

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	Safe Turn-Off Strategy for Electric Drives in Automotive Applications. IEEE Transactions on Transportation Electrification, 2022, 8, 9-22.	7.8	7
2	Effects of Manufacturing Processes on Core Losses of Electrical Machines. IEEE Transactions on Energy Conversion, 2021, 36, 197-206.	5.2	16
3	Alternating and rotational loss prediction accuracy of vector Jiles-Atherton model. Journal of Magnetism and Magnetic Materials, 2021, 527, 167690.	2.3	6
4	Effect of Laser Cutting on Core Losses in Electrical Machines – Measurements and Modeling. IEEE Transactions on Industrial Electronics, 2020, 67, 7354-7363.	7.9	19
5	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
6	Effects of stator core welding on an induction machine – Measurements and modeling. Journal of Magnetism and Magnetic Materials, 2020, 499, 166280.	2.3	7
7	Representation of anisotropic magnetic characteristic observed in a non-oriented silicon steel sheet. AIP Advances, 2020, 10, .	1.3	7
8	Parameter Estimation of Inter-Laminar Fault-Region in Laminated Sheets Through Inverse Approach. Energies, 2020, 13, 3251.	3.1	0
9	Comparison of Anisotropic Energy-Based and Jiles – Atherton Models of Ferromagnetic Hysteresis. IEEE Transactions on Magnetics, 2020, 56, 1-7.	2.1	8
10	Power loss segregation in electrical machines through calorimetry and inverse thermal modelling. IET Electric Power Applications, 2020, 14, 1127-1133.	1.8	3
11	Modeling of multi-axial stress dependent iron losses in electrical steel sheets. Journal of Magnetism and Magnetic Materials, 2020, 504, 166612.	2.3	7
12	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
13	Rotational Single Sheet Tester for Multiaxial Magneto-Mechanical Effects in Steel Sheets. IEEE Transactions on Magnetics, 2019, 55, 1-10.	2.1	18
14	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
15	Improved sampling algorithm for stochastic modelling of random-wound electrical machines. Journal of Engineering, 2019, 2019, 3976-3980.	1.1	6
16	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
17	Mixed-Order Finite-Element Modeling of Magnetic Material Degradation Due to Cutting. IEEE Transactions on Magnetics, 2018, 54, 1-8.	2.1	20
18	2-D Magnetomechanical Transient Study of a Motor Suffering a Bar Breakage. IEEE Transactions on Industry Applications, 2018, 54, 2097-2104.	4.9	13

#	ARTICLE	IF	CITATIONS
19	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
20	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
21	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
22	Additional Losses of Electrical Machines Under Torsional Vibration. IEEE Transactions on Energy Conversion, 2018, 33, 245-251.	5.2	13
23	Design of Water-Cooled Calorimeter for Electric Motor's Power Loss Measurement. , 2018, , .		0
24	Loss Model for the Effects of Steel Cutting in Electrical Machines. , 2018, , .		7
25	Reducing the Losses of Electrical Machines Under Torsional Vibration. , 2018, , .		1
26	A High-Performance Open-Source Finite Element Analysis Library for Magnetics in MATLAB. , 2018, , .		9
27	Sensitivity Analysis of Inverse Thermal Modeling to Determine Power Losses in Electrical Machines. IEEE Transactions on Magnetics, 2018, 54, 1-5.	2.1	10
28	A 3D Dynamic Lumped Parameter Thermal Network of Air-Cooled YASA Axial Flux Permanent Magnet Synchronous Machine. Energies, 2018, 11, 774.	3.1	15
29	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
30	Identification of Magnetic Properties for Cutting Edge of Electrical Steel Sheets. IEEE Transactions on Industry Applications, 2017, 53, 1049-1053.	4.9	29
31	Simulation of an Induction Motor's Rotor After Connection. IEEE Transactions on Magnetics, 2017, 53, 1-4.	2.1	3
32	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
33	Inverse Thermal Modeling to Determine Power Losses in Induction Motor. IEEE Transactions on Magnetics, 2017, 53, 1-4.	2.1	14
34	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
35	Reduced Basis Finite Element Modeling of Electrical Machines with Multiconductor Windings. IEEE Transactions on Industry Applications, 2017, 53, 4252-4259.	4.9	2
36	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

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37	2-D magnetomechanical transient simulation of a motor with a bar breakage. , 2017, , .		1
38	Comparison of thermal stresses developed during transients on a damaged rotor cage. , 2017, , .		0
39	Experimental and theoretical study of interlaminar eddy current loss in laminated cores. , 2017, , .		4
40	3-D simulation of a rotor suffering a bar breakage. , 2017, , .		0
41	Higher-order finite element modeling of material degradation due to cutting. , 2017, , .		13
42	Improving Control of Torsional Vibrations of Motor-Driven Reciprocating Compressors. , 2016, , .		0
43	A multi-label classification approach for the detection of broken bars and mixed eccentricity faults using the start-up transient. , 2016, , .		5
44	Modelling the effect of multiaxial stress on magnetic hysteresis of electrical steel sheets: A comparison. , 2016, , .		1
45	Combined model for simulating the effect of a heavy transient on a damaged rotor cage. , 2016, , .		4
46	Eddy current loss calculation in burred laminated cores. , 2016, , .		1
47	Simulation of an induction motor's rotor after connection. , 2016, , .		0
48	Space-Vector Models for Torsional Vibration of Cage Induction Motors. IEEE Transactions on Industry Applications, 2016, 52, 2988-2995.	4.9	11
49	Permanent magnet assisted synchronous reluctance motor in hoist application. , 2016, , .		1
50	Two-axis models for torsional vibration of synchronous machines. , 2016, , .		0
51	Reduced basis finite element modelling of electrical machines with multi-conductor windings. , 2016, , .		2
52	Power balance approach to study electromagnetic damping in rotor dynamics. , 2016, , .		1
53	Modeling of Hysteresis Losses in Ferromagnetic Laminations Under Mechanical Stress. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	35
54	Numerical Analysis of the Power Balance of an Electrical Machine With Rotor Eccentricity. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	12

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55	Efficient Finite-Element Computation of Circulating Currents in Thin Parallel Strands. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	21
56	Coupled Magneto-Mechanical Analysis of Iron Sheets Under Biaxial Stress. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	17
57	Energy-Preserving Methods and Torque Computation From Energy Balance in Electrical Machine Simulations. IEEE Transactions on Magnetics, 2016, 52, 1-8.	2.1	1
58	Monte Carlo Analysis of Circulating Currents in Random-Wound Electrical Machines. IEEE Transactions on Magnetics, 2016, 52, 1-12.	2.1	28
59	Model of Magnetic Anisotropy of Non-Oriented Steel Sheets for Finite-Element Method. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	9
60	Efficiency map prediction of flux switching machine. , 2015, , .		4
61	Coupled analytical and 3D numerical thermal analysis of a TEFC induction motor. , 2015, , .		14
62	Measurement of torque harmonics of a cage induction machine under rotor eccentricity. , 2015, , .		1
63	Space-vector models for torsional vibration of cage induction motors. , 2015, , .		2
64	Current variation in a rotor bar during transients due to a hot spot. , 2015, , .		1
65	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
66	Effect of Mechanical Stress on Excess Loss of Electrical Steel Sheets. IEEE Transactions on Magnetics, 2015, 51, 1-4.	2.1	37
67	Effect of stress on excess loss of electrical steel sheets. , 2015, , .		0
68	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
69	Automation of the startup transient analysis of induction motors using a predictive stage. , 2015, , .		2
70	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
71	Evolution of high order fault harmonics during a bar breakage with compensation. , 2014, , .		4
72	Diagnosis of induction machines under varying speed operation by Principal Slot Harmonic tracking. , 2014, , .		2

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73	Form-wound stator winding for high-speed induction motors. , 2014, , .		6
74	Electrical fault diagnosis for an induction motor using an electromechanical FE model. , 2014, , .		1
75	Comparison of Finite-Element-Based State-Space Models for PM Synchronous Machines. IEEE Transactions on Energy Conversion, 2014, 29, 535-543.	5.2	12
76	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
77	Instantaneous Power Balance in Finite-Element Simulation of Electrical Machines. IEEE Transactions on Magnetics, 2014, 50, 1-7.	2.1	3
78	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
79	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
80	Segregation of Iron Losses From Rotational Field Measurements and Application to Electrical Machine. IEEE Transactions on Magnetics, 2014, 50, 893-896.	2.1	34
81	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
82	Iron Losses, Magnetoelasticity and Magnetostriction in Ferromagnetic Steel Laminations. IEEE Transactions on Magnetics, 2013, 49, 2041-2044.	2.1	11
83	Evaluation and comparison of different numerical computation methods for the electromagnetic torque in electrical machines. , 2013, , .		2
84	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
85	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
86	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
87	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
88	Calorimetric measurement of stator core losses. , 2012, , .		6
89	A hybrid PBIL-based harmony search method. Neural Computing and Applications, 2012, 21, 1071-1083.	5.6	18
90	Unipolar flux in bearingless two-pole machine. , 2012, , .		2

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91	A smart wireless sensor for the diagnosis of broken bars in induction motors. , 2012, , .		3
92	Proper finite-element discretization for torque computation of cage induction motors. , 2012, , .		5
93	Importance of Iron-Loss Modeling in Simulation of Wound-Field Synchronous Machines. IEEE Transactions on Magnetics, 2012, 48, 2495-2504.	2.1	31
94	Effect of rotor pole-shoe construction on losses of inverter-fed synchronous motors. , 2012, , .		2
95	Eddy-Current Loss Modeling for a Form-Wound Induction Motor Using Circuit Model. IEEE Transactions on Magnetics, 2012, 48, 1059-1062.	2.1	12
96	Loss Minimization for Form-Wound Stator Winding of a High-Speed Induction Motor. IEEE Transactions on Magnetics, 2012, 48, 4874-4879.	2.1	15
97	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
98	Controlling Rotor Vibrations of a Two-Pole Induction Machine With Unipolar Actuator. IEEE Transactions on Magnetics, 2012, 48, 2205-2210.	2.1	5
99	Synchronous torques of a cage induction motor from time-discretized finite element analysis. , 2011, , .		2
100	Model of laminated ferromagnetic cores for loss prediction in electrical machines. IET Electric Power Applications, 2011, 5, 580.	1.8	47
101	A Negative Selection Algorithm-based motor fault detection scheme. , 2011, , .		3
102	Computation of additional losses due to rotor eccentricity in electrical machines. IET Electric Power Applications, 2010, 4, 259.	1.8	32
103	End-Winding Vibrations Caused by Steady-State Magnetic Forces in an Induction Machine. IEEE Transactions on Magnetics, 2010, 46, 2665-2674.	2.1	38
104	FEM for Directly Coupled Magneto-Mechanical Phenomena in Electrical Machines. IEEE Transactions on Magnetics, 2010, 46, 2923-2926.	2.1	59
105	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
106	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
107	Inclusion of Eddy Currents in Laminations in Two-Dimensional Finite Element Analysis. IEEE Transactions on Magnetics, 2010, 46, 2915-2918.	2.1	22
108	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

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109	Thermal analysis of a high-speed PM machine using numerical and thermal-network method. , 2010, , .		21
110	A New Harmony Search method in optimal wind generator design. , 2010, , .		11
111	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
112	Harmonic torque suppression by manual voltage injection. , 2010, , .		4
113	Modeling the effect of inverter supply on eddy-current losses in synchronous machines. , 2010, , .		10
114	Circuit models for predicting core losses in the stator and rotor of a caged induction machine with sinusoidal supplies. , 2010, , .		2
115	A hybrid PBIL-based Harmony Search method with application in wind generator optimization. , 2010, , .		0
116	Permanent magnets models and losses in 2D FEM simulation of electrical machines. , 2010, , .		18
117	General formulation for the Newton-Raphson method and the fixed-point method in finite-element programs. , 2010, , .		2
118	Use of high order harmonics for diagnosis of simultaneous faults via Wigner-Ville distributions. , 2010, , .		1
119	Inverted and forward preisach models for numerical analysis of electromagnetic field problems. IEEE Transactions on Magnetics, 2006, 42, 1963-1973.	2.1	70
120	Finite element analysis of cage induction motors fed by static frequency converters. IEEE Transactions on Magnetics, 1990, 26, 551-554.	2.1	92