

# Roman Engel-Herbert

## List of Publications by Year in descending order

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70  
papers

4,626  
citations

159585

30  
h-index

98798

67  
g-index

73  
all docs

73  
docs citations

73  
times ranked

6119  
citing authors

#	ARTICLE	IF	CITATIONS
1	Emergent interface vibrational structure of oxide superlattices. <i>Nature</i> , 2022, 601, 556-561.	27.8	40
2	Oxygen vacancy dynamics in monoclinic metallic VO <sub>2</sub> domain structures. <i>Applied Physics Letters</i> , 2022, 120, .	3.3	6
3	A low-temperature route for producing epitaxial perovskite superlattice structures on (001)-oriented SrTiO <sub>3</sub> /Si substrates. <i>Journal of Materials Chemistry C</i> , 2021, 9, 13115-13122.	5.5	3
4	Self-regulated growth of [111]-oriented perovskite oxide films using hybrid molecular beam epitaxy. <i>APL Materials</i> , 2021, 9, .	5.1	4
5	Sticking coefficients of selenium and tellurium. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2021, 39, .	2.1	7
6	Dynamics of voltage-driven oscillating insulator-metal transitions. <i>Physical Review B</i> , 2021, 104, .	3.2	10
7	Substrate Modification during Chemical Vapor Deposition of hBN on Sapphire. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 54516-54526.	8.0	15
8	Rewritable Nanoplasmonics through Room-Temperature Phase Manipulations of Vanadium Dioxide. <i>Nano Letters</i> , 2020, 20, 7760-7766.	9.1	10
9	SrNbO <sub>3</sub> as a transparent conductor in the visible and ultraviolet spectra. <i>Communications Physics</i> , 2020, 3, .	5.3	48
10	Sputtered Sr <sub>x</sub> NbO <sub>3</sub> as a UV-Transparent Conducting Film. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 30520-30529.	8.0	18
11	Property and cation valence engineering in entropy-stabilized oxide thin films. <i>Physical Review Materials</i> , 2020, 4, .	2.4	20
12	On-Demand Nanoscale Manipulations of Correlated Oxide Phases. <i>Advanced Functional Materials</i> , 2019, 29, 1905585.	14.9	14
13	Structural dynamics of LaVO <sub>3</sub> on the nanosecond time scale. <i>Structural Dynamics</i> , 2019, 6, 014502.	2.3	3
14	Large tetragonality and room temperature ferroelectricity in compressively strained CaTiO <sub>3</sub> thin films. <i>APL Materials</i> , 2019, 7, .	5.1	10
15	Scaling growth rates for perovskite oxide virtual substrates on silicon. <i>Nature Communications</i> , 2019, 10, 2464.	12.8	19
16	Toward a Low-Temperature Route for Epitaxial Integration of BiFeO <sub>3</sub> on Si. <i>Journal of Physical Chemistry C</i> , 2019, 123, 12203-12210.	3.1	6
17	Temperature-dependent growth window of CaTiO <sub>3</sub> films grown by hybrid molecular beam epitaxy. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2018, 36, .	2.1	8
18	Frontiers in the Growth of Complex Oxide Thin Films: Past, Present, and Future of Hybrid MBE. <i>Advanced Functional Materials</i> , 2018, 28, 1702772.	14.9	78

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19	Continuously Tuning Epitaxial Strains by Thermal Mismatch. ACS Nano, 2018, 12, 1306-1312.	14.6	44
20	A Three-Terminal Edge-Triggered Mott Switch. , 2018, , .		4
21	Overlapping growth windows to build complex oxide superlattices. APL Materials, 2018, 6, 111104.	5.1	3
22	Hybrid vanadate waveguiding configurations for extreme optical confinement and efficient polarization management in the near-infrared. Nanoscale, 2018, 10, 16667-16674.	5.6	4
23	Native oxide removal from Ge surfaces by hydrogen plasma. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2018, 36, .	2.1	2
24	Opportunities in vanadium-based strongly correlated electron systems. MRS Communications, 2017, 7, 27-52.	1.8	77
25	High-Quality LaVO <sub>3</sub> Films as Solar Energy Conversion Material. ACS Applied Materials & Interfaces, 2017, 9, 12556-12562.	8.0	26
26	Modeling and in Situ Probing of Surface Reactions in Atomic Layer Deposition. ACS Applied Materials & Interfaces, 2017, 9, 15848-15856.	8.0	33
27	Self-regulated growth of CaVO <sub>3</sub> by hybrid molecular beam epitaxy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2017, 35, .	2.1	13
28	Improving the structural quality and electrical resistance of SrTiO <sub>3</sub> thin films on Si (001) via a two-step anneal. Journal of Applied Physics, 2016, 119, .	2.5	14
29	Mapping growth windows in quaternary perovskite oxide systems by hybrid molecular beam epitaxy. Applied Physics Letters, 2016, 109, .	3.3	22
30	Creating Ruddlesden-Popper phases by hybrid molecular beam epitaxy. Applied Physics Letters, 2016, 109, .	3.3	18
31	Unleashing Strain Induced Ferroelectricity in Complex Oxide Thin Films via Precise Stoichiometry Control. Advanced Functional Materials, 2016, 26, 7271-7279.	14.9	30
32	Imprinting of Local Metallic States into VO <sub>2</sub> with Ultraviolet Light. Advanced Functional Materials, 2016, 26, 6612-6618.	14.9	43
33	The ReaxFF reactive force-field: development, applications and future directions. Npj Computational Materials, 2016, 2, .	8.7	1,319
34	Photoluminescence of monolayer transition metal dichalcogenides integrated with VO <sub>2</sub> . Journal of Physics Condensed Matter, 2016, 28, 504001.	1.8	10
35	Creative tension in layered crystals. Nature Materials, 2016, 15, 928-930.	27.5	6
36	Correlated metals as transparent conductors. Nature Materials, 2016, 15, 204-210.	27.5	291

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37	Accessing a growth window for SrVO <sub>3</sub> thin films. Applied Physics Letters, 2015, 107, .	3.3	48
38	Phase stabilization of VO <sub>2</sub> thin films in high vacuum. Journal of Applied Physics, 2015, 118, .	2.5	14
39	Growth of SrVO <sub>3</sub> thin films by hybrid molecular beam epitaxy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2015, 33, .	2.1	22
40	Transport properties of ultra-thin VO <sub>2</sub> films on (001) TiO <sub>2</sub> grown by reactive molecular-beam epitaxy. Applied Physics Letters, 2015, 107, .	3.3	88
41	Self-regulated growth of LaVO <sub>3</sub> thin films by hybrid molecular beam epitaxy. Applied Physics Letters, 2015, 106, .	3.3	42
42	Wafer-scale growth of VO <sub>2</sub> thin films using a combinatorial approach. Nature Communications, 2015, 6, 8475.	12.8	117
43	A steep-slope transistor based on abrupt electronic phase transition. Nature Communications, 2015, 6, 7812.	12.8	294
44	High quality HfO <sub>2</sub> /p-GaSb(001) metal-oxide-semiconductor capacitors with 0.8Å%nm equivalent oxide thickness. Applied Physics Letters, 2014, 105, .	3.3	20
45	Growth of SrTiO <sub>3</sub> on Si(001) by hybrid molecular beam epitaxy. Physica Status Solidi - Rapid Research Letters, 2014, 8, 917-923.	2.4	32
46	Synchronized charge oscillations in correlated electron systems. Scientific Reports, 2014, 4, .	3.3	155
47	Molecular beam epitaxy of complex oxides. , 2013, , 417-449.		12
48	Highly Conductive SrVO <sub>3</sub> as a Bottom Electrode for Functional Perovskite Oxides. Advanced Materials, 2013, 25, 3578-3582.	21.0	116
49	Nitrogen-passivated dielectric/InGaAs interfaces with sub-nm equivalent oxide thickness and low interface trap densities. Applied Physics Letters, 2013, 102, .	3.3	73
50	Intrinsic electronic switching time in ultrathin epitaxial vanadium dioxide thin film. Applied Physics Letters, 2013, 102, .	3.3	39
51	Low-Temperature Atomic-Layer-Deposited High- $\epsilon^{\circ}$ Dielectric for p-Channel In <sub>0.7</sub> Ga <sub>0.3</sub> As/GaAs <sub>0.35</sub> Sb <sub>0.65</sub> Heterojunction Tunneling Field-Effect Transistor. Applied Physics Express, 2013, 6, 101201.	2.4	8
52	Nanoscale structural evolution of electrically driven insulator to metal transition in vanadium dioxide. Applied Physics Letters, 2013, 103, .	3.3	31
53	Micromagnetic analysis of unusual, V-shaped domain transitions in MnAs nanowires. Journal of Magnetism and Magnetic Materials, 2011, 323, 1840-1845.	2.3	6
54	Influence of trimethylaluminum on the growth and properties of HfO <sub>2</sub> /In <sub>0.53</sub> Ga <sub>0.47</sub> As interfaces. Applied Physics Letters, 2011, 98, 052911.	3.3	28

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55	Al-doped HfO <sub>2</sub> /In <sub>0.53</sub> Ga <sub>0.47</sub> As metal-oxide-semiconductor capacitors. Applied Physics Letters, 2011, 98, 142901.	3.3	23
56	Epitaxial SrTiO <sub>3</sub> films with electron mobilities exceeding 30,000 cm <sup>2</sup> V <sup>-1</sup> s <sup>-1</sup> . Nature Materials, 2010, 9, 482-484.	27.3	342
57	Fermi-Level Unpinning of HfO <sub>2</sub> /In <sub>0.53</sub> Ga <sub>0.47</sub> As Gate Stack Using Hydrogen Anneals. ECS Transactions, 2010, 33, 117-121.	0.5	1
58	Effect of postdeposition anneals on the Fermi level response of HfO <sub>2</sub> /In <sub>0.53</sub> Ga <sub>0.47</sub> As gate stacks. Journal of Applied Physics, 2010, 108, .	2.5	35
59	Quantification of trap densities at dielectric/III-V semiconductor interfaces. Applied Physics Letters, 2010, 97, .	3.3	44
60	Analysis of trap state densities at HfO <sub>2</sub> /In <sub>0.53</sub> Ga <sub>0.47</sub> As interfaces. Applied Physics Letters, 2010, 96, .	3.3	63
61	Comparison of methods to quantify interface trap densities at dielectric/III-V semiconductor interfaces. Journal of Applied Physics, 2010, 108, .	2.5	352
62	Metal-oxide-semiconductor capacitors with ZrO <sub>2</sub> dielectrics grown on In <sub>0.53</sub> Ga <sub>0.47</sub> As by chemical beam deposition. Applied Physics Letters, 2009, 95, 062908.	3.3	42
63	Growth modes in metal-organic molecular beam epitaxy of TiO <sub>2</sub> on r-plane sapphire. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2009, 27, 230-233.	2.1	32
64	Chemical beam deposition of high- <i>k</i> gate dielectrics on III-V semiconductors: TiO <sub>2</sub> on In <sub>0.53</sub> Ga <sub>0.47</sub> As. Materials Research Society Symposia Proceedings, 2009, 1155, 1.	0.1	2
65	Microstructure of epitaxial rutile TiO <sub>2</sub> films grown by molecular beam epitaxy on r-plane Al <sub>2</sub> O <sub>3</sub> . Journal of Crystal Growth, 2009, 312, 149-153.	1.5	21
66	Stoichiometry optimization of homoepitaxial oxide thin films using x-ray diffraction. Applied Physics Letters, 2009, 95, .	3.3	38
67	Growth of high-quality SrTiO <sub>3</sub> films using a hybrid molecular beam epitaxy approach. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2009, 27, 461-464.	2.1	155
68	Metal-oxide-semiconductor capacitors with erbium oxide dielectrics on In <sub>0.53</sub> Ga <sub>0.47</sub> As channels. Applied Physics Letters, 2009, 94, 122907.	3.3	9
69	Effects of hydrogen anneals on oxygen deficient SrTiO <sub>3</sub> <sup>x</sup> single crystals. Applied Physics Letters, 2008, 93, .	3.3	42
70	Micromagnetic properties of epitaxial MnAs films on GaAs surfaces. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 1763-1766.	0.8	2