

Alejandro Medina

List of Publications by Year in descending order

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89
papers

1,716
citations

279487

23
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329751

37
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92
all docs

92
docs citations

92
times ranked

724
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 1 | Unified optimization criterion for energy converters. <i>Physical Review E</i> , 2001, 63, 037102. | 0.8 | 104 |
| 2 | Optimum performance of a regenerative Brayton thermal cycle. <i>Journal of Applied Physics</i> , 1997, 82, 2735-2741. | 1.1 | 86 |
| 3 | Feynman's ratchet optimization: maximum power and maximum efficiency regimes. <i>Journal Physics D: Applied Physics</i> , 2001, 34, 1000-1006. | 1.3 | 79 |
| 4 | Thermodynamic modeling of a hybrid solar gas-turbine power plant. <i>Energy Conversion and Management</i> , 2015, 93, 435-447. | 4.4 | 74 |
| 5 | New Performance Bounds for a Finite-Time Carnot Refrigerator. <i>Physical Review Letters</i> , 1997, 78, 3241-3244. | 2.9 | 70 |
| 6 | High temperature central tower plants for concentrated solar power: 2021 overview. <i>Renewable and Sustainable Energy Reviews</i> , 2022, 155, 111828. | 8.2 | 69 |
| 7 | Regenerative gas turbines at maximum power density conditions. <i>Journal Physics D: Applied Physics</i> , 1996, 29, 2802-2805. | 1.3 | 54 |
| 8 | Optimization of heat engines including the saving of natural resources and the reduction of thermal pollution. <i>Journal Physics D: Applied Physics</i> , 2000, 33, 355-359. | 1.3 | 51 |
| 9 | Seasonal thermodynamic prediction of the performance of a hybrid solar gas-turbine power plant. <i>Energy Conversion and Management</i> , 2016, 115, 89-102. | 4.4 | 48 |
| 10 | On cycle-to-cycle heat release variations in a simulated spark ignition heat engine. <i>Applied Energy</i> , 2011, 88, 1557-1567. | 5.1 | 47 |
| 11 | Theoretical and simulated models for an irreversible Otto cycle. <i>Journal of Applied Physics</i> , 2008, 104, 094911. | 1.1 | 43 |
| 12 | Multi-objective optimization of a multi-step solar-driven Brayton plant. <i>Energy Conversion and Management</i> , 2015, 99, 346-358. | 4.4 | 40 |
| 13 | Thermodynamic model and optimization of a multi-step irreversible Brayton cycle. <i>Energy Conversion and Management</i> , 2010, 51, 2134-2143. | 4.4 | 38 |
| 14 | Continuous power output criteria and optimum operation strategies of an upgraded thermally regenerative electrochemical cycles system. <i>Energy Conversion and Management</i> , 2019, 180, 654-664. | 4.4 | 37 |
| 15 | Recuperative solar-driven multi-step gas turbine power plants. <i>Energy Conversion and Management</i> , 2013, 67, 171-178. | 4.4 | 35 |
| 16 | Time, entropy generation, and optimization in low-dissipation heat devices. <i>New Journal of Physics</i> , 2015, 17, 075011. | 1.2 | 35 |
| 17 | Optimizing the operation of a spark ignition engine: Simulation and theoretical tools. <i>Journal of Applied Physics</i> , 2009, 105, 094904. | 1.1 | 32 |
| 18 | Simulation of cycle-to-cycle variations on spark ignition engines fueled with gasoline-hydrogen blends. <i>International Journal of Hydrogen Energy</i> , 2016, 41, 9087-9099. | 3.8 | 32 |

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|----|--|-----|-----------|
| 19 | Power and efficiency in a regenerative gas turbine. <i>Journal Physics D: Applied Physics</i> , 1995, 28, 2020-2023. | 1.3 | 28 |
| 20 | Irreversible refrigerators under per-unit-time coefficient of performance optimization. <i>Applied Physics Letters</i> , 1997, 71, 1130-1132. | 1.5 | 28 |
| 21 | Monofractal and multifractal analysis of simulated heat release fluctuations in a spark ignition heat engine. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2010, 389, 5662-5670. | 1.2 | 27 |
| 22 | Thermodynamic simulation of a multi-step externally fired gas turbine powered by biomass. <i>Energy Conversion and Management</i> , 2017, 140, 182-191. | 4.4 | 26 |
| 23 | Experimental study on detailed emissions speciation of an HCCI engine equipped with a three-way catalytic converter. <i>Energy</i> , 2016, 117, 388-397. | 4.5 | 24 |
| 24 | Modeling hybrid solar gas-turbine power plants: Thermodynamic projection of annual performance and emissions. <i>Energy Conversion and Management</i> , 2017, 134, 314-326. | 4.4 | 23 |
| 25 | Optimizing the geometrical parameters of a spark ignition engine: Simulation and theoretical tools. <i>Applied Thermal Engineering</i> , 2011, 31, 803-810. | 3.0 | 22 |
| 26 | On an irreversible air standard Otto-cycle model. <i>European Journal of Physics</i> , 1995, 16, 73-75. | 0.3 | 21 |
| 27 | Vibration-rotation spectra of HCl in rare-gas liquid mixtures: Molecular dynamics simulations of Q-branch absorption. <i>Journal of Chemical Physics</i> , 2002, 116, 5058. | 1.2 | 21 |
| 28 | Thermodynamic model of a hybrid Brayton thermosolar plant. <i>Renewable Energy</i> , 2018, 128, 473-483. | 4.3 | 21 |
| 29 | Pumped heat energy storage with liquid media: Thermodynamic assessment by a Brayton-like model. <i>Energy Conversion and Management</i> , 2020, 226, 113540. | 4.4 | 21 |
| 30 | Energetic Self-Optimization Induced by Stability in Low-Dissipation Heat Engines. <i>Physical Review Letters</i> , 2020, 124, 050603. | 2.9 | 21 |
| 31 | Power and efficiency in a regenerative gas-turbine cycle with multiple reheating and intercooling stages. <i>Journal Physics D: Applied Physics</i> , 1996, 29, 1462-1468. | 1.3 | 20 |
| 32 | Carnot-Like Heat Engines Versus Low-Dissipation Models. <i>Entropy</i> , 2017, 19, 182. | 1.1 | 20 |
| 33 | Far-infrared permanent and induced dipole absorption of diatomic molecules in rare-gas fluids. II. Application to the CO-Ar system. <i>Journal of Chemical Physics</i> , 1995, 103, 9175-9186. | 1.2 | 19 |
| 34 | Roads to improve the performance of hybrid thermosolar gas turbine power plants: Working fluids and multi-stage configurations. <i>Energy Conversion and Management</i> , 2018, 165, 578-592. | 4.4 | 18 |
| 35 | Quantitative study of memory and nonadditivity effects of the far-infrared spectrum of HCl in dense Ar. <i>Physical Review A</i> , 1991, 44, 3023-3031. | 1.0 | 17 |
| 36 | Optimization, Stability, and Entropy in Endoreversible Heat Engines. <i>Entropy</i> , 2020, 22, 1323. | 1.1 | 17 |

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|----|---|-----|-----------|
| 37 | Entropy generation and unified optimization of Carnot-like and low-dissipation refrigerators. <i>Physical Review E</i> , 2018, 97, 022139. | 0.8 | 16 |
| 38 | Thermally driven refrigerators: Equivalent low-dissipation three-heat-source model and comparison with experimental and simulated results. <i>Energy Conversion and Management</i> , 2019, 198, 111917. | 4.4 | 16 |
| 39 | Estimation of the quadrupole and hexadecapole moments of N ₂ from the far-infrared spectrum of a N ₂ -Xe gaseous mixture. <i>Journal of Chemical Physics</i> , 1999, 110, 5218-5223. | 1.2 | 14 |
| 40 | Thermo-economic and sensitivity analysis of a central tower hybrid Brayton solar power plant. <i>Applied Thermal Engineering</i> , 2021, 186, 116454. | 3.0 | 14 |
| 41 | An irreversible and optimized four stroke cycle model for automotive engines. <i>European Journal of Physics</i> , 1996, 17, 11-18. | 0.3 | 13 |
| 42 | A Measurement of Listening to Falling Balls. <i>Physics Teacher</i> , 2007, 45, 175-177. | 0.2 | 13 |
| 43 | Maximum overall efficiency for a solar-driven gas turbine power plant. <i>International Journal of Energy Research</i> , 2013, 37, 1580-1591. | 2.2 | 13 |
| 44 | The maximum power efficiency $1-\hat{\eta}_{\infty}$: Research, education, and bibliometric relevance. <i>European Physical Journal: Special Topics</i> , 2015, 224, 809-823. | 1.2 | 13 |
| 45 | Optimization induced by stability and the role of limited control near a steady state. <i>Physical Review E</i> , 2019, 100, 062128. | 0.8 | 13 |
| 46 | The equivalent low-dissipation combined cycle system and optimal analyses of a class of thermally driven heat pumps. <i>Energy Conversion and Management</i> , 2020, 220, 113100. | 4.4 | 13 |
| 47 | Infrared spectral profiles in liquids and atom-diatom interactions. <i>Journal of Chemical Physics</i> , 2004, 121, 6353-6360. | 1.2 | 12 |
| 48 | Irreversible Carnot cycle under per-unit-time efficiency optimization. <i>Applied Physics Letters</i> , 1998, 73, 853-855. | 1.5 | 11 |
| 49 | Effect of ethanol addition on cyclic variability in a simulated spark ignition gasoline engine. <i>Meccanica</i> , 2014, 49, 2285-2297. | 1.2 | 11 |
| 50 | Far-infrared spectra of HCl in dense Ar and time-dependent anisotropic potential autocorrelation functions. A molecular dynamics study. <i>Journal of Chemical Physics</i> , 1994, 100, 252-261. | 1.2 | 10 |
| 51 | Infrared Q-branch absorption and rotationally-hindered species in liquids. <i>Journal of Chemical Physics</i> , 2003, 119, 5176-5184. | 1.2 | 10 |
| 52 | On-design pre-optimization and off-design analysis of hybrid Brayton thermosolar tower power plants for different fluids and plant configurations. <i>Renewable and Sustainable Energy Reviews</i> , 2020, 119, 109590. | 8.2 | 9 |
| 53 | Thermodynamic and Cost Analysis of a Solar Dish Power Plant in Spain Hybridized with a Micro-Gas Turbine. <i>Energies</i> , 2020, 13, 5178. | 1.6 | 9 |
| 54 | Experimental and theoretical study of the far-infrared spectra of HCl dissolved in liquid Ar, Kr, and Xe. <i>Molecular Physics</i> , 1999, 96, 1115-1124. | 0.8 | 8 |

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|----|--|-----|-----------|
| 55 | On entropy research analysis: cross-disciplinary knowledge transfer. <i>Scientometrics</i> , 2018, 117, 123-139. | 1.6 | 8 |
| 56 | Thermodynamic optimization subsumed in stability phenomena. <i>Scientific Reports</i> , 2020, 10, 14305. | 1.6 | 8 |
| 57 | Line-by-line far-infrared spectra of HCl in dense Ar: Asymmetric profiles. <i>Physical Review A</i> , 1992, 45, 5289-5292. | 1.0 | 7 |
| 58 | Dynamical characterization of rotationally hindered species in liquids. <i>Journal of Chemical Physics</i> , 2005, 123, 234509. | 1.2 | 6 |
| 59 | Fluctuations in the Energetic Properties of a Spark-Ignition Engine Model with Variability. <i>Entropy</i> , 2013, 15, 3277-3296. | 1.1 | 6 |
| 60 | Effects of Direct Fuel Injection Strategies on Cycle-by-Cycle Variability in a Gasoline Homogeneous Charge Compression Ignition Engine: Sample Entropy Analysis. <i>Entropy</i> , 2015, 17, 539-559. | 1.1 | 6 |
| 61 | Theoretical far-infrared spectra of CO in Ar gas. <i>Chemical Physics Letters</i> , 1993, 216, 593-598. | 1.2 | 5 |
| 62 | Many-body components in the integrated far-infrared absorption coefficient of diatomic molecules in spherical solvents. <i>Journal of Chemical Physics</i> , 1997, 107, 4844-4851. | 1.2 | 5 |
| 63 | Theoretical analysis of the far-infrared spectra of HCl in liquid Ar along the Ar liquid-vapour coexistence line. <i>Journal of Molecular Liquids</i> , 1995, 63, 251-264. | 2.3 | 4 |
| 64 | On- and off-design thermodynamic analysis of a hybrid polar solar thermal tower power plant. <i>International Journal of Energy Research</i> , 2021, 45, 1789-1805. | 2.2 | 4 |
| 65 | Numerical approach on the effects of gasoline-hydrogen blends on the cyclic variability in spark ignition engines. <i>International Journal of Thermodynamics</i> , 2016, 19, 92. | 0.4 | 4 |
| 66 | Multicriteria optimization of Brayton-like pumped thermal electricity storage with liquid media. <i>Journal of Energy Storage</i> , 2021, 44, 103242. | 3.9 | 4 |
| 67 | Thermodynamic Performance of a Brayton Pumped Heat Energy Storage System: Influence of Internal and External Irreversibilities. <i>Entropy</i> , 2021, 23, 1564. | 1.1 | 4 |
| 68 | Analysis of memory and nonadditivity effects on the far infrared spectra of HCl in rare gas liquids. <i>Journal of Molecular Liquids</i> , 1992, 54, 67-72. | 2.3 | 3 |
| 69 | Study of the contribution from the J = 1 and J = 2 parts of the anisotropic potential to the far-infrared spectra of HCl in Ar, Kr and Xe liquids.. <i>Journal of Molecular Structure</i> , 1993, 294, 99-102. | 1.8 | 3 |
| 70 | Permanent and interaction-induced far-infrared spectra of CO in dense Ar: a molecular dynamics approach. <i>Journal of Molecular Liquids</i> , 1996, 70, 169-183. | 2.3 | 3 |
| 71 | Techno-economic analysis of a solar hybrid combined cycle power plant integrated with a packed bed storage at gas turbine exhaust. <i>AIP Conference Proceedings</i> , 2020, , . | 0.3 | 3 |
| 72 | Far-infrared spectra of HCl in dense Ar: analysis of two time correction functions for the interaction. <i>Journal of Molecular Structure</i> , 1993, 294, 95-98. | 1.8 | 2 |

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|----|--|-----|-----------|
| 73 | Electric multipolar induction in the far-infrared spectra of CO in liquid Ar: Translational/rotational contributions and static cancellation effects. <i>Journal of Chemical Physics</i> , 1998, 108, 9480-9486. | 1.2 | 2 |
| 74 | Vibration-rotation spectra of hydrogen halides in rare-gas liquids: Q-branch absorption. <i>Pure and Applied Chemistry</i> , 2004, 76, 241-246. | 0.9 | 2 |
| 75 | Symbolic Analysis of the Cycle-to-Cycle Variability of a Gasoline-Hydrogen Fueled Spark Engine Model. <i>Energies</i> , 2018, 11, 968. | 1.6 | 2 |
| 76 | Memory and nonadditivity effects on the far-infrared spectra of DCl, HCl and HF in liquid SF ₆ . <i>Chemical Physics Letters</i> , 1993, 202, 364-370. | 1.2 | 1 |
| 77 | Mixing and memory effects on the far-infrared spectra of HF in liquid SF ₆ . <i>Journal of Molecular Structure</i> , 1993, 294, 91-94. | 1.8 | 1 |
| 78 | Velasco, Roco, Medina, and Calvo Hernández Reply. <i>Physical Review Letters</i> , 1998, 81, 5470-5470. | 2.9 | 1 |
| 79 | Thermodynamic simulation of a hybrid thermo-solar externally fired gas turbine power plant fueled with biomass. <i>AIP Conference Proceedings</i> , 2018, , . | 0.3 | 1 |
| 80 | Compartmental Learning versus Joint Learning in Engineering Education. <i>Mathematics</i> , 2021, 9, 662. | 1.1 | 1 |
| 81 | Cycle-to-Cycle Variability. , 2014, , 107-145. | | 1 |
| 82 | Towards a Sustainable Future through Renewable Energies at Secondary School: An Educational Proposal. <i>Sustainability</i> , 2021, 13, 12904. | 1.6 | 1 |
| 83 | Success versus failure: Efficient heat devices in thermodynamics. <i>Physical Review E</i> , 2022, 105, 014115. | 0.8 | 1 |
| 84 | Development and utilization of video clips as didactic resources for an experimental subject. , 2014, , . | | 0 |
| 85 | Towards a more efficient generation of central tower hybrid thermosolar gas turbine power plants. <i>AIP Conference Proceedings</i> , 2019, , . | 0.3 | 0 |
| 86 | Multipole Induced Dipole Contributions to the Far-Infrared Spectra of Diatomic Molecules in Non-Polar Solvents. , 2004, , 361-385. | | 0 |
| 87 | Physical Laws and Model Structure of Simulations. , 2014, , 19-55. | | 0 |
| 88 | Thermodynamic Engine Optimization. , 2014, , 87-106. | | 0 |
| 89 | Validating and Comparing with Experiments and Other Models. , 2014, , 57-86. | | 0 |