

Andrea Cavagnino

List of Publications by Year in descending order

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143
papers

5,152
citations

147726

31
h-index

106281

65
g-index

145
all docs

145
docs citations

145
times ranked

2688
citing authors

#	ARTICLE	IF	CITATIONS
1	Evolution and Modern Approaches for Thermal Analysis of Electrical Machines. IEEE Transactions on Industrial Electronics, 2009, 56, 871-882.	5.2	754
2	High-Speed Electrical Machines: Technologies, Trends, and Developments. IEEE Transactions on Industrial Electronics, 2014, 61, 2946-2959.	5.2	709
3	Convection Heat Transfer and Flow Calculations Suitable for Electric Machines Thermal Models. IEEE Transactions on Industrial Electronics, 2008, 55, 3509-3516.	5.2	386
4	Determination of Critical Parameters in Electrical Machine Thermal Models. IEEE Transactions on Industry Applications, 2008, 44, 1150-1159.	3.3	287
5	Soft Magnetic Material Status and Trends in Electric Machines. IEEE Transactions on Industrial Electronics, 2017, 64, 2405-2414.	5.2	228
6	Modern Electrical Machine Design Optimization: Techniques, Trends, and Best Practices. IEEE Transactions on Industrial Electronics, 2018, 65, 7672-7684.	5.2	173
7	Computational Algorithms for Induction-Motor Equivalent Circuit Parameter Determinationâ€™Part I: Resistances and Leakage Reactances. IEEE Transactions on Industrial Electronics, 2011, 58, 3723-3733.	5.2	148
8	A General Model to Predict the Iron Losses in PWM Inverter-Fed Induction Motors. IEEE Transactions on Industry Applications, 2010, 46, 1882-1890.	3.3	111
9	Analysis of the Endwinding Cooling Effects in TEFC Induction Motors. IEEE Transactions on Industry Applications, 2007, 43, 1214-1222.	3.3	106
10	Computational Algorithms for Induction Motor Equivalent Circuit Parameter Determinationâ€™Part II: Skin Effect and Magnetizing Characteristics. IEEE Transactions on Industrial Electronics, 2011, 58, 3734-3740.	5.2	106
11	Modern Heat Extraction Systems for Power Traction Machinesâ€™A Review. IEEE Transactions on Industry Applications, 2016, 52, 2167-2175.	3.3	105
12	Experimental High-Frequency Parameter Identification of AC Electrical Motors. IEEE Transactions on Industry Applications, 2007, 43, 23-29.	3.3	101
13	Iron Loss Prediction With PWM Supply Using Low- and High-Frequency Measurements: Analysis and Results Comparison. IEEE Transactions on Industrial Electronics, 2008, 55, 1722-1728.	5.2	89
14	A General Model for Estimating the Laminated Steel Losses Under PWM Voltage Supply. IEEE Transactions on Industry Applications, 2010, 46, 1389-1396.	3.3	89
15	Efficiency Analysis of PWM Inverter Fed Three-Phase and Dual Three-Phase High Frequency Induction Machines for Low/Medium Power Applications. IEEE Transactions on Industrial Electronics, 2008, 55, 2015-2023.	5.2	84
16	Magnetic Materials Used in Electrical Machines: A Comparison and Selection Guide for Early Machine Design. IEEE Industry Applications Magazine, 2017, 23, 21-28.	0.3	83
17	Estimation of the Magnetic Properties of the Damaged Area Resulting From the Punching Process: Experimental Research and FEM Modeling. IEEE Transactions on Industry Applications, 2013, 49, 2069-2077.	3.3	74
18	Integrated Generator for More Electric Engine: Design and Testing of a Scaled-Size Prototype. IEEE Transactions on Industry Applications, 2013, 49, 2034-2043.	3.3	72

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19	Induction Motor Equivalent Circuit Including the Stray Load Losses in the Machine Power Balance. IEEE Transactions on Energy Conversion, 2008, 23, 796-803.	3.7	69
20	Fast Method for the Iron Loss Prediction in Inverter-Fed Induction Motors. IEEE Transactions on Industry Applications, 2010, 46, 806-811.	3.3	60
21	End Space Heat Transfer Coefficient Determination for Different Induction Motor Enclosure Types. IEEE Transactions on Industry Applications, 2009, 45, 929-937.	3.3	58
22	Modern heat extraction systems for electrical machines - A review. , 2015, , .		49
23	Analysis, Optimization, and Prototyping of a Brushless DC Limited-Angle Torque-Motor With Segmented Rotor Pole Tip Structure. IEEE Transactions on Industrial Electronics, 2015, 62, 4985-4993.	5.2	46
24	Conjugate Heat Transfer Analysis of Integrated Brushless Generators for More Electric Engines. IEEE Transactions on Industry Applications, 2014, 50, 2467-2475.	3.3	44
25	Core Axial Lengthening as Effective Solution to Improve the Induction Motor Efficiency Classes. IEEE Transactions on Industry Applications, 2014, 50, 218-225.	3.3	41
26	New Trends in Electrical Machines Technologyâ€™Part II. IEEE Transactions on Industrial Electronics, 2014, 61, 4931-4936.	5.2	40
27	Asymmetrical twelve-phase induction starter/generator for more electric engine in aircraft. , 2016, , .		37
28	The Incremental Design Efficiency Improvement of Commercially Manufactured Induction Motors. IEEE Transactions on Industry Applications, 2013, 49, 2496-2504.	3.3	36
29	Analysis and Modeling of Rotor Slot Enclosure Effects in High-Speed Induction Motors. IEEE Transactions on Industry Applications, 2012, 48, 1279-1287.	3.3	35
30	Experimental Identification and Reduction of Acoustic Noise in Small Brushed DC Motors. IEEE Transactions on Industry Applications, 2014, 50, 317-326.	3.3	33
31	Energy-efficient motors. IEEE Industrial Electronics Magazine, 2008, 2, 32-37.	2.3	32
32	Efficiency determination of converter-fed induction motors: Waiting for the IEC 60034–2–3 standard. , 2013, , .		31
33	Thermal Model and Analysis of Wound-Rotor Induction Machine. IEEE Transactions on Industry Applications, 2013, 49, 2078-2085.	3.3	31
34	New trends in electrical machines technology - Part I. IEEE Transactions on Industrial Electronics, 2014, 61, 4281-4285.	5.2	31
35	Practical Investigations on Cobaltâ€™Iron Laminations for Electrical Machines. IEEE Transactions on Industry Applications, 2015, 51, 2933-2939.	3.3	30
36	Optimization of Electric Machine Designsâ€™Part I. IEEE Transactions on Industrial Electronics, 2017, 64, 9716-9720.	5.2	26

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37	High-speed electrical machines and drives [Special section intro.]. IEEE Transactions on Industrial Electronics, 2014, 61, 2943-2945.	5.2	25
38	Impact of the Supply Voltage on the Stray-Load Losses in Induction Motors. IEEE Transactions on Industry Applications, 2010, 46, 1374-1380.	3.3	24
39	Investigations on Different Processing Conditions on Soft Magnetic Composite Material Behavior at Low Frequency. IEEE Transactions on Industry Applications, 2012, 48, 1335-1343.	3.3	24
40	More Robust and Reliable Optimized Energy Conversion Facilitated through Electric Machines, Power Electronics and Drives, and Their Control: State-of-the-Art and Trends. IEEE Transactions on Energy Conversion, 2020, 35, 1997-2012.	3.7	24
41	Flywheel energy storage systems for power systems application. , 2017, , .		23
42	Influence of different end region cooling arrangements on end-winding heat transfer coefficients in electrical machines. , 2010, , .		21
43	Optimization of Electric Machine Designs - Part II. IEEE Transactions on Industrial Electronics, 2018, 65, 1700-1703.	5.2	21
44	High efficiency design of induction machines for industrial applications. , 2013, , .		20
45	Influence of Punching, Welding, and Clamping on Magnetic Cores of Fractional KiloWatt Motors. IEEE Transactions on Industry Applications, 2018, 54, 4123-4132.	3.3	20
46	Core axial lengthening as effective solution to improve the induction motor efficiency classes. , 2011, , .		19
47	Striving for the Highest Efficiency Class With Minimal Impact for Induction Motor Manufacturers. IEEE Transactions on Industry Applications, 2020, 56, 194-204.	3.3	18
48	Manufacturing influence on the magnetic properties and iron losses in cobalt-iron stator cores for electrical machines. , 2014, , .		17
49	Characteristics comparison and selection guide for magnetic materials used in electrical machines. , 2015, , .		16
50	Standard Efficiency Determination of Induction Motors With a PWM Inverter Source. IEEE Transactions on Industry Applications, 2019, 55, 398-406.	3.3	16
51	Modelling of the closed rotor slot effects in the induction motor equivalent circuit. , 2008, , .		15
52	Design Trade-off and Experimental Validation of multiphase starter generators for 48V mini-hybrid powertrain. , 2014, , .		14
53	A new circuit-oriented model for the analysis of six-phase induction machine performances. Electric Power Systems Research, 2008, 78, 1798-1805.	2.1	13
54	Skin effect experimental validations of induction motor squirrel cage parameters. , 2008, , .		13

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55	A Critical Approach to the Iron Losses in Induction Motors. , 2003, , 71-77.		12
56	Estimation of magnetic properties and damaged area width due to punching process: Modeling and experimental research. , 2012, , .		11
57	Stator Lamination Geometry Influence on the Building Factor of Synchronous Reluctance Motor Cores. IEEE Transactions on Industry Applications, 2017, 53, 3394-3403.	3.3	11
58	Low cost solutions to reduce cogging torque and acoustic noise of small brushed DC motors for automotive radiator Cooling Fan Modules. , 2012, , .		10
59	Multiphase starter generator for 48V mini-hybrid powertrain: design and testing. IEEE Transactions on Industry Applications, 2015, , 1-1.	3.3	10
60	Towards an IE4 Efficiency Class for Induction Motors with Minimal Manufacturer Impact. , 2018, , .		10
61	SMC Materials in Electrical Machine Prototypes. , 2019, , .		10
62	Measurement-Based Optimization of Thermal Networks for Temperature Monitoring of Outer Rotor PM Machines. , 2020, , .		10
63	Multiphase starter generator for 48V mini-hybrid powertrain: Design and testing. , 2014, , .		9
64	New Magnetic Materials for Electrical Machines and Power Converters. IEEE Transactions on Industrial Electronics, 2017, 64, 2402-2404.	5.2	9
65	Skin effect experimental validations of induction motor squirrel cage parameters. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2010, 29, 1257-1265.	0.5	8
66	Multiphase induction machine for aero-engine shaft-line-embedded starter/generator: Scaled prototypes testing. , 2014, , .		8
67	Accuracy-Enhanced Algorithms for the Slot Leakage Inductance Computation of Double-Layer Windings. IEEE Transactions on Industry Applications, 2017, 53, 4422-4430.	3.3	8
68	Cost-optimal machine designs fulfilling efficiency requirements: A comparison of IMs and PMSMs. , 2017, , .		8
69	Contribution to Offline Measurements of PMSM and SyRM Inductances. IEEE Transactions on Industry Applications, 2019, 55, 407-416.	3.3	8
70	Experimental Characterization of a Belt-Driven Multi-Phase Induction Machine for 48 V Automotive Applications: Losses and Temperatures Assessments. IEEE Transactions on Industry Applications, 2015, , 1-1.	3.3	7
71	Experimental assessment of the annealing effects on magnetic core of fractional power synchronous reluctance motors. , 2016, , .		7
72	Impact of IM pole count on material cost increase for achieving mandatory efficiency requirements. , 2016, , .		7

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73	Impact of Number of Poles on the Steady-State Performance of Induction Motors. IEEE Transactions on Industry Applications, 2016, 52, 1422-1430.	3.3	7
74	Accurate Determination of Induction Machine Torque and Current Versus Speed Characteristics. IEEE Transactions on Industry Applications, 2017, 53, 3285-3294.	3.3	7
75	Cylindrical Wound-Rotor Synchronous Machines for Traction Applications. , 2020, , .		7
76	Superconductivity and its Application in the Field of Electrical Machines. , 2021, , .		7
77	A Comparison of Cryogenic-Cooled and Superconducting Electrical Machines. , 2021, , .		7
78	Accurate Induction Machines Efficiency Mapping Computed by Standard Test Parameters. IEEE Transactions on Industry Applications, 2022, 58, 3522-3532.	3.3	7
79	Importance of thermal modeling for design optimization scenarios of induction motors. , 2017, , .		6
80	Estimation and analysis of iron losses in induction motors under sinusoidal and PWM excitation. , 2008, , .		5
81	New lines of investigation on the effects of processing conditions on soft magnetic composite materials behaviour for electromagnetic applications. , 2010, , .		5
82	Conjugate heat transfer analysis of integrated brushless generators for more electric engines. , 2013, , .		5
83	Accurate determination of induction machine torque and current versus speed characteristics. , 2016, , .		5
84	Post-annealing behaviors of small-size synchronous reluctance motors. , 2016, , .		5
85	Induction machine efficiency measurement using a variable frequency drive source. , 2017, , .		5
86	Lumped-Parameters Thermal Network of PM Synchronous Machines for Automotive Brake-by-Wire Systems. Energies, 2021, 14, 5652.	1.6	5
87	Experimental Assessment of Induction Motors Fed by Sub-MHz-PWM Wide Band Gap Inverters. IEEE Transactions on Industry Applications, 2022, 58, 4461-4473.	3.3	5
88	Thermal model and analysis of wound rotor induction machine. , 2012, , .		4
89	Practical investigations on cobalt-iron laminations for electrical machines. , 2014, , .		4
90	Experimental characterization of a belt-driven multi-phase induction machine for 48 V automotive applications: Losses and temperatures assessments. , 2014, , .		4

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91	Modified single sheet tester system for engineering measurements. , 2016, , .		4
92	Analytic Modeling of Inverter-Fed Induction Machinesâ€”A Practical Approach for Matching Measurement and Simulation Data. IEEE Transactions on Industry Applications, 2016, 52, 4710-4718.	3.3	4
93	Impact of Rotor End Effects on FEM-Based Flux Mapping of Synchronous Reluctance Motors. IEEE Transactions on Industry Applications, 2018, 54, 4114-4122.	3.3	4
94	Applicability of Superposition Equivalent Loading Method for Induction Machine Temperature Tests. , 2018, , .		4
95	A New Laboratory for Hands-on Teaching of Electrical Engineering. , 2018, , .		4
96	A new Zig-Zag Variable Load Test Approach for Enhanced Stray-Load Loss Measurements. , 2019, , .		4
97	Loss Modeling for Interlocked Magnetic Cores. , 2020, , .		4
98	Enhanced Stray-Load Loss Measurements Through a Zigzag Variable Load Test Approach. IEEE Transactions on Industry Applications, 2021, 57, 226-235.	3.3	4
99	Noninvasive Measurements and FEM Analyses for Estimating the Rotor Bar-Lamination Contact Resistance. IEEE Transactions on Industry Applications, 2021, 57, 208-217.	3.3	4
100	Experimental Assessment and Modeling of Losses in Interlocked Magnetic Cores. IEEE Transactions on Industry Applications, 2022, 58, 4450-4460.	3.3	4
101	Experimental Assessment of Cryogenic Cooling Impact on Induction Motors. IEEE Transactions on Energy Conversion, 2022, 37, 2629-2636.	3.7	4
102	The incremental design efficiency improvement of commercially manufactured induction motors. , 2012, , .		3
103	Experimental identification and reduction of acoustic noise in small brushed DC motors. , 2012, , .		3
104	Analytic modeling of inverter-fed induction machines — A practical approach for matching measurement and simulation data. , 2014, , .		3
105	Comparison of the fractional power motor with cores made of various magnetic materials. Open Physics, 2017, 15, 827-832.	0.8	3
106	Practical considerations on the off-line measurements of PMSM and SyRM inductances. , 2017, , .		3
107	FEM Analysis of the Inter-Bar Currents in Induction Motors Aimed at Estimating Contact Resistance. , 2019, , .		3
108	Efficiency Mapping and Weighted Average Efficiency for Large Hydrogenerators. IEEE Open Journal of Industry Applications, 2021, 2, 11-20.	4.8	3

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109	Guest Editorial: Robust Design and Analysis of Electric Machines and Drives. IEEE Transactions on Energy Conversion, 2020, 35, 1995-1996.	3.7	3
110	Multiple Layer Magnetic Materials for Variable Flux Permanent Magnet Machines. , 2020, , .		3
111	Doubly Excited Synchronous Machines for Traction Applications. , 2021, , .		3
112	Approaches for Improving Lumped Parameter Thermal Networks for Outer Rotor SPM Machines. , 2021, , .		3
113	Analytical Model of the Ferromagnetic Properties in Laminations Damaged by Cutting. , 2021, , .		3
114	Stator lamination geometry influence on the building factor of synchronous reluctance motor cores. , 2016, , .		2
115	On the accuracy of the slot leakage inductance analytical computation. , 2016, , .		2
116	Rotor end effects on FEM-based flux mapping of synchronous reluctance motors. , 2017, , .		2
117	Equivalent permeability method for multiple machine analysis by a single 2d-FEA model. , 2017, , .		2
118	Virtual Material Method for Enabling a Single 2D-FEA Simulation of Electrical Machine Sets. IEEE Transactions on Energy Conversion, 2018, 33, 1354-1362.	3.7	2
119	Fast Characterization of AC Windings. , 2018, , .		2
120	Nanofluids for Rotating Electrical Machines Cooling: Perspectives and Challenges. , 2019, , .		2
121	Alternative methods for electric machine rated load temperature tests. , 2020, , .		2
122	Off-Line Efficiency Mapping of Induction Motors Operated in Wide Torque-Speed Ranges. , 2020, , .		2
123	On the Effects of Ultra-High Switching Frequency on PWM-Inverter-Fed Induction Motors. , 2020, , .		2
124	Multilayer Bonded Magnets in Surface-Mounted PM Synchronous Machines. , 2020, , .		2
125	Test rig for induction motor quasi-static electromechanical characteristic determination. , 2014, , .		1
126	Impact of number of poles on the steady-state performance of induction motors. , 2015, , .		1

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127	Prototyping experiences on 48V starter-alternators. , 2016, , .		1
128	Compaction of SMC Materials by Applying External Magnetic Fields to the Mold. , 2018, , .		1
129	Surface-Mounted and Flux-Switching PM Structures Trade-off for Automotive Smart Actuators. , 2019, , .		1
130	Hybrid Method for Measuring Rotor Bar-Lamination Contact Resistances. , 2019, , .		1
131	Induction Machine Efficiency at Variable Frequencies. , 2019, , .		1
132	FEM Modeling of Surface Losses in Accordance with Their Nature. , 2021, , .		1
133	Multiphysic Design and Modeling of Rotating Electrical Machines. , 2021, , .		1
134	Experimental validation of a simple multiphysics model for drum roller driven by induction motor. , 2011, , .		0
135	Interchanging induction motors for fifty Hertz and sixty Hertz operation. , 2013, , .		0
136	Assembly effects on stator cores of small synchronous reluctance motors. , 2017, , .		0
137	Analysis of PM Machines with Sectored-Stator. , 2019, , .		0
138	Analytically-Based Optimization of SMPM Machines for Sizing Validation Purposes. , 2019, , .		0
139	Spatial MMF Harmonic Mitigation in Aluminum-Cage Induction Motors. , 2019, , .		0
140	Errata to "Noninvasive Measurements and FEM Analyses for Estimating the Rotor Bar-Lamination Contact Resistance" [Jan/Feb 21 208-217]. IEEE Transactions on Industry Applications, 2021, 57, 4347-4347.	3.3	0
141	Comparison of Superposition Equivalent Loading Methods for Induction Machine Temperature Tests. , 2021, , .		0
142	Electromagnetic and Thermal Evaluation of Surface-Mounted PM Vernier Machines. , 2021, , .		0
143	Asynchronous motors. , 2023, , 280-298.		0