

# 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	$\text{In}^{2-}$ -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
3	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
4	Deep level defects in Ge-doped (010) $\text{In}^{2-}$ -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
5	Effects of Applied Bias and High Field Stress on the Radiation Response of GaN/AlGaN HEMTs. IEEE Transactions on Nuclear Science, 2015, 62, 2423-2430.	2.0	84
6	Breakdown Characteristics of $\text{In}^{2-}$ -(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
7	Impact of deep level defects induced by high energy neutron radiation in $\text{In}^{2-}$ -Ga <sub>2</sub> O <sub>3</sub> . APL Materials, 2019, 7, .	5.1	80
8	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
9	Trapping Effects in Si-Doped $\text{In}^{2-}$ -Ga <sub>2</sub> O <sub>3</sub> MESFETs on an Fe-Doped $\text{In}^{2-}$ -Ga <sub>2</sub> O <sub>3</sub> Substrate. IEEE Electron Device Letters, 2018, 39, 1042-1045.	3.9	78
10	Metal/BaTiO <sub>3</sub> / $\text{In}^{2-}$ -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
11	Evaluation of Low-Temperature Saturation Velocity in $\text{In}^{2-}$ -(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
12	Molecular beam epitaxy of N-polar InGaN. Applied Physics Letters, 2010, 97, .	3.3	64
13	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
14	Unusual Formation of Point-Defect Complexes in the Ultrawide-Band-Gap Semiconductor $\text{In}^{2-}$ -(Al <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> . Physical Review X, 2019, 9, .	3.9	62
15	Rapid misfit dislocation characterization in heteroepitaxial III-V/Si thin films by electron channeling contrast imaging. Applied Physics Letters, 2014, 104, .	3.3	55
16	Effect of buffer iron doping on delta-doped $\text{In}^{2-}$ -Ga <sub>2</sub> O <sub>3</sub> metal semiconductor field effect transistors. Applied Physics Letters, 2018, 113, .	3.3	54
17	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
18	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

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19	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
20	Growth model for plasma-assisted molecular beam epitaxy of N-polar and Ga-polar $\text{In}_x\text{Ga}_{1-x}\text{N}$ . Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2011, 29, .	1.2	41
21	Mechanism of Si doping in plasma assisted MBE growth of $\text{In}^{2-}\text{-Ga}_2\text{O}_3$ . Applied Physics Letters, 2019, 115, .	3.3	41
22	Identification of critical buffer traps in Si $\delta$ -doped $\text{In}^{2-}\text{-Ga}_2\text{O}_3$ MESFETs. Applied Physics Letters, 2019, 115, .	3.3	38
23	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
24	Influence of neutron irradiation on deep levels in Ge-doped (010) $\text{In}^{2-}\text{-Ga}_2\text{O}_3$ layers grown by plasma-assisted molecular beam epitaxy. APL Materials, 2019, 7, .	5.1	31
25	Electrostatic Engineering Using Extreme Permittivity Materials for Ultra-Wide Bandgap Semiconductor Transistors. IEEE Transactions on Electron Devices, 2021, 68, 29-35.	3.0	30
26	Probing unintentional Fe impurity incorporation in MOCVD homoepitaxy GaN: Toward GaN vertical power devices. Journal of Applied Physics, 2020, 127, 215707.	2.5	26
27	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
28	Pulsed-IV 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
29	Evolution of silicon bulk lifetime during III-V $\delta$ -Si multijunction solar cell epitaxial growth. Progress in Photovoltaics: Research and Applications, 2016, 24, 634-644.	8.1	22
30	Influence of growth temperature on defect states throughout the bandgap of MOCVD-grown $\text{In}^{2-}\text{-Ga}_2\text{O}_3$ . Applied Physics Letters, 2020, 117, .	3.3	21
31	Designing Bottom Silicon Solar Cells for Multijunction Devices. IEEE Journal of Photovoltaics, 2015, 5, 683-690.	2.5	19
32	Direct Determination of Energy Band Alignments of Ni/Al $_2$ O $_3$ /GaN MOS Structures Using Internal Photoemission Spectroscopy. Journal of Electronic Materials, 2014, 43, 828-832.	2.2	16
33	Investigation of Trap-Induced Threshold Voltage Instability in GaN-on-Si MISHEMTs. IEEE Transactions on Electron Devices, 2019, 66, 890-895.	3.0	15
34	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
35	Toward $\geq$ 25% Efficient Monolithic Epitaxial GaAsP/Si Tandem Solar Cells. , 2019, , .		13
36	Electron Channeling Contrast Imaging for Rapid III-V Heteroepitaxial Characterization. Journal of Visualized Experiments, 2015, , e52745.	0.3	11

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37	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
38	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
39	Velocity saturation in La-doped BaSnO <sub>3</sub> thin films. Applied Physics Letters, 2019, 115, .	3.3	9
40	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
41	High Performance Metamorphic Tunnel Junctions for GaAsP/Si Tandem Solar Cells Grown via MOCVD. , 2018, , .		7
42	Additive phase noise measurements of AlGaIn/GaN HEMTs using a large signal network analyzer and a tunable monochromatic light source. , 2009, , .		6
43	Optimization of a GaAsP Top Cell for Implementation in a III-V/Si Tandem Structure. , 2017, , .		6
44	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
45	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
46	Characterization of traps in AlGaIn/GaN HEMTs with a combined large signal network analyzer/deep level optical spectrometer system. , 2009, , .		3
47	Design of bottom silicon solar cell for multijunction devices. , 2013, , .		3
48	Characterization of traps in InAlN by optically and thermally stimulated deep level defect spectroscopies. Journal of Applied Physics, 2018, 124, .	2.5	3
49	Effect of Silicon Front Surface Doping Profile on GaP/Si Heterostructure for III-V/GaP/Si Multi-junction Solar Cells. , 2018, , .		2
50	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
51	Recent Advances in GaAsP/Si Top Cell Enabling 27% Tandem Efficiency. , 2021, , .		2
52	Characterization and Discrimination of AlGaIn- and GaN-related Deep Levels in AlGaIn/GaN Heterostructures. AIP Conference Proceedings, 2007, , .	0.4	1
53	Growth and characterization of InGaAs quantum dots on metamorphic GaAsP templates by molecular beam epitaxy. , 2012, , .		1
54	Lattice-matched GaP/SiGe virtual substrates for low-dislocation density GaInP/GaAsP/Si solar cells. , 2012, , .		1

#	ARTICLE	IF	CITATIONS
55	The design of single-junction GaAs and dual-junction GaAs/Si in the presence of threading dislocation density. , 2015, , .		1
56	Site-Specific TEM Specimen Preparation of Samples with Sub-Surface Features. Microscopy and Microanalysis, 2015, 21, 2157-2158.	0.4	1
57	Novel Applications of Electron Channeling Contrast Imaging. Microscopy and Microanalysis, 2015, 21, 1897-1898.	0.4	0
58	Investigation of traps density and position in alkali treated Cu(In,Ga)Se <sub>2</sub> thin films and solar cells. , 2017, , .		0
59	Improving GaAsP/Si Tandem Solar Cells Using Silicon Passivated Contacts. , 2020, , .		0
60	Electrical Properties 3. Springer Series in Materials Science, 2020, , 421-441.	0.6	0