammonia adsorption-induced hydrogen flux inhibition on palladium membrane performance. <i>Journal of Membrane Science</i> , 2016, 514, 65-72.	8.2	31
32	Plasma-Enhanced Atomic Layer Deposition of Anatase TiO <sub>2</sub> Using TiCl <sub>4</sub> . <i>Journal of Physical Chemistry C</i> , 2009, 113, 16307-16310.	3.1	30
33	Scalable synthesis of improved nanocrystalline, mesoporous tungsten oxide films with exceptional electrochromic performance. <i>Solar Energy Materials and Solar Cells</i> , 2015, 132, 6-14.	6.2	30
34	ZnO synthesis by high vacuum plasma-assisted chemical vapor deposition using dimethylzinc and atomic oxygen. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2004, 22, 2118-2125.	2.1	29
35	Self-limiting growth of tantalum oxide thin films by pulsed plasma-enhanced chemical vapor deposition. <i>Applied Physics Letters</i> , 2007, 90, 131504.	3.3	28
36	Ammonia separation from N <sub>2</sub> and H <sub>2</sub> over LTA zeolitic imidazolate framework membranes. <i>Journal of Membrane Science</i> , 2021, 623, 119078.	8.2	28

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37	High mobility oxides: Engineered structures to overcome intrinsic performance limitations of transparent conducting oxides. Applied Physics Letters, 2003, 83, 3933-3935.	3.3	27
38	An interrogation of the zinc oxide-gallium oxide phase space by plasma enhanced chemical vapor deposition. Journal of Crystal Growth, 2004, 263, 283-290.	1.5	27
39	Mechanistic studies of hydrogen transport through amorphous MoC/V composite membranes. Journal of Membrane Science, 2013, 427-428, 151-154.	8.2	27
40	Investigation of the role of plasma conditions on the deposition rate and electrochromic performance of tungsten oxide thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2003, 21, 1927-1933.	2.1	26
41	Self-limiting deposition of aluminum oxide thin films by pulsed plasma-enhanced chemical vapor deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2008, 26, 1079-1084.	2.1	26
42	Stable magnesium zinc oxide by reactive Co-Sputtering for CdTe-based solar cells. Solar Energy Materials and Solar Cells, 2020, 210, 110521.	6.2	24
43	Pulsed plasma-enhanced chemical vapor deposition of Al <sub>2</sub> O <sub>3</sub> -TiO <sub>2</sub> nanolaminates. Thin Solid Films, 2010, 518, 3337-3341.	1.8	22
44	Ultrasonic spray deposition of high performance WO <sub>3</sub> films using template-assisted sol-gel chemistry. Electrochemistry Communications, 2012, 25, 62-65.	4.7	22
45	Fabrication and operational considerations of hydrogen permeable MoC/V metal membranes and improvement with application of Pd. Journal of Membrane Science, 2018, 549, 559-566.	8.2	22
46	Digital Control of SiO <sub>2</sub> -TiO <sub>2</sub> Mixed-Metal Oxides by Pulsed PECVD. ACS Applied Materials & Interfaces, 2009, 1, 2586-2591.	8.0	20
47	Thermomechanical Lift-Off and Recontacting of CdTe Solar Cells. ACS Applied Materials & Interfaces, 2018, 10, 44854-44861.	8.0	20
48	Scalable Synthesis of Size-Controlled Li <sub>2</sub> S Nanocrystals for Next-Generation Battery Technologies. ACS Applied Energy Materials, 2019, 2, 2246-2254.	5.1	20
49	An investigation of the role of plasma conditions on the deposition rate of electrochromic vanadium oxide thin films. Journal of Non-Crystalline Solids, 2005, 351, 1987-1994.	3.1	19
50	Self-Limiting Deposition of Anatase TiO <sub>2</sub> at Low Temperature by Pulsed PECVD. Electrochemical and Solid-State Letters, 2009, 12, H259.	2.2	19
51	Application of TiC in Vanadium-Based Hydrogen Membranes. Industrial & Engineering Chemistry Research, 2018, 57, 16084-16094.	3.7	19
52	The Role of Oxygen Dissociation in Plasma Enhanced Chemical Vapor Deposition of Zinc Oxide from Oxygen and Diethyl Zinc. Plasma Chemistry and Plasma Processing, 2005, 25, 169-192.	2.4	18
53	Comparison of Electrolyte Performance for Ta <sub>2</sub> O <sub>5</sub> Thin Films Produced by Pulsed and Continuous Wave PECVD. Journal of the Electrochemical Society, 2008, 155, J168.	2.9	18
54	Self-limiting growth of anatase TiO <sub>2</sub> : A comparison of two deposition techniques. Thin Solid Films, 2010, 518, 6733-6737.	1.8	18

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55	Tunability of ammonia adsorption over NaP zeolite. <i>Microporous and Mesoporous Materials</i> , 2021, 324, 111288.	4.4	18
56	Complementary interface formation toward high-efficiency all-back-contact perovskite solar cells. <i>Cell Reports Physical Science</i> , 2021, 2, 100363.	5.6	17
57	Enhancement of metal oxide deposition rate and quality using pulsed plasma-enhanced chemical vapor deposition at low frequency. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2008, 26, 1213-1217.	2.1	16
58	Rapid thermal processing of ZnTe:Cu contacted CdTe solar cells. , 2014, , .		16
59	Glass frit sealing method for macroscopic defects in Pd-based composite membranes with application in catalytic membrane reactors. <i>Separation and Purification Technology</i> , 2017, 172, 68-75.	7.9	16
60	Structural and chemical evolution of the CdS:O window layer during individual CdTe solar cell processing steps. <i>Solar Energy</i> , 2018, 159, 940-946.	6.1	16
61	Barium-Promoted Ruthenium Catalysts on Yttria-Stabilized Zirconia Supports for Ammonia Synthesis. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 18038-18047.	6.7	16
62	Inhibition of hydrogen flux in palladium membranes by pressure-induced restructuring of the membrane surface. <i>Journal of Membrane Science</i> , 2017, 535, 70-78.	8.2	15
63	Reactive Precipitation of Anhydrous Alkali Sulfide Nanocrystals with Concomitant Abatement of Hydrogen Sulfide and Cogeneration of Hydrogen. <i>ChemSusChem</i> , 2017, 10, 2904-2913.	6.8	15
64	Compact ammonia reforming at low temperature using catalytic membrane reactors. <i>Journal of Membrane Science</i> , 2022, 644, 120147.	8.2	15
65	Effect of wall conditions on the self-limiting deposition of metal oxides by pulsed plasma-enhanced chemical vapor deposition. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2007, 25, 1493-1499.	2.1	14
66	Self-limiting deposition of semiconducting ZnO by pulsed plasma-enhanced chemical vapor deposition. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2009, 27, 761-766.	2.1	14
67	The effect of copper on the sub-bandgap density of states of CdTe solar cells. <i>Applied Physics Letters</i> , 2015, 106, .	3.3	14
68	Scalable Synthesis of Li <sub>2</sub> S Nanocrystals for Solid-State Electrolyte Applications. <i>Journal of the Electrochemical Society</i> , 2020, 167, 070520.	2.9	14
69	The influence of nitrogen addition on the morphology, growth rate, and Raman spectra of combustion grown diamond. <i>Diamond and Related Materials</i> , 1998, 7, 1178-1183.	3.9	13
70	Formation of octadecyltrichlorosilane (OTS) self-assembled monolayers on amorphous alumina. <i>Applied Surface Science</i> , 2013, 282, 291-296.	6.1	13
71	Experimental and Theoretical Insights into the Potential of V <sub>2</sub> O <sub>3</sub> Surface Coatings for Hydrogen Permeable Vanadium Membranes. <i>Journal of Physical Chemistry C</i> , 2018, 122, 3488-3496.	3.1	13
72	Robust passivation of CdSeTe based solar cells using reactively sputtered magnesium zinc oxide. <i>Solar Energy Materials and Solar Cells</i> , 2021, 233, 111388.	6.2	13

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73	Dielectric performance of hybrid alumina-silicone nanolaminates synthesized by plasma enhanced chemical vapor deposition. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2011, 29, .	2.1	12
74	Design and operational considerations of catalytic membrane reactors for ammonia synthesis. <i>AIChE Journal</i> , 2021, 67, e17259.	3.6	12
75	Plasma-enhanced chemical vapor deposition synthesis of silica-silicone nanolaminates using a single precursor. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2011, 29, .	2.1	11
76	PdAu/YSZ composite hydrogen separation membranes with enhanced stability in the presence of CO. <i>Journal of Membrane Science</i> , 2020, 611, 118371.	8.2	11
77	Revealing the Importance of Front Interface Quality in Highly Doped CdSe <sub>x</sub> Te <sub>1-x</sub> Solar Cells. <i>ACS Energy Letters</i> , 2021, 6, 4203-4208.	17.4	11
78	Defect analysis and mechanical performance of plasma-deposited thin films on flexible polycarbonate substrates. <i>Applied Surface Science</i> , 2013, 268, 416-424.	6.1	10
79	Scalable Synthesis of Alkali Sulfide Nanocrystals Using a Bubble Column Reactor. <i>Industrial &amp; Engineering Chemistry Research</i> , 2018, 57, 8436-8442.	3.7	10
80	Lithium sulfide nanocrystals as cathode materials for advanced batteries. <i>Journal of Energy Chemistry</i> , 2021, 63, 138-169.	12.9	10
81	Dual-Wavelength Time-Resolved Photoluminescence Study of CdSe <sub>x</sub> Te <sub>1-x</sub> Surface Passivation via Mg <sub>y</sub> Zn <sub>1-y</sub> O and Al <sub>2</sub> O <sub>3</sub> . <i>IEEE Journal of Photovoltaics</i> , 2022, 12, 309-315.	2.5	9
82	Argyrodite Superionic Conductors Fabricated from Metathesis-Derived Li <sub>2</sub> S. <i>ACS Applied Energy Materials</i> , 2022, 5, 4029-4035.	5.1	9
83	Low-temperature deposition of optically transparent diamond using a low-pressure flat flame. <i>Diamond and Related Materials</i> , 1997, 6, 1862-1867.	3.9	8
84	Digital Control of SiO <sub>2</sub> Film Deposition at Room Temperature. <i>Journal of Physical Chemistry C</i> , 2009, 113, 6906-6909.	3.1	8
85	Atom probe tomography for nanoscale characterization of CdTe device absorber layers and interfaces. , 2014, , .		8
86	PECVD Synthesis of Flexible Optical Coatings for Renewable Energy Applications. <i>Plasma Processes and Polymers</i> , 2016, 13, 184-190.	3.0	8
87	Copper-induced recrystallization and interdiffusion of CdTe/ZnTe thin films. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2018, 36, .	2.1	8
88	Optical and Mechanical Properties of Nanocomposite Films Based on Polymethyl Methacrylate (PMMA) and Fumed Silica Nanoparticles. <i>Polymer Engineering and Science</i> , 2020, 60, 553-557.	3.1	8
89	Modeling and measurement of film deposition in a one-dimensional hot-wire CVD system. <i>Thin Solid Films</i> , 2003, 430, 28-32.	1.8	7
90	Self limiting deposition of pyrite absorbers by pulsed PECVD. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2014, 32, 021201.	2.1	7

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91	Thermodynamically Favorable Conversion of Hydrogen Sulfide into Valuable Products through Reaction with Sodium Naphthalenide. <i>ChemPlusChem</i> , 2015, 80, 1508-1512.	2.8	7
92	High temperature deuterium enrichment using TiC coated vanadium membranes. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2019, 37, .	2.1	7
93	Production and purification of anhydrous sodium sulfide. <i>Journal of Sulfur Chemistry</i> , 2021, 42, 426-442.	2.0	7
94	The influences of reactant composition and substrate material on the combustion synthesis of diamond. <i>Journal of Materials Research</i> , 1999, 14, 259-269.	2.6	6
95	Reduction of Mg from a MgO/MgAl <sub>2</sub> O <sub>4</sub> support by atomic hydrogen permeation through thin-film Pd membranes. <i>Journal of Membrane Science</i> , 2017, 541, 312-320.	8.2	6
96	Controlling conduction band alignment and carrier concentration in gallium-doped magnesium zinc oxide by reactive cosputtering. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2021, 39, 022802.	2.1	6
97	The role of argon in plasma-assisted deposition of indium nitride. <i>Journal of Crystal Growth</i> , 2006, 286, 400-406.	1.5	5
98	Crystal Growth and Atom Diffusion in (Cu)ZnTe/CdTe via Molecular Dynamics. <i>IEEE Journal of Photovoltaics</i> , 2018, 8, 594-599.	2.5	5
99	Feature scale modeling of pulsed plasma-enhanced chemical vapor deposition. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2014, 32, .	1.2	4
100	Dense Inorganic Membranes for Hydrogen Separation. , 2017, , 271-363.		4
101	A Numerical and Experimental Investigation of the Influence of Mass Transfer on HF/H <sub>2</sub> O Vapor-Phase Etching of Silicon Dioxide. <i>Journal of the Electrochemical Society</i> , 2000, 147, 4142.	2.9	3
102	Vapor Transport Deposition and Characterization of Polycrystalline CdTe Solar Absorbers. <i>Materials Research Society Symposia Proceedings</i> , 2003, 763, 5221.	0.1	3
103	Poisson-Boltzmann model of space charge layer effects on conductivity in randomly distributed nanoionic composites. <i>Electrochimica Acta</i> , 2012, 83, 454-462.	5.2	3
104	Carrier lifetime as a function of Se content for CdSe <sub>x</sub> Te <sub>1-x</sub> films grown on Al <sub>2</sub> O <sub>3</sub> and MgZnO. , 2021, , .		3
105	An X-ray Diffraction Investigation of Tin Oxide Deposition and Annealing. <i>Materials Research Society Symposia Proceedings</i> , 2001, 666, 171.	0.1	2
106	The impact of different metallization layers on CdTe solar cells contacted with ZnTe:Cu buffer layers. , 2016, , .		2
107	Synthesis and Application of Electronic Oxides for Solar Energy. <i>Materials Research Society Symposia Proceedings</i> , 2002, 730, 1.	0.1	1
108	Photoelectrochemical Performance of Anatase TiO <sub>2</sub> Thin Films Deposited by Self-Limiting Growth Techniques. <i>Journal of the Electrochemical Society</i> , 2010, 157, D432.	2.9	1

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109	Mitigation of Crack Formation During Thermo-Mechanical Delamination of CdTe Solar Cells. , 2018, , .		1
110	Solution Synthesis of Sb <sub>2</sub> S <sub>3</sub> and Na <sub>3</sub> SbS <sub>4</sub> Solid-State Electrolyte. Journal of the Electrochemical Society, 0, , .	2.9	1
111	Atmospheric pressure chemical vapor deposition of CdTe reactor design considerations. , 1999, , .		0
112	Field Dependent Electrical Conduction in Metal-Insulator-Metal Devices using Alumina-Silicone Nanolaminate Dielectrics. Materials Research Society Symposia Proceedings, 2013, 1547, 95-102.	0.1	0
113	Field Dependent Carrier Transport Mechanisms in Metal-Insulator-Metal Devices with Ba <sub>0.8</sub> Sr <sub>0.2</sub> TiO <sub>3</sub> /ZrO <sub>2</sub> Heterostructured Thin Films as the Dielectric. Materials Research Society Symposia Proceedings, 2013, 1547, 53-60.	0.1	0
114	Temperature Dependent Electrical and Dielectrics Properties of Metal-Insulator-Metal Capacitors with Alumina-Silicone Nanolaminate Films. Materials Research Society Symposia Proceedings, 2014, 1675, 169-176.	0.1	0
115	CdTe solar cells employing CdS and Te window layers. , 2016, , .		0
116	Photoluminescence Study of the Mg <sub>x</sub> Zn <sub>1-x</sub> O/Cd <sub>y</sub> Te <sub>1-y</sub> Interface: The Effect of Oxide Bandgap and Resulting Band Alignment. , 2021, , .		0