Umberto Lucia

List of Publications by Year
in descending order

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111	2,369	218381	276539
papers	citations	26 h-index	41 g-index

123	123	123	1238
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Overview on fuel cells. Renewable and Sustainable Energy Reviews, 2014, 30, 164-169.	8.2	237
2	Ground-source pump system for heating and cooling: Review and thermodynamic approach. Renewable and Sustainable Energy Reviews, 2017, 70, 867-874.	8.2	118
3	Stationary open systems: A brief review on contemporary theories on irreversibility. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 1051-1062.	1.2	95
4	Maximum or minimum entropy generation for open systems?. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 3392-3398.	1.2	72
5	Probability, ergodicity, irreversibility and dynamical systems. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2008, 464, 1089-1104.	1.0	55
6	Bioengineering thermodynamics of biological cells. Theoretical Biology and Medical Modelling, 2015, 12, 29.	2.1	49
7	Entropy and exergy in irreversible renewable energy systems. Renewable and Sustainable Energy Reviews, 2013, 20, 559-564.	8.2	47
8	Exergy inefficiency: An indicator for sustainable development analysis. Energy Reports, 2019, 5, 62-69.	2.5	47
9	The Î°-statistics approach to epidemiology. Scientific Reports, 2020, 10, 19949.	1.6	44
10	The Gouy-Stodola Theorem in Bioenergetic Analysis of Living Systems (Irreversibility in Bioenergetics) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	1.6	40
11	Irreversible entropy variation and the problem of the trend to equilibrium. Physica A: Statistical Mechanics and Its Applications, 2007, 376, 289-292.	1.2	38
12	Irreversibility, entropy and incomplete information. Physica A: Statistical Mechanics and Its Applications, 2009, 388, 4025-4033.	1.2	38
13	Irreversibility in biophysical and biochemical engineering. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 5997-6007.	1.2	38
14	Thermodynamic paths and stochastic order in open systems. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 3912-3919.	1.2	38
15	Thermodynamics and cancer stationary states. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 3648-3653.	1.2	37
16	Entropy generation approach to cell systems. Physica A: Statistical Mechanics and Its Applications, 2014, 406, 1-11.	1.2	36
17	Carnot efficiency: Why?. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 3513-3517.	1.2	34
18	Maximum entropy generation and -exponential model. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 4558-4563.	1.2	33

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19	Entropy-Based Pandemics Forecasting. Frontiers in Physics, 2020, 8, .	1.0	31
20	Entropy generation: From outside to inside!. Chemical Physics Letters, 2013, 583, 209-212.	1.2	30
21	Entropy generation and cell growth with comments for a thermodynamic anticancer approach. Physica A: Statistical Mechanics and Its Applications, 2014, 406, 107-118.	1.2	30
22	A thermo-physical analysis of the proton pump vacuolar-ATPase: the constructal approach. Scientific Reports, 2014, 4, 6763.	1.6	29
23	Constructal thermodynamics combined with infrared experiments to evaluate temperature differences in cells. Scientific Reports, 2015, 5, 11587.	1.6	29
24	Statistical approach of the irreversible entropy variation. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 3454-3460.	1.2	28
25	From Lotka to the entropy generation approach. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 3634-3639.	1.2	28
26	Second law efficiency for living cells. Frontiers in Bioscience - Scholar, 2017, 9, 270-275.	0.8	28
27	Global analysis of dissipations due to irreversibility. International Journal of Thermal Sciences, 1997, 36, 605-609.	0.2	27
28	A thermodynamic approach to the â€˜mitosis/apoptosisâ€™ ratio in cancer. Physica A: Statistical Mechanics and Its Applications, 2015, 436, 246-255.	1.2	26
29	A Link between Nano- and Classical Thermodynamics: Dissipation Analysis (The Entropy Generation) Tj ETQq1 1 0.784314 rgBT /Overl	1.1	26
30	The extremely low frequency electromagnetic stimulation selective for cancer cells elicits growth arrest through a metabolic shift. Biochimica Et Biophysica Acta - Molecular Cell Research, 2019, 1866, 1389-1397.	1.9	26
31	Time, Irreversibility and Entropy Production in Nonequilibrium Systems. Entropy, 2020, 22, 887.	1.1	26
32	Thermodynamic optimisation of the biofuel production based on mutualism. Energy Reports, 2020, 6, 1561-1571.	2.5	26
33	Thermodynamic approach to nano-properties of cell membrane. Physica A: Statistical Mechanics and Its Applications, 2014, 407, 185-191.	1.2	25
34	Unavailability percentage as energy planning and economic choice parameter. Renewable and Sustainable Energy Reviews, 2017, 75, 197-204.	8.2	25
35	Econophysics and bio-chemical engineering thermodynamics: The exergetic analysis of a municipality. Physica A: Statistical Mechanics and Its Applications, 2016, 462, 421-430.	1.2	24
36	Constructal law analysis of Clâ˜’ transport in eyes aqueous humor. Scientific Reports, 2017, 7, 6856.	1.6	24

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37	The Gouy-Stodola Theoremâ€"From Irreversibility to Sustainabilityâ€"The Thermodynamic Human Development Index. Sustainability, 2021, 13, 3995.	1.6	24
38	Bio-engineering thermodynamics: an engineering science for thermodynamics of biosystems. International Journal of Thermodynamics, 2015, 18, 254.	0.4	24
39	An engineering thermodynamic approach to select the electromagnetic wave effective on cell growth. Journal of Theoretical Biology, 2017, 429, 181-189.	0.8	23
40	Cyanobacteria and Microalgae: Thermoeconomic Considerations in Biofuel Production. Energies, 2018, 11, 156.	1.6	22
41	Transport processes and irreversible thermodynamics analysis in tumoral systems. Physica A: Statistical Mechanics and Its Applications, 2014, 410, 380-390.	1.2	21
42	Quanta and entropy generation. Physica A: Statistical Mechanics and Its Applications, 2015, 419, 115-121.	1.2	21
43	Macroscopic irreversibility and microscopic paradox: A Constructal law analysis of atoms as open systems. Scientific Reports, 2016, 6, 35796.	1.6	21
44	Constructal approach to bio-engineering: the ocular anterior chamber temperature. Scientific Reports, 2016, 6, 31099.	1.6	21
45	A thermoeconomic indicator for the sustainable development with social considerations. Environment, Development and Sustainability, 2022, 24, 2022-2036.	2.7	21
46	Molecular machine as chemical-thermodynamic devices. Chemical Physics Letters, 2013, 556, 242-244.	1.2	20
47	Exergy flows as bases of constructal law. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 6284-6287.	1.2	19
48	Constructal approach to cell membranes transport: Amending the â€˜Norton-Simonâ€™ hypothesis for cancer treatment. Scientific Reports, 2016, 6, 19451.	1.6	18
49	Thermal Resonance and Cell Behavior. Entropy, 2020, 22, 774.	1.1	18
50	Thermomagnetic resonance affects cancer growth and motility. Royal Society Open Science, 2020, 7, 200299.	1.1	18
51	Adsorber efficiency in adsorbtion refrigeration. Renewable and Sustainable Energy Reviews, 2013, 20, 570-575.	8.2	17
52	Entropy generation: Minimum inside and maximum outside. Physica A: Statistical Mechanics and Its Applications, 2014, 396, 61-65.	1.2	17
53	How Life Worksâ€"A Continuous Seebeck-Peltier Transition in Cell Membrane?. Entropy, 2020, 22, 960.	1.1	17
54	Some considerations on molecular machines and Loschmidt paradox. Chemical Physics Letters, 2015, 623, 98-100.	1.2	16

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55	Transport processes in biological systems: Tumoral cells and human brain. Physica A: Statistical Mechanics and Its Applications, 2014, 393, 327-336.	1.2	15
56	Entropy generation and the Fokkerâ€“Planck equation. Physica A: Statistical Mechanics and Its Applications, 2014, 393, 256-260.	1.2	15
57	Entropy production and generation: Clarity from nanosystems considerations. Chemical Physics Letters, 2015, 629, 87-90.	1.2	15
58	Considerations on non equilibrium thermodynamics of interactions. Physica A: Statistical Mechanics and Its Applications, 2016, 447, 314-319.	1.2	15
59	Irreversible thermodynamic analysis and application for molecular heat engines. Chemical Physics, 2017, 494, 47-55.	0.9	15
60	Time: a Constructal viewpoint & its consequences. Scientific Reports, 2019, 9, 10454.	1.6	15
61	Irreversible Thermodynamics and Bioeconomy: Toward a Human-Oriented Sustainability. Frontiers in Physics, 2021, 9, .	1.0	15
62	Maximum principle and open systems including two-phase flows. International Journal of Thermal Sciences, 1998, 37, 813-817.	0.2	14
63	Irreversible human brain. Medical Hypotheses, 2013, 80, 112-114.	0.8	14
64	Thermodynamic considerations on the role of heat and mass transfer in biochemical causes of carcinogenesis. Physica A: Statistical Mechanics and Its Applications, 2018, 490, 1164-1170.	1.2	14
65	Thermoeconomic analysis of Earth system in relation to sustainability: a thermodynamic analysis of weather changes due to anthropic activities. Journal of Thermal Analysis and Calorimetry, 2021, 145, 701-707.	2.0	14
66	Different chemical reaction times between normal and solid cancer cells. Medical Hypotheses, 2013, 81, 58-61.	0.8	13
67	Second law analysis of the ideal Ericsson magnetic refrigeration. Renewable and Sustainable Energy Reviews, 2011, 15, 2872-2875.	8.2	12
68	Entropy versus entransy. Journal of Non-Equilibrium Thermodynamics, 2013, .	2.4	12
69	Time & clocks: A thermodynamic approach. Results in Physics, 2020, 16, 102977.	2.0	12
70	Multiscale Mesoscopic Entropy of Driven Macroscopic Systems. Entropy, 2013, 15, 5053-5064.	1.1	11
71	The Second Law Today: Using Maximum-Minimum Entropy Generation. Entropy, 2015, 17, 7786-7797.	1.1	10
72	Second law considerations on the third law: From Boltzmann and Loschmidt paradox to non equilibrium temperature. Physica A: Statistical Mechanics and Its Applications, 2016, 444, 121-128.	1.2	10

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73	Some thermodynamic considerations on low frequency electromagnetic waves effects on cancer invasion and metastasis. Physica A: Statistical Mechanics and Its Applications, 2017, 467, 289-295.	1.2	10
74	Unreal perpetual motion machine, Rydberg constant and Carnot non-unitary efficiency as a consequence of the atomic irreversibility. Physica A: Statistical Mechanics and Its Applications, 2018, 492, 962-968.	1.2	10
75	Biofuels Analysis Based on the THDI Indicator of Sustainability. Frontiers in Energy Research, 2021, 9, .	1.2	10
76	Investigating the impact of electromagnetic fields on human cells: A thermodynamic perspective. Physica A: Statistical Mechanics and Its Applications, 2016, 443, 42-48.	1.2	9
77	The importance of ion fluxes for cancer proliferation and metastasis: A thermodynamic analysis. Journal of Theoretical Biology, 2018, 445, 1-8.	0.8	9
78	Economic and Human Features for Energy and Environmental Indicators: A Tool to Assess Countriesâ€™ Progress towards Sustainability. Sustainability, 2020, 12, 9716.	1.6	9
79	Thermal Physics and Glaucoma: From Thermodynamic to Biophysical Considerations to Designing Future Therapies. Applied Sciences (Switzerland), 2020, 10, 7071.	1.3	8
80	Nonequilibrium Temperature: An Approach from Irreversibility. Materials, 2021, 14, 2004.	1.3	8
81	Non-Equilibrium Thermodynamic Approach to Ca2+-Fluxes in Cancer. Applied Sciences (Switzerland), 2020, 10, 6737.	1.3	8
82	Biomethanation of Rice Straw: A Sustainable Perspective for the Valorisation of a Field Residue in the Energy Sector. Sustainability, 2022, 14, 5679.	1.6	8
83	General approach to obtain the magnetic refrigeretion ideal coefficient of performance. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 3477-3479.	1.2	7
84	Electromagnetic waves and living cells: A kinetic thermodynamic approach. Physica A: Statistical Mechanics and Its Applications, 2016, 461, 577-585.	1.2	7
85	GeV plasmons and spalling neutrons from crushing of iron-rich natural rocks. Chemical Physics Letters, 2015, 640, 112-114.	1.2	6
86	Theoretical biophysical approach to cross-linking effects on eyes pressure. Physica A: Statistical Mechanics and Its Applications, 2019, 534, 122163.	1.2	6
87	Biofuels from Micro-Organisms: Thermodynamic Considerations on the Role of Electrochemical Potential on Micro-Organisms Growth. Applied Sciences (Switzerland), 2021, 11, 2591.	1.3	6
88	Fokker-Planck Equation and Thermodynamic System Analysis. Entropy, 2015, 17, 763-771.	1.1	5
89	Physical model for the engineering analysis of the thermoelasticlty of solid bodies. Chinese Journal of Mechanical Engineering (English Edition), 2000, 13, 165.	1.9	5
90	Nuclear temperature: a global thermodynamic approach. International Journal of Nuclear Energy Science and Technology, 2011, 6, 76.	0.2	4

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91	The Potential of Visible and Far-Red to Near-Infrared Light in Glaucoma Neuroprotection. Applied Sciences (Switzerland), 2021, 11, 5872.	1.3	4
92	Thermal resonance in living cells to control their heat exchange: Possible applications in cancer treatment. International Communications in Heat and Mass Transfer, 2022, 131, 105842.	2.9	4
93	Sustainable Development and Workers Ability: Considerations on the Education Index in the Human Development Index. Sustainability, 2022, 14, 8372.	1.6	4
94	A pn-pair mass evaluation in nuclear photofission. International Journal of Nuclear Energy Science and Technology, 2009, 4, 196.	0.2	3
95	Thermodynamic considerations on Ca2+-induced biochemical reactions in living cells. Chemical Physics Letters, 2016, 645, 84-87.	1.2	3
96	The wasted primary resource value: an indicator for the thermodynamics of sustainability for municipalities policy. International Journal of Thermodynamics, 2017, 20, 166-172.	0.4	3
97	Hydrodynamic cavitation: from theory towards a new experimental approach. Open Physics, 2009, 7, .	0.8	2
98	Cancer Risk in Patients With Cystic Fibrosis. Gastroenterology, 2018, 154, 2282-2283.	0.6	2
99	A thermodynamic approach to the microclimate environment of museums. Physica A: Statistical Mechanics and Its Applications, 2019, 517, 66-72.	1.2	2
100	Seebeckâ€“Peltier Transition Approach to Oncogenesis. Applied Sciences (Switzerland), 2020, 10, 7166.	1.3	2
101	Irreversibility in river flow. International Journal of Heat and Technology, 2016, 34, S95-S100.	0.3	2
102	Introduction to Constructal Law Analysis for a Simplified Hourly Energy Balance Model of Residential Buildings at District Scale. Tecnica Italiana, 2019, 63, 13-20.	0.2	2
103	Sustainability analyses of photovoltaic electrolysis and magnetic heat engine coupled novel system used for hydrogen production and electricity generation. Sustainable Energy Technologies and Assessments, 2022, 52, 102094.	1.7	2
104	Some considerations on the photofission excitation function. International Journal of Nuclear Energy Science and Technology, 2011, 6, 146.	0.2	1
105	Celebration of Professor Adrian Bejan on his 70th birthday. International Journal of Heat and Mass Transfer, 2018, 126, 1377-1378.	2.5	1
106	Alzheimerâ€™s Disease: A Thermodynamic Perspective. Applied Sciences (Switzerland), 2020, 10, 7562.	1.3	1
107	Entropy estimation within in vitro neural-astrocyte networks as a measure of development instability. Physical Review E, 2021, 103, 042412.	0.8	1
108	Thermal Physics and Glaucoma II: Preliminary Evidences for a Thermophysical Design of a Possible Visible-Light-Photons Therapy. Applied Sciences (Switzerland), 2021, 11, 6301.	1.3	1

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109	Thermoeconomic Analysis of Alessandria District: A Case Study for an Engineering Thermodynamic Indicator for Sustainability. Tecnica Italiana, 2021, 65, 151-156.	0.2	1
110	Why does thermomagnetic resonance affect cancer growth? A non-equilibrium thermophysical approach. Journal of Thermal Analysis and Calorimetry, 2022, 147, 5525-5531.	2.0	1
111	Irreversibility in river flow. International Journal of Heat and Technology, 2016, 34, S95-S100.	0.3	0