Antero Arkkio

List of Publications by Year
in descending order

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120 papers	1,550 citations	331670 21 h-index	395702 33 g-index
120 all docs	120 docs citations	120 times ranked	1056 citing authors

#	Article	IF	Citations
1	Finite element analysis of cage induction motors fed by static frequency converters. IEEE Transactions on Magnetics, 1990, 26, 551-554.	2.1	92
2	Inverted and forward preisach models for numerical analysis of electromagnetic field problems. IEEE Transactions on Magnetics, 2006, 42, 1963-1973.	2.1	70
3	FEM for Directly Coupled Magneto-Mechanical Phenomena in Electrical Machines. IEEE Transactions on Magnetics, 2010, 46, 2923-2926.	2.1	59
4	Eddy-Current Loss and Temperature Rise in the Form-Wound Stator Winding of an Inverter-Fed Cage Induction Motor. IEEE Transactions on Magnetics, 2010, 46, 3413-3416.	2.1	51
5	A Simple and Efficient Quasi-3D Magnetic Equivalent Circuit for Surface Axial Flux Permanent Magnet Synchronous Machines. IEEE Transactions on Industrial Electronics, 2019, 66, 8318-8333.	7.9	49
6	Model of laminated ferromagnetic cores for loss prediction in electrical machines. IET Electric Power Applications, 2011, 5, 580.	1.8	47
7	Numerical Investigation of the Effects of Loading and Slot Harmonics on the Core Losses of Induction Machines. IEEE Transactions on Magnetics, 2012, 48, 1063-1066.	2.1	44
8	End-Winding Vibrations Caused by Steady-State Magnetic Forces in an Induction Machine. IEEE Transactions on Magnetics, 2010, 46, 2665-2674.	2.1	38
9	Rotor Radial Position Control and its Effect on the Total Efficiency of a Bearingless Induction Motor With a Cage Rotor. IEEE Transactions on Magnetics, 2014, 50, 1-9.	2.1	37
10	Effect of Mechanical Stress on Excess Loss of Electrical Steel Sheets. IEEE Transactions on Magnetics, 2015, 51, 1-4.	2.1	37
11	Modeling of Hysteresis Losses in Ferromagnetic Laminations Under Mechanical Stress. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	35
12	Segregation of Iron Losses From Rotational Field Measurements and Application to Electrical Machine. IEEE Transactions on Magnetics, 2014, 50, 893-896.	2.1	34
13	Particle Filter-Based Estimation of Instantaneous Frequency for the Diagnosis of Electrical Asymmetries in Induction Machines. IEEE Transactions on Instrumentation and Measurement, 2014, 63, 2454-2463.	4.7	33
14	Computation of additional losses due to rotor eccentricity in electrical machines. IET Electric Power Applications, 2010, 4, 259.	1.8	32
15	On the Importance of Incorporating Iron Losses in the Magnetic Field Solution of Electrical Machines. IEEE Transactions on Magnetics, 2010, 46, 3101-3104.	2.1	31
16	Importance of Iron-Loss Modeling in Simulation of Wound-Field Synchronous Machines. IEEE Transactions on Magnetics, 2012, 48, 2495-2504.	2.1	31
17	Broken bar indicators for cage induction motors and their relationship with the number of consecutive broken bars. IET Electric Power Applications, 2013, 7, 633-642.	1.8	29
18	Identification of Magnetic Properties for Cutting Edge of Electrical Steel Sheets. IEEE Transactions on Industry Applications, 2017, 53, 1049-1053.	4.9	29

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19	Monte Carlo Analysis of Circulating Currents in Random-Wound Electrical Machines. IEEE Transactions on Magnetics, 2016, 52, 1-12.	2.1	28
20	Analysis of Eddy-Current Loss in End Shield and Frame of a Large Induction Machine. IEEE Transactions on Magnetics, 2010, 46, 942-948.	2.1	26
21	Inclusion of Eddy Currents in Laminations in Two-Dimensional Finite Element Analysis. IEEE Transactions on Magnetics, 2010, 46, 2915-2918.	2.1	22
22	Thermal analysis of a high-speed PM machine using numerical and thermal-network method. , 2010, , .		21
23	Efficient Finite-Element Computation of Circulating Currents in Thin Parallel Strands. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	21
24	Mixed-Order Finite-Element Modeling of Magnetic Material Degradation Due to Cutting. IEEE Transactions on Magnetics, 2018, 54, 1-8.	2.1	20
25	Axial Flux and Eddy-Current Loss in Active Region of a Large-Sized Squirrel-Cage Induction Motor. IEEE Transactions on Magnetics, 2010, 46, 3933-3938.	2.1	19
26	Effect of Laser Cutting on Core Losses in Electrical Machinesâ€"Measurements and Modeling. IEEE Transactions on Industrial Electronics, 2020, 67, 7354-7363.	7.9	19
27	Permanent magnets models and losses in 2D FEM simulation of electrical machines. , 2010, , .		18
28	A hybrid PBIL-based harmony search method. Neural Computing and Applications, 2012, 21, 1071-1083.	5.6	18
29	Rotational Single Sheet Tester for Multiaxial Magneto-Mechanical Effects in Steel Sheets. IEEE Transactions on Magnetics, 2019, 55, 1-10.	2.1	18
30	Coupled Magneto-Mechanical Analysis of Iron Sheets Under Biaxial Stress. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	17
31	Eccentricity Related Forces in Two-Pole Induction Motor With Four-Pole Stator Damper Winding Analyzed Using Measured Rotor Orbits. IEEE Transactions on Magnetics, 2013, 49, 3029-3037.	2.1	16
32	Effects of Manufacturing Processes on Core Losses of Electrical Machines. IEEE Transactions on Energy Conversion, 2021, 36, 197-206.	5.2	16
33	Loss Minimization for Form-Wound Stator Winding of a High-Speed Induction Motor. IEEE Transactions on Magnetics, 2012, 48, 4874-4879.	2.1	15
34	Effect of Punching the Electrical Sheets on Optimal Design of a Permanent Magnet Synchronous Motor. IEEE Transactions on Magnetics, 2018, 54, 1-4.	2.1	15
35	A 3D Dynamic Lumped Parameter Thermal Network of Air-Cooled YASA Axial Flux Permanent Magnet Synchronous Machine. Energies, 2018, 11, 774.	3.1	15
36	Computation of Torque of an Electrical Machine With Different Types of Finite Element Mesh in the Air Gap. IEEE Transactions on Magnetics, 2014, 50, 1-9.	2.1	14

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37	Coupled analytical and 3D numerical thermal analysis of a TEFC induction motor. , 2015, , .		14
38	Domain Decomposition Approach for Efficient Time-Domain Finite-Element Computation of Winding Losses in Electrical Machines. IEEE Transactions on Magnetics, 2017, 53, 1-9.	2.1	14
39	Inverse Thermal Modeling to Determine Power Losses in Induction Motor. IEEE Transactions on Magnetics, 2017, 53, 1-4.	2.1	14
40	Modeling the Effect of Multiaxial Stress on Magnetic Hysteresis of Electrical Steel Sheets: A Comparison. IEEE Transactions on Magnetics, 2017, 53, 1-4.	2.1	14
41	Experimental determination and numerical evaluation of core losses in a 150â€kVA woundâ€field synchronous machine. IET Electric Power Applications, 2013, 7, 97-105.	1.8	13
42	Higher-order finite element modeling of material degradation due to cutting. , 2017, , .		13
43	2-D Magnetomechanical Transient Study of a Motor Suffering a Bar Breakage. IEEE Transactions on Industry Applications, 2018, 54, 2097-2104.	4.9	13
44	Additional Losses of Electrical Machines Under Torsional Vibration. IEEE Transactions on Energy Conversion, 2018, 33, 245-251.	5.2	13
45	Eddy-Current Loss Modeling for a Form-Wound Induction Motor Using Circuit Model. IEEE Transactions on Magnetics, 2012, 48, 1059-1062.	2.1	12
46	Comparison of Finite-Element-Based State-Space Models for PM Synchronous Machines. IEEE Transactions on Energy Conversion, 2014, 29, 535-543.	5.2	12
47	Numerical Analysis of the Power Balance of an Electrical Machine With Rotor Eccentricity. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	12
48	A New Harmony Search method in optimal wind generator design. , 2010, , .		11
49	Iron Losses, Magnetoelasticity and Magnetostriction in Ferromagnetic Steel Laminations. IEEE Transactions on Magnetics, 2013, 49, 2041-2044.	2.1	11
50	Space-Vector Models for Torsional Vibration of Cage Induction Motors. IEEE Transactions on Industry Applications, 2016, 52, 2988-2995.	4.9	11
51	A Dynamic Model for Saturated Induction Machines With Closed Rotor Slots and Deep Bars. IEEE Transactions on Energy Conversion, 2020, 35, 157-165.	5.2	11
52	Modeling the effect of inverter supply on eddy-current losses in synchronous machines. , 2010, , .		10
53	Sensitivity Analysis of Inverse Thermal Modeling to Determine Power Losses in Electrical Machines. IEEE Transactions on Magnetics, 2018, 54, 1-5.	2.1	10
54	Model of Magnetic Anisotropy of Non-Oriented Steel Sheets for Finite-Element Method. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	9

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55	A High-Performance Open-Source Finite Element Analysis Library for Magnetics in MATLAB. , 2018, , .		9
56	A 2D FEM analysis of electromechanical signatures in induction motors under dynamic eccentricity. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2014, 27, 555-571.	1.9	8
57	3D permeance model of induction machines taking into account saturation effects and its connection with stator current and shaft speed spectra. IET Electric Power Applications, 2015, 9, 20-29.	1.8	8
58	Identification of Synchronous Machine Magnetization Characteristics From Calorimetric Core-Loss and No-Load Curve Measurements. IEEE Transactions on Magnetics, 2015, 51, 1-4.	2.1	8
59	Combined Model for Simulating the Effect of Transients on a Damaged Rotor Cage. IEEE Transactions on Industry Applications, 2017, 53, 3528-3537.	4.9	8
60	Thermographic Measurement and Simulation of Power Losses Due to Interlaminar Contacts in Electrical Sheets. IEEE Transactions on Instrumentation and Measurement, 2018, 67, 2628-2634.	4.7	8
61	Comparison of Anisotropic Energy-Based and Jilesâ€“Atherton Models of Ferromagnetic Hysteresis. IEEE Transactions on Magnetics, 2020, 56, 1-7.	2.1	8
62	Effect of Rotor Pole-Shoe Construction on Losses of Inverter-Fed Synchronous Motors. IEEE Transactions on Industry Applications, 2014, 50, 208-217.	4.9	7
63	Loss Model for the Effects of Steel Cutting in Electrical Machines. , 2018, , .		7
64	Effects of stator core welding on an induction machine â€“ Measurements and modeling. Journal of Magnetism and Magnetic Materials, 2020, 499, 166280.	2.3	7
65	Representation of anisotropic magnetic characteristic observed in a non-oriented silicon steel sheet. AIP Advances, 2020, 10, .	1.3	7
66	Modeling of multi-axial stress dependent iron losses in electrical steel sheets. Journal of Magnetism and Magnetic Materials, 2020, 504, 166612.	2.3	7
67	Safe Turn-Off Strategy for Electric Drives in Automotive Applications. IEEE Transactions on Transportation Electrification, 2022, 8, 9-22.	7.8	7
68	Calorimetric measurement of stator core losses. , 2012, , .		6
69	Form-wound stator winding for high-speed induction motors. , 2014, , .		6
70	Alternating and rotational loss prediction accuracy of vector Jiles-Atherton model. Journal of Magnetism and Magnetic Materials, 2021, 527, 167690.	2.3	6
71	Improved sampling algorithm for stochastic modelling of randomâ€wound electrical machines. Journal of Engineering, 2019, 2019, 3976-3980.	1.1	6
72	Proper finite-element discretization for torque computation of cage induction motors. , 2012, , .		5

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73	Controlling Rotor Vibrations of a Two-Pole Induction Machine With Unipolar Actuator. IEEE Transactions on Magnetics, 2012, 48, 2205-2210.	2.1	5
74	A multi-label classification approach for the detection of broken bars and mixed eccentricity faults using the start-up transient. , 2016, , .		5
75	Harmonic torque suppression by manual voltage injection. , 2010, , .		4
76	Magnetomechanical coupled FE simulations of rotating electrical machines. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2013, 32, 1484-1499.	0.9	4
77	Evolution of high order fault harmonics during a bar breakage with compensation. , 2014, , .		4
78	Efficiency map prediction of flux switching machine. , 2015, , .		4
79	Combined model for simulating the effect of a heavy transient on a damaged rotor cage. , 2016, , .		4
80	Experimental and theoretical study of interlaminar eddy current loss in laminated cores. , 2017, , .		4
81	A Negative Selection Algorithm-based motor fault detection scheme. , 2011, , .		3
82	A smart wireless sensor for the diagnosis of broken bars in induction motors. , 2012, , .		3
83	Instantaneous Power Balance in Finite-Element Simulation of Electrical Machines. IEEE Transactions on Magnetics, 2014, 50, 1-7.	2.1	3
84	Simulation of an Induction Motorâ€™s Rotor After Connection. IEEE Transactions on Magnetics, 2017, 53, 1-4.	2.1	3
85	Prospects and Limitations of Power Balance Approach for Studying Forces and Electromagnetic Damping in Electrical Machines. IEEE Transactions on Magnetics, 2018, 54, 1-8.	2.1	3
86	Power loss segregation in electrical machines through calorimetry and inverse thermal modelling. IET Electric Power Applications, 2020, 14, 1127-1133.	1.8	3
87	Circuit models for predicting core losses in the stator and rotor of a caged induction machine with sinusoidal supplies. , 2010, , .		2
88	General formulation for the Newton-Raphson method and the fixed-point method in finite-element programs. , 2010, , .		2
89	Synchronous torques of a cage induction motor from time-discretized finite element analysis. , 2011, , .		2
90	Unipolar flux in bearingless two-pole machine. , 2012, , .		2

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91	Effect of rotor pole-shoe construction on losses of inverter-fed synchronous motors. , 2012, , .		2
92	Evaluation and comparison of different numerical computation methods for the electromagnetic torque in electrical machines. , 2013, , .		2
93	Diagnosis of induction machines under varying speed operation by Principal Slot Harmonic tracking. , 2014, , .		2
94	Space-vector models for torsional vibration of cage induction motors. , 2015, , .		2
95	Automation of the startup transient analysis of induction motors using a predictive stage. , 2015, , .		2
96	Reduced basis finite element modelling of electrical machines with multi-conductor windings. , 2016, , .		2
97	Reduced Basis Finite Element Modeling of Electrical Machines with Multiconductor Windings. IEEE Transactions on Industry Applications, 2017, 53, 4252-4259.	4.9	2
98	Estimating the parameters of induction motors in different operating regimes from a set of data containing the rotor cage temperature. Electrical Engineering, 2018, 100, 139-150.	2.0	2
99	Use of high order harmonics for diagnosis of simultaneous faults via Wigner-Ville distributions. , 2010, , .		1
100	Electrical fault diagnosis for an induction motor using an electromechanical FE model. , 2014, , .		1
101	Measurement of torque harmonics of a cage induction machine under rotor eccentricity. , 2015, , .		1
102	Current variation in a rotor bar during transients due to a hot spot. , 2015, , .		1
103	Modelling the effect of multiaxial stress on magnetic hysteresis of electrical steel sheets: A comparison. , 2016, , .		1
104	Eddy current loss calculation in burred laminated cores. , 2016, , .		1
105	Permanent magnet assisted synchronous reluctance motor in hoist application. , 2016, , .		1
106	Power balance approach to study electromagnetic damping in rotor dynamics. , 2016, , .		1
107	Energy-Preserving Methods and Torque Computation From Energy Balance in Electrical Machine Simulations. IEEE Transactions on Magnetics, 2016, 52, 1-8.	2.1	1
108	2-D magnetomechanical transient simulation of a motor with a bar breakage. , 2017, , .		1

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109	Efficient finite element method to estimate eddy current loss due to random interlaminar contacts in electrical sheets. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2018, 31, e2254.	1.9	1
110	Reducing the Losses of Electrical Machines Under Torsional Vibration. , 2018, , .		1
111	Verification of loss segregation in electrical machines through inverse thermal modelling. International Journal of Applied Electromagnetics and Mechanics, 2019, 59, 227-233.	0.6	1
112	A hybrid PBIL-based Harmony Search method with application in wind generator optimization. , 2010, , .		0
113	Effect of stress on excess loss of electrical steel sheets. , 2015, , .		0
114	Improving Control of Torsional Vibrations of Motor-Driven Reciprocating Compressors. , 2016, , .		0
115	Simulation of an induction motor's rotor after connection. , 2016, , .		0
116	Two-axis models for torsional vibration of synchronous machines. , 2016, , .		0
117	Comparison of thermal stresses developed during transients on a damaged rotor cage. , 2017, , .		0
118	3-D simulation of a rotor suffering a bar breakage. , 2017, , .		0
119	Design of Water-Cooled Calorimeter for Electric Motor's Power Loss Measurement. , 2018, , .		0
120	Parameter Estimation of Inter-Laminar Fault-Region in Laminated Sheets Through Inverse Approach. Energies, 2020, 13, 3251.	3.1	0