Marcelo J Rozenberg

List of Publications by Year
in descending order

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129	12,786	57681 46	25230 113
papers	citations	h-index	g-index

133	133	133	9455
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dynamical mean-field theory of strongly correlated fermion systems and the limit of infinite dimensions. Reviews of Modern Physics, 1996, 68, 13-125.	16.4	5,739
2	Two-dimensional electron gas with universal subbands at the surface of SrTiO3. Nature, 2011, 469, 189-193.	13.7	634
3	Nonvolatile Memory with Multilevel Switching: A Basic Model. Physical Review Letters, 2004, 92, 178302.	2.9	545
4	Mott transition in thed=â^ž Hubbard model at zero temperature. Physical Review Letters, 1993, 70, 1666-1669.	2.9	314
5	Optical Conductivity in Mott-Hubbard Systems. Physical Review Letters, 1995, 75, 105-108.	2.9	237
6	Mott-Hubbard transition in infinite dimensions. Physical Review Letters, 1992, 69, 1236-1239.	2.9	208
7	Mott-Hubbard transition in infinite dimensions. II. Physical Review B, 1994, 49, 10181-10193.	1.1	194
8	A Leakyâ€Integrateâ€andâ€Fire Neuron Analog Realized with a Mott Insulator. Advanced Functional Materials, 2017, 27, 1604740.	7.8	186
9	Mechanism for bipolar resistive switching in transition-metal oxides. Physical Review B, 2010, 81, .	1.1	159
10	Transfer of spectral weight in spectroscopies of correlated electron systems. Physical Review B, 1996, 54, 8452-8468.	1.1	155
11	Challenges in materials and devices for resistive-switching-based neuromorphic computing. Journal of Applied Physics, 2018, 124, .	1.1	155
12	Landau Theory of the Finite Temperature Mott Transition. Physical Review Letters, 2000, 84, 5180-5183.	2.9	146
13	Resistance Switching and Formation of a Conductive Bridge in Metal/Binary Oxide/Metal Structure for Memory Devices. Japanese Journal of Applied Physics, 2008, 47, 6266.	0.8	146
14	Subthreshold firing in Mott nanodevices. Nature, 2019, 569, 388-392.	13.7	139
15	Integer-filling metal-insulator transitions in the degenerate Hubbard model. Physical Review B, 1997, 55, R4855-R4858.	1.1	133
16	Resistive Switching in Mott Insulators and Correlated Systems. Advanced Functional Materials, 2015, 25, 6287-6305.	7.8	130
17	Mechanism of Electric-Pulse-Induced Resistance Switching in Manganites. Physical Review Letters, 2007, 98, 116601.	2.9	123
18	Strong electron correlation effects in nonvolatile electronic memory devices. Applied Physics Letters, 2006, 88, 033510.	1.5	118

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19	Universal Electricâ€Fieldâ€Driven Resistive Transition in Narrowâ€Gap Mott Insulators. Advanced Materials, 2013, 25, 3222-3226.	11.1	114
20	Critical Behavior near the Mott Transition in the Hubbard Model. Physical Review Letters, 1995, 74, 2082-2085.	2.9	113
21	Finite Temperature Mott Transition in the Hubbard Model in Infinite Dimensions. Physical Review Letters, 1999, 83, 3498-3501.	2.9	107
22	Electronic structure of Ca 1 âˆ’ x Sr x VO 3 : A tale of two energy scales. Europhysics Letters, 2001, 55, 246-252.	0.7	103
23	Avalanche breakdown in GaTa4Se8âˆ’xTex narrow-gap Mott insulators. Nature Communications, 2013, 4, 1722.	5.8	100
24	Correlation induced insulator to metal transitions. Physical Review Letters, 1994, 72, 2761-2764.	2.9	91
25	Dynamical Mean Field Theory with the Density Matrix Renormalization Group. Physical Review Letters, 2004, 93, 246403.	2.9	91
26	Orbital symmetry reconstruction and strong mass renormalization in the two-dimensional electron gas at the surface of KTaO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review B, 2012, 86, .	1.1	82
27	Imaging the nanoscale phase separation in vanadium dioxide thin films at terahertz frequencies. Nature Communications, 2018, 9, 3604.	5.8	79
28	Non-thermal resistive switching in Mott insulator nanowires. Nature Communications, 2020, 11, 2985.	5.8	77
29	Bandwidth control in a perovskite-type3d1-correlated metalCa1âˆ’xSrxVO3.II.â€ƒOptical spectroscopy. Physical Review B, 1998, 58, 4384-4393.	1.1	74
30	Nonequilibrium electronic transport in a one-dimensional Mott insulator. Physical Review B, 2010, 82, .	1.1	74
31	Compressibility Divergence and the Finite Temperature Mott Transition. Physical Review Letters, 2002, 89, 046401.	2.9	71
32	Coherent and incoherent<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>d</mml:mi></mml:math>band dispersions in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>SrVO</mml:mtext></mml:mrow><mml:mn>3</mml:mn></mml:m Physical Review B, 2009, 80, .	1.1	71
33	A new route to the Mott-Hubbard metal-insulator transition: Strong correlations effects in Pr0.7Ca0.3MnO3. Scientific Reports, 2013, 3, .	1.6	69
34	Orientational Tuning of the Fermi Sea of Confined Electrons at the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>SrTiO</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></ and (111) Surfaces. Physical Review Applied, 2014, 1, .	1.5	69
35	Resolving the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></m controversy: Mott mechanism dominates the insulator-to-metal transition. Physical Review B, 2017, 95, .	1.1	65
36	Fluctuations in a Quantum Random Heisenberg Paramagnet. Physical Review Letters, 1998, 80, 389-392.	2.9	64

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37	Taming the Mott Transition for a Novel Mott Transistor. Advanced Functional Materials, 2008, 18, 2289-2292.	7.8	63
38	Bad-Metal Behavior Reveals Mott Quantum Criticality in Doped Hubbard Models. Physical Review Letters, 2015, 114, 246402.	2.9	59
39	Magnetism, Spin Texture, and In-Gap States: Atomic Specialization at the Surface of Oxygen-Deficient<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>SrTiO</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review Letters, 2016, 116, 157203.	2.9	55
40	Two-dimensional electron gas with six-fold symmetry at the (111) surface of KTaO3. Scientific Reports, 2014, 4, 3586.	1.6	53
41	First-Order Insulator-to-Metal Mott Transition in the Paramagnetic 3D System<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>GaTa</mml:mi></mml:mrow><mml:mrow><mml:mn>4</mml:mn> Physical Review Letters, 2014, 113, 086404.	2.9	52
42	Spatiotemporal characterization of the field-induced insulator-to-metal transition. Science, 2021, 373, 907-911.	6.0	52
43	Engineering two-dimensional electron gases at the (001) and (101) surfaces of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">TiO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>anatase using light. Physical Review B, 2015, 92, .	1.1	51
44	Collective excitations, photoemission spectra, and optical gaps in strongly correlated Fermi systems. Physical Review Letters, 1992, 69, 2009-2012.	2.9	48
45	THE METALâ€“INSULATOR TRANSITION IN THE HUBBARD MODEL AT ZERO TEMPERATURE II. Modern Physics Letters B, 1994, 08, 535-543.	1.0	47
46	Low Frequency Spectroscopy of the Correlated Metallic SystemCaxSr1âˆ’xVO3. Physical Review Letters, 1996, 76, 4781-4784.	2.9	46
47	Hubbard band versus oxygen vacancy states in the correlated electron metal <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>SrVO</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math> Physical Review B, 2016, 94, .	1.1	46
48	Nonthermal and purely electronic resistive switching in a Mott memory. Physical Review B, 2014, 90, .	1.1	44
49	Zero-temperature magnetism in the periodic Anderson model in the limit of large dimensions. Physical Review B, 1995, 52, 7369-7377.	1.1	43
50	Non-fermi-liquid behavior in a disordered Kondo-alloy model. Physical Review B, 1999, 60, 4702-4710.	1.1	39
51	Dynamics of the Infinite-Range Ising Spin-Glass Model in a Transverse Field. Physical Review Letters, 1998, 81, 2550-2553.	2.9	38
52	Quantum Monte Carlo method for models of molecular nanodevices. Physical Review B, 2005, 72, .	1.1	36
53	Two resistive switching regimes in thin film manganite memory devices on silicon. Applied Physics Letters, 2013, 103, .	1.5	35
54	Tuning the resistive switching properties of TiO2âˆ’x films. Applied Physics Letters, 2015, 106, .	1.5	35

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55	Hysteresis switching loops in Ag-manganite memristive interfaces. Journal of Applied Physics, 2010, 107, 093719.	1.1	33
56	Memristive and neuromorphic behavior in a LixCoO2 nanobattery. Scientific Reports, 2015, 5, 7761.	1.6	33
57	How a dc Electric Field Drives Mott Insulators Out of Equilibrium. Physical Review Letters, 2018, 121, 016601.	2.9	33
58	An ultra-compact leaky-integrate-and-fire model for building spiking neural networks. Scientific Reports, 2019, 9, 11123.	1.6	31
59	Manganite-based memristive heterojunction with tunable non-linear Iâ€“V characteristics. Nanoscale, 2015, 7, 6444-6450.	2.8	29
60	Dynamical Response of Quantum Spin-Glass Models atT=0. Physical Review Letters, 2001, 86, 5172-5175.	2.9	28
61	Non-volatile resistive switching in the dielectric superconductor YBa₂Cu₃O_{7â^'Î´}. Journal of Physics Condensed Matter, 2009, 21, 045702.	0.7	27
62	Resistive switching. Scholarpedia Journal, 2011, 6, 11414.	0.3	26
63	Metal-Insulator Transitions in the Periodic Anderson Model. Physical Review Letters, 2007, 99, 196403.	2.9	24
64	Multiple crossovers and coherent states in a Mott-Peierls insulator. Physical Review B, 2018, 97, .	1.1	24
65	Infinite-range quantum random Heisenberg magnet. Physical Review B, 2002, 65, .	1.1	23
66	Understanding electroforming in bipolar resistive switching oxides. Applied Physics Letters, 2011, 98, 042901.	1.5	23
67	Shock Waves and Commutation Speed of Memristors. Physical Review X, 2016, 6, .	2.8	22
68	Quantum and Thermal Fluctuations in the SU(N) Heisenberg Spin-Glass Model near the Quantum Critical Point. Physical Review Letters, 2003, 90, 217202.	2.9	21
69	A mechanism for unipolar resistance switching in oxide nonvolatile memory devices. Applied Physics Letters, 2007, 91, 252101.	1.5	20
70	Direct Evidence of Lithium Ion Migration in Resistive Switching of Lithium Cobalt Oxide Nanobatteries. Small, 2018, 14, e1801038.	5.2	20
71	Magnetic field frustration of the metal-insulator transition in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi mathvariant="normal">V</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2020, 101, .	1.1	20
72	Mott transition in the Hubbard model away from particle-hole symmetry. Physical Review B, 2007, 75, .	1.1	19

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73	Dynamical Mean Field Theory of an Effective Three-Band Model forNaxCoO2. Physical Review Letters, 2009, 102, 066402.	2.9	18
74	Control of resistive switching in AM₄Q₈narrow gap Mott insulators: A first step towards neuromorphic applications. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 239-244.	0.8	18
75	Ferroelectric Tunnel Junction for Dense Cross-Point Arrays. ACS Applied Materials & Interfaces, 2015, 7, 22348-22354.	4.0	18
76	Nonvolatile Multilevel Resistive Switching Memory Cell: A Transition Metal Oxide-Based Circuit. IEEE Transactions on Circuits and Systems II: Express Briefs, 2014, 61, 21-25.	2.2	17
77	Optimization of resistive switching performance of metal-manganite oxide interfaces by a multipulse protocol. Journal of Applied Physics, 2012, 111, 084512.	1.1	16
78	Enhanced and continuous electrostatic carrier doping on the SrTiO3 surface. Scientific Reports, 2013, 3, .	1.6	16
79	Asymmetric pulsing for reliable operation of titanium/manganite memristors. Applied Physics Letters, 2011, 98, 123502.	1.5	15
80	Tailoring conductive filaments by electroforming polarity in memristive based TiO2 junctions. Applied Physics Letters, 2014, 104, .	1.5	15
81	Operando characterization of conductive filaments during resistive switching in Mott VO ₂. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	15
82	Electronic state of a doped Mott-Hubbard insulator at finite temperatures studied using the dynamical mean-field theory. Physical Review B, 2006, 73, .	1.1	14
83	Phase diagram of the asymmetric Hubbard model and an entropic chromatographic method for cooling cold fermions in optical lattices. Physical Review B, 2012, 86, .	1.1	14
84	Electric field induced avalanche breakdown and non-volatile resistive switching in the Mott Insulators AM4Q8. European Physical Journal: Special Topics, 2013, 222, 1046-1056.	1.2	14
85	Relaxation of a Spiking Mott Artificial Neuron. Physical Review Applied, 2018, 10, .	1.5	14
86	Dynamics of the electrically induced insulator-to-metal transition in rare-earth nickelates. Physical Review B, 2021, 104, .	1.1	14
87	Non-Fermi-Liquid Behavior in the Periodic Anderson Model. Physical Review Letters, 2008, 101, 146403.	2.9	13
88	Orbital-selective crossover and Mott transitions in an asymmetric Hubbard model of cold atoms in optical lattices. Physical Review B, 2011, 84, .	1.1	13
89	Anomalous time relaxation of the nonvolatile resistive state in bipolar resistive-switching oxide-based memories. Physical Review B, 2012, 86, .	1.1	13
90	Direct Observation of the Electrically Triggered Insulator-Metal Transition in V3O5 Far below the Transition Temperature. Physical Review X, 2022, 12, .	2.8	13

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91	Melting transition of an Ising glass driven by a magnetic field. Physical Review B, 2004, 69, .	1.1	12
92	Transverse barrier formation by electrical triggering of a metal-to-insulator transition. Nature Communications, 2021, 12, 5499.	5.8	12
93	Disorder effects in the quantum kagome antiferromagnet<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>ZnCu</mml:mtext></mml:mrow><mml:mn>3</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>(OH)₆Cl₂. Physical Review B, 2008, 78, .	1.1	11
94	Electronic Subband Reconfiguration in a<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msup><mml:mi>d</mml:mi><mml:mn>0</mml:mn></mml:msup></mml:math>-Perovskite Induced by Strain-Driven Structural Transformations. Physical Review Letters, 2012, 109, 226601.	2.9	11
95	Resistive switching phenomena in TiOx nanoparticle layers for memory applications. Applied Physics Letters, 2014, 105, 143506.	1.5	11
96	First demonstration of â€œLeaky Integrate and Fireâ€•artificial neuron behavior on (V0.95Cr0.05)2O3 thin film. MRS Communications, 2018, 8, 835-841.	0.8	11
97	Exponential Escape Rate of Filamentary Incubation in Mott Spiking Neurons. Physical Review Applied, 2022, 17, .	1.5	11
98	Resistive asymmetry due to spatial confinement in first-order phase transitions. Physical Review B, 2018, 98, .	1.1	10
99	A model for non-volatile electronic memory devices with strongly correlated materials. Thin Solid Films, 2005, 486, 24-27.	0.8	9
100	Asymmetry between the electron- and hole-doped Mott transition in the periodic Anderson model. Physical Review B, 2009, 80, .	1.1	9
101	Path to poor coherence in the periodic Anderson model from Mott physics and hybridization. Physical Review B, 2012, 85, .	1.1	9
102	Localised Wannier orbital basis for the Mott insulators GaV ₄ S ₈ and GaTa ₄ Se ₈. Europhysics Letters, 2012, 100, 57004.	0.7	9
103	One-transistor one-resistor (1T1R) cell for large-area electronics. Applied Physics Letters, 2018, 113, .	1.5	9
104	Quantum interference effects of out-of-plane confinement on two-dimensional electron systems in oxides. Physical Review B, 2020, 102, .	1.1	9
105	Biologically Relevant Dynamical Behaviors Realized in an Ultra-Compact Neuron Model. Frontiers in Neuroscience, 2020, 14, 421.	1.4	8
106	A hybrid optoelectronic Mott insulator. Applied Physics Letters, 2021, 118, .	1.5	8
107	Metal-insulator transition in correlated systems: A new numerical approach. Physica B: Condensed Matter, 2007, 398, 407-411.	1.3	7
108	The metalâ€“insulator transition in the paramagnetic Hubbard Model. Physica B: Condensed Matter, 2008, 403, 1465-1467.	1.3	7

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109	Weak-coupling study of decoherence of a qubit in disordered magnetic environments. Physical Review B, 2009, 80, .	1.1	7
110	Electrode-Geometry Control of the Formation of a Conductive Bridge in Oxide Resistance Switching Devices. Applied Physics Express, 2009, 2, 081401.	1.1	7
111	Odd-frequency superconductivity in dilute magnetic superconductors. Physical Review Research, 2020, 2, .	1.3	7
112	Impurity effects in the quantum kagome system<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi mathvariant="normal">Zn</mml:mi><mml:msub><mml:mi mathvariant="normal">Cu</mml:mi><mml:mn>3</mml:mn></mml:msub><mml:msub><mml:mrow><mml:mo>(</mml:mo><mml:mi) Tj	1.1	6
113	Imaging the itinerant-to-localized transmutation of electrons across the metal-to-insulator transition in V ₂ O ₃. Science Advances, 2021, 7, eabj1164.	4.7	6
114	THE ANOMALOUS METALLIC FERROMAGNETIC STATE OF Sr DOPED MANGANITES. Modern Physics Letters B, 2001, 15, 1031-1040.	1.0	5
115	Slave boson study of the doped Hubbard model. Physical Review B, 2007, 76, .	1.1	5
116	Impurity scattering in a strongly correlated host. Europhysics Letters, 2008, 81, 67002.	0.7	5
117	A Functional Spiking Neural Network of Ultra Compact Neurons. Frontiers in Neuroscience, 2021, 15, 635098.	1.4	5
118	A spiking neuron implemented in VLSI. Journal of Physics Communications, 2022, 6, 021001.	0.5	4
119	Disordered Mottâ€“Hubbard Physics in Nanoparticle Solids: Transitions Driven by Disorder, Interactions, and Their Interplay. Nano Letters, 2020, 20, 8569-8575.	4.5	3
120	Implementation of a Minimal Recurrent Spiking Neural Network in a Solid-State Device. Physical Review Applied, 2021, 16, .	1.5	3
121	Doping-driven resistive collapse of the Mott insulator in a minimal model for <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></m Physical Review B, 2022, 105, .	1.1	3
122	Degenerate Hubbard model in infinite dimensions. Physica B: Condensed Matter, 1997, 237-238, 78-80.	1.3	1
123	Anomalous dynamical spin susceptibility in theSU(N)Heisenberg spin-glass model andSrCr9xGa12â^'9xO19. Physical Review B, 2004, 69, .	1.1	1
124	Publisher's Note: Anomalous time relaxation of the nonvolatile resistive state in bipolar resistive-switching oxide-based memories [Phys. Rev. B86, 104426 (2012)]. Physical Review B, 2012, 86, .	1.1	1
125	Shock waves in binary oxides memristors. , 2017, , .		1
126	Specific heat in theSU(N) Heisenberg spin-glass model. Journal of Physics Condensed Matter, 2004, 16, S723-S727.	0.7	0

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127	Quantum magnets with anisotropic infinite range random interactions. Biophysical Chemistry, 2005, 115, 135-138.	1.5	0
128	Mott-memories Based on the Narrow Gap Mott Insulators AM4Q8 (A=Ga, Ge ; M = V, Nb, Ta ; Q = S, Se). Materials Research Society Symposia Proceedings, 2013, 1562, 1.	0.1	0
129	In-situ electron microscopy study of non-volatile resistive switching in Mott insulator VO2. Microscopy and Microanalysis, 2021, 27, 2162-2164.	0.2	0