

# Steven A Ringel

## List of Publications by Year in descending order

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60  
papers

1,984  
citations

236925

25  
h-index

243625

44  
g-index

60  
all docs

60  
docs citations

60  
times ranked

1548  
citing authors

#	ARTICLE	IF	CITATIONS
1	$\text{In}^2$ -Gallium oxide power electronics. APL Materials, 2022, 10, .	5.1	184
2	Metamorphic Tunnel Junctions Grown Via MOCVD Designed for GaAs <sub>0.75</sub> P <sub>0.25</sub> /Si Tandem Solar Cells. IEEE Journal of Photovoltaics, 2021, 11, 408-414.	2.5	2
3	Designing an Epitaxially-Integrated DBR for Dislocation Mitigation in Monolithic GaAsP/Si Tandem Solar Cells. IEEE Journal of Photovoltaics, 2021, 11, 400-407.	2.5	4
4	Recent Advances in GaAsP/Si Top Cell Enabling 27% Tandem Efficiency. , 2021, , .		2
5	23.4% monolithic epitaxial GaAsP/Si tandem solar cells and quantification of losses from threading dislocations. Solar Energy Materials and Solar Cells, 2021, 230, 111299.	6.2	14
6	Metalorganic Chemical Vapor Deposition Gallium Nitride with Fast Growth Rate for Vertical Power Device Applications. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2000469.	1.8	11
7	Electrostatic Engineering Using Extreme Permittivity Materials for Ultra-Wide Bandgap Semiconductor Transistors. IEEE Transactions on Electron Devices, 2021, 68, 29-35.	3.0	30
8	Influence of growth temperature on defect states throughout the bandgap of MOCVD-grown $\text{In}^2$ -Ga <sub>2</sub> O <sub>3</sub> . Applied Physics Letters, 2020, 117, .	3.3	21
9	High electron density $\text{In}^2$ -(Al <sub>0.17</sub> Ga <sub>0.83</sub> ) <sub>2</sub> O <sub>3</sub> /Ga <sub>2</sub> O <sub>3</sub> modulation doping using an ultra-thin (1%nm) spacer layer. Journal of Applied Physics, 2020, 127, .	2.5	64
10	Probing unintentional Fe impurity incorporation in MOCVD homoepitaxy GaN: Toward GaN vertical power devices. Journal of Applied Physics, 2020, 127, 215707.	2.5	26
11	Probing Charge Transport and Background Doping in Metal-Organic Chemical Vapor Deposition-Grown (010) $\text{In}^2$ -Ga <sub>2</sub> O <sub>3</sub> . Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000145.	2.4	79
12	Full bandgap defect state characterization of $\text{In}^2$ -Ga <sub>2</sub> O <sub>3</sub> grown by metal organic chemical vapor deposition. APL Materials, 2020, 8, .	5.1	52
13	The Critical Role of AlInP Window Design in III-V Rear-Emitter Solar Cells. IEEE Journal of Photovoltaics, 2020, 10, 758-764.	2.5	8
14	Improving GaAsP/Si Tandem Solar Cells Using Silicon Passivated Contacts. , 2020, , .		0
15	Electrical Properties 3. Springer Series in Materials Science, 2020, , 421-441.	0.6	0
16	$\text{In}^2$ -Ga <sub>2</sub> O <sub>3</sub> Delta-Doped Field-Effect Transistors With Current Gain Cutoff Frequency of 27 GHz. IEEE Electron Device Letters, 2019, 40, 1052-1055.	3.9	119
17	Mechanism of Si doping in plasma assisted MBE growth of $\text{In}^2$ -Ga <sub>2</sub> O <sub>3</sub> . Applied Physics Letters, 2019, 115, .	3.3	41
18	Identification of critical buffer traps in Si $\text{In}^2$ -doped $\text{In}^2$ -Ga <sub>2</sub> O <sub>3</sub> MESFETs. Applied Physics Letters, 2019, 115, .	3.3	38

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19	Unusual Formation of Point-Defect Complexes in the Ultrawide-Band-Gap Semiconductor $\hat{\Gamma}^2$ -Ga <sub>2</sub> O <sub>3</sub> . Physical Review X, 2019, 9, .	3.9	10
20	Velocity saturation in La-doped BaSnO <sub>3</sub> thin films. Applied Physics Letters, 2019, 115, .	3.3	9
21	Impact of deep level defects induced by high energy neutron radiation in $\hat{\Gamma}^2$ -Ga <sub>2</sub> O <sub>3</sub> . APL Materials, 2019, 7, .	5.1	80
22	Breakdown Characteristics of $\beta$ -(Al <sub>0.22</sub> Ga <sub>0.78</sub> ) <sub>2</sub> O <sub>3</sub> /Ga <sub>2</sub> O <sub>3</sub> Field-Plated Modulation-Doped Field-Effect Transistors. IEEE Electron Device Letters, 2019, 40, 1241-1244.	3.9	82
23	Toward $\sim$ 25% Efficient Monolithic Epitaxial GaAsP/Si Tandem Solar Cells. , 2019, , .		13
24	Influence of neutron irradiation on deep levels in Ge-doped (010) $\hat{\Gamma}^2$ -Ga <sub>2</sub> O <sub>3</sub> layers grown by plasma-assisted molecular beam epitaxy. APL Materials, 2019, 7, .	5.1	31
25	Metal/BaTiO <sub>3</sub> / $\hat{\Gamma}^2$ -Ga <sub>2</sub> O <sub>3</sub> dielectric heterojunction diode with 5.7 MV/cm breakdown field. Applied Physics Letters, 2019, 115, .	3.3	76
26	Investigation of Rear-Emitter GaAs <sub>0.75</sub> P <sub>0.25</sub> Top Cells for Application to III-V/Si Tandem Photovoltaics. IEEE Journal of Photovoltaics, 2019, 9, 1644-1651.	2.5	10
27	Evaluation of Low-Temperature Saturation Velocity in $\beta$ -(Al <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> /Ga <sub>2</sub> O <sub>3</sub> Modulation-Doped Field-Effect Transistors. IEEE Transactions on Electron Devices, 2019, 66, 1574-1578.	3.0	66
28	Investigation of Trap-Induced Threshold Voltage Instability in GaN-on-Si MISHEMTs. IEEE Transactions on Electron Devices, 2019, 66, 890-895.	3.0	15
29	Deep level defects in Ge-doped (010) $\hat{\Gamma}^2$ -Ga <sub>2</sub> O <sub>3</sub> layers grown by plasma-assisted molecular beam epitaxy. Journal of Applied Physics, 2018, 123, .	2.5	91
30	Effect of Silicon Front Surface Doping Profile on GaP/Si Heterostructure for III-V/GaP/Si Multi-junction Solar Cells. , 2018, , .		2
31	High Performance Metamorphic Tunnel Junctions for GaAsP/Si Tandem Solar Cells Grown via MOCVD. , 2018, , .		7
32	Effect of buffer iron doping on delta-doped $\hat{\Gamma}^2$ -Ga <sub>2</sub> O <sub>3</sub> metal semiconductor field effect transistors. Applied Physics Letters, 2018, 113, .	3.3	54
33	Characterization of traps in InAlN by optically and thermally stimulated deep level defect spectroscopies. Journal of Applied Physics, 2018, 124, .	2.5	3
34	Trapping Effects in Si-Doped -Ga <sub>2</sub> O <sub>3</sub> MESFETs on an Fe-Doped -Ga <sub>2</sub> O <sub>3</sub> Substrate. IEEE Electron Device Letters, 2018, 39, 1042-1045.	3.9	78
35	In Situ and Ex Situ Investigations of KF Postdeposition Treatment Effects on CIGS Solar Cells. IEEE Journal of Photovoltaics, 2017, 7, 665-669.	2.5	43
36	Optimization of a GaAsP Top Cell for Implementation in a III-V/Si Tandem Structure. , 2017, , .		6

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37	Investigation of traps density and position in alkali treated Cu(In,Ga)Se <sub>2</sub> thin films and solar cells. , 2017, , .		0
38	High-Field Stress, Low-Frequency Noise, and Long-Term Reliability of AlGaIn/GaN HEMTs. IEEE Transactions on Device and Materials Reliability, 2016, 16, 282-289.	2.0	25
39	Evolution of silicon bulk lifetime during III-V/Si multijunction solar cell epitaxial growth. Progress in Photovoltaics: Research and Applications, 2016, 24, 634-644.	8.1	22
40	GaAs <sub>0.75</sub> P <sub>0.25</sub> /Si Dual-Junction Solar Cells Grown by MBE and MOCVD. IEEE Journal of Photovoltaics, 2016, 6, 326-331.	2.5	101
41	The design of single-junction GaAs and dual-junction GaAs/Si in the presence of threading dislocation density. , 2015, , .		1
42	Electron Channeling Contrast Imaging for Rapid III-V Heteroepitaxial Characterization. Journal of Visualized Experiments, 2015, , e52745.	0.3	11
43	Novel Applications of Electron Channeling Contrast Imaging. Microscopy and Microanalysis, 2015, 21, 1897-1898.	0.4	0
44	Site-Specific TEM Specimen Preparation of Samples with Sub-Surface Features. Microscopy and Microanalysis, 2015, 21, 2157-2158.	0.4	1
45	Effects of Applied Bias and High Field Stress on the Radiation Response of GaN/AlGaIn HEMTs. IEEE Transactions on Nuclear Science, 2015, 62, 2423-2430.	2.0	84
46	Designing Bottom Silicon Solar Cells for Multijunction Devices. IEEE Journal of Photovoltaics, 2015, 5, 683-690.	2.5	19
47	Applications of Electron Channeling Contrast Imaging for the Rapid Characterization of Extended Defects in III-V/Si Heterostructures. IEEE Journal of Photovoltaics, 2015, 5, 676-682.	2.5	35
48	Rapid misfit dislocation characterization in heteroepitaxial III-V/Si thin films by electron channeling contrast imaging. Applied Physics Letters, 2014, 104, .	3.3	55
49	Direct Determination of Energy Band Alignments of Ni/Al <sub>2</sub> O <sub>3</sub> /GaN MOS Structures Using Internal Photoemission Spectroscopy. Journal of Electronic Materials, 2014, 43, 828-832.	2.2	16
50	Interface trap characterization of atomic layer deposition Al <sub>2</sub> O <sub>3</sub> /GaN metal-insulator-semiconductor capacitors using optically and thermally based deep level spectroscopies. Journal of Applied Physics, 2013, 113, .	2.5	44
51	Design of bottom silicon solar cell for multijunction devices. , 2013, , .		3
52	Growth and characterization of InGaAs quantum dots on metamorphic GaAsP templates by molecular beam epitaxy. , 2012, , .		1
53	Lattice-matched GaP/SiGe virtual substrates for low-dislocation density GaInP/GaAsP/Si solar cells. , 2012, , .		1
54	Growth model for plasma-assisted molecular beam epitaxy of N-polar and Ga-polar In <sub>x</sub> Ga <sub>1-x</sub> N. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2011, 29, .	1.2	41

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55	Molecular beam epitaxy of N-polar InGaN. Applied Physics Letters, 2010, 97, .	3.3	64
56	Pulsed- <i>IV</i> Pulsed-RF Cold-FET Parasitic Extraction of Biased AlGaIn/GaN HEMTs Using Large Signal Network Analyzer. IEEE Transactions on Microwave Theory and Techniques, 2010, 58, 1077-1088.	4.6	24
57	Characterization of traps in AlGaIn/GaN HEMTs with a combined large signal network analyzer/deep level optical spectrometer system. , 2009, , .		3
58	Additive phase noise measurements of AlGaIn/GaN HEMTs using a large signal network analyzer and a tunable monochromatic light source. , 2009, , .		6
59	Characterization and Discrimination of AlGaIn- and GaN-related Deep Levels in AlGaIn/GaN Heterostructures. AIP Conference Proceedings, 2007, , .	0.4	1
60	III-V Multi-Junction Materials and Solar Cells on Engineered SiGe/Si Substrates. Materials Research Society Symposia Proceedings, 2004, 836, L6.2.1.	0.1	3