

AC losses analysis approaches for electric vehicle motors with hairpin winding configuration

Shams Ghahfarokhi, Payam; Podgornovs, Andrejs; Marques Cardoso, Antonio J.; **Kallaste, Ants**; Belahcen, Anouar; **Vaimann, Toomas** IECON 2021 - 47th Annual Conference of the IEEE Industrial Electronics Society, 2021 2021 / p. 1-4 : ill
<https://doi.org/10.1109/IECON48115.2021.9589339> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

AC magnetic loss reduction of SLM processed Fe-Si for additive manufacturing of electrical machines

Tiismus, Hans; **Kallaste, Ants**; Belahcen, Anouar; **Tarraste, Marek**; **Vaimann, Toomas**; **Rassõlkin, Anton**; **Asad, Bilal**; **Ghahfarokhi, Payam Shams** Energies 2021 / 13 p. : ill <https://doi.org/10.3390/en14051241> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Additive design possibilities of electrical machines

Kallaste, Ants; **Vaimann, Toomas**; **Rassõlkin, Anton** 59th Annual International Scientific Conference on Power and Electrical Engineering : November 12, 13, 2018, Riga Technical University (RTUCON) : conference proceedings 2018 / 5 p. : ill
<https://doi.org/10.1109/RTUCON.2018.8659828>

Additive Manufacturing and Performance of E-Type Transformer Core

Tiismus, Hans; **Kallaste, Ants**; Belahcen, Anouar; **Rassõlkin, Anton**; **Vaimann, Toomas**; **Ghahfarokhi, Payam Shams** Energies 2021 / art. 3278 <https://doi.org/10.3390/en14113278> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Additive manufacturing of electrical machines

Kallaste, Ants 18th International Symposium "Topical Problems in the Field of Electrical and Power Engineering". Doctoral School of Energy and Geotechnology III : Toila, Estonia, January 14-19, 2019 : [proceedings] 2019 / p. 61-62 : ill
https://www.ester.ee/record=b5183874*est

Additive manufacturing of electrical machines - towards the industrial use of a novel technology

Vaimann, Toomas; **Kallaste, Ants** Energies 2023 / art. 544 <https://doi.org/10.3390/en16010544> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Additive manufacturing of prototype axial flux switched reluctance electrical machine

Tiismus, Hans; **Kallaste, Ants**; Belahcen, Anouar; **Vaimann, Toomas**; **Rassõlkin, Anton** 2021 28th International Workshop on Electric Drives : Improving Reliability of Electric Drives (IWED) 2021 / 4 p. : ill <https://doi.org/10.1109/IWED52055.2021.9376337>

Additively manufactured and topology optimized heatsink for a propulsion motor

Sarap, Martin; **Kallaste, Ants**; **Vaimann, Toomas**; **Ghahfarokhi, Payam Shams** 2024 International Conference on Electrical Machines (ICEM) 2024 / 6 p <https://doi.org/10.1109/ICEM60801.2024.10700108>

Adjusted electrical equivalent circuit model of induction motor with broken rotor bars

Rassõlkin, Anton; **Vaimann, Toomas**; **Belahcen, Anouar**; **Kallaste, Ants**; Petrov, Aleksei; Plokhov, Igor; Kotelnikov, Aleksandr PQ2016 : the 10th International Conference 2016 Electric Power Quality and Supply Reliability Conference (PQ) : August 29-31, 2016, Tallinn, Estonia : proceedings 2016 / p. 213-218 : ill <https://doi.org/10.1109/PQ.2016.7724115>

Adjusted electrical equivalent circuit model of induction motor with broken rotor bars and eccentricity faults

Petrov, Aleksei; Plokhov, Igor; **Rassõlkin, Anton**; **Vaimann, Toomas**; **Kallaste, Ants**; **Belahcen, Anouar** Proceeding of the 2017 IEEE 11th International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives (SDEMPED) : [Tinos (Greece), August 29 - September 01, 2017] 2017 / p. 58-64 : ill <https://doi.org/10.1109/DEMPED.2017.8062334>

An advanced diagnostic approach for broken rotor bar detection and classification in DTC controlled induction motors by leveraging dynamic SHAP interaction feature selection (DSHAP-IFS) GBDT methodology

Khan, Muhammad Amir; **Asad, Bilal**; **Vaimann, Toomas**; **Kallaste, Ants** Machines 2024 / art. 495
<https://doi.org/10.3390/machines12070495> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Aeglasekäiguline otsetoimeline püsimagnetgeneraator tuuleagregaatidele

Kallaste, Ants; **Vaimann, Toomas**; **Pabut, Ott** Taastuvate energiaallikate uurimine ja kasutamine : neljateistkümnenda konverentsi kogumik = Investigation and Usage of Renewable Energy Sources : fourteenth conference proceedings : [8. nov. 2012, Tartu] 2012 / lk. 68-77 : ill

Air-gap eccentricity analysis of slow-speed slotless permanent magnet synchronous generator

Kangro, Rait; **Kallaste, Ants**; **Vaimann, Toomas**; **Belahcen, Anouar** PQ2014 : the 9th International 2014 Electric Power Quality and Supply Reliability Conference (PQ) : June 11-13, 2014, Rakvere, Estonia : proceedings 2014 / p. 225-228 : ill

Analysis of a slow-speed slotless permanent magnet synchronous generator

Tuttelberg, Kaur; **Vaimann, Toomas**; **Kallaste, Ants** 4th International Youth Conference on Energy 2013 : [proceedings] 2013 / p. 1-5 : ill

Analysis of advanced passive heatsinks for electrical machines enabled by additive manufacturing

Sarap, Martin; Kallaste, Ants; Ghahfarokhi, Payam Shams; Vaimann, Toomas 2023 IEEE Workshop on Electrical Machines Design, Control and Diagnosis (WEMDCD) : proceedings 2023 / 6 p. : ill <https://doi.org/10.1109/WEMDCD55819.2023.10110940>

Analysis of common mode and rapidly varying voltage profile on stator current harmonics of an inverter-fed induction motor

Sardar, Muhammad Usman; Vaimann, Toomas; Kütt, Lauri; Kallaste, Ants; Asad, Bilal; Kudelina, Karolina; Akbar, Siddique 2023 IEEE 64th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), Riga, Latvia, October 9-10, 2023 : conference proceedings 2023 / 6 p. : ill <https://doi.org/10.1109/RTUCON60080.2023.10413067>

Analysis of mechanical vibrations caused by eccentricity in a slow-speed slotless permanent magnet generator

Tiirats, Tauno; Pabut, Ott; Kallaste, Ants; Herranen, Henrik; Naar, Hendrik; Vaimann, Toomas PQ2014 : the 9th International 2014 Electric Power Quality and Supply Reliability Conference (PQ) : June 11-13, 2014, Rakvere, Estonia : proceedings 2014 / p. 237-241 : ill

Analysis of off-grid power supply for sparsely populated areas

Vaimann, Toomas; Janson, Kuno; Bolgov, Viktor; Kallaste, Ants 14th International Scientific Conference Electric Power Engineering 2013 : EPE 2013 : [proceedings] 2013 / p. 175-179 : ill

Analysis of the eccentricity in a low-speed slotless permanent-magnet wind generator

Kallaste, Ants; Belahcen, Anouar; Kilk, Aleksander; Vaimann, Toomas PQ2012 : 8th International Conference : 2012 Electric Power Quality and Supply Reliability : June 11-13, 2012, Tartu, Estonia : conference proceedings 2012 / p. 47-52 : ill <https://ieeexplore.ieee.org/document/6256199>

Analysis of the local and global forces acting on the coil structure of a modular slotless permanent magnet generator

Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar; Shams Ghahfarokhi, Payam; Rassõlkin, Anton Scientific Journal of Riga Technical University. Electrical, control and communication engineering 2019 / p. 9-14 : ill <https://doi.org/10.2478/ecce-2019-0002>

Analytical modelling of synchronous reluctance motor including non-linear magnetic condition

Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton IET electric power applications 2022 / p. 511-524 <https://doi.org/10.1049/elp2.12172> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Analytical thermal model and flow network analysis suitable for open self-ventilated machines

Shams Ghahfarokhi, Payam; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas IET Electric Power Applications 2020 / p. 929-936 : ill <https://doi.org/10.1049/iet-epa.2019.1020> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Application of active thermography for the study of losses in components produced by laser powder Bed fusion

Quercio, Michele; Poskovic, Emir; Franchini, Fausto; Fracchia, Elisa; Ferraris, Luca; Canova, Aldo; Tenconi, Alberto; Tiismus, Hans; Kallaste, Ants Journal of magnetism and magnetic materials 2024 / art. 171796 <https://doi.org/10.1016/j.jmmm.2024.171796> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Artificial intelligence in monitoring and diagnostics of electrical energy conversion systems

Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Pomarnacki, Raimondas; Belahcen, Anouar; Van Khang, Hyunh 2020 27th International Workshop on Electric Drives: MPEI Department of Electric Drives 90th Anniversary (IWED), Moscow, Russia, January 27-30, 2020 2020 / 4 p <https://doi.org/10.1109/IWED48848.2020.9069566>

Axial synchronous magnetic coupling modeling and printing with selective laser melting

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton; Belahcen, Anouar 2019 IEEE 60th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), 7-9 October 2019 : conference proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/RTUCON48111.2019.8982344>

Axially asymmetric design for additive manufacturing of synchronous reluctance machines

Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton 2023 IEEE International Conference on Electric Machines and Drives (IEMDC) 2023 / 5 p <https://doi.org/10.1109/IEMDC55163.2023.10238995>

Bearing fault analysis of BLDC motor for electric scooter application

Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Rassõlkin, Anton; Kallaste, Ants; Lukichev, Dmitry Designs 2020 / art. 42, 18 p. : ill <https://doi.org/10.3390/designs4040042> [Journal metrics at Scopus](#) [Article at Scopus](#)

Bearing fault analysis of BLDC motor intended for electric scooter application

Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants 2021 IEEE 13th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED) 2021 / p. 427-432 <https://doi.org/10.1109/SDEMPED51010.2021.9605519>

The bearing faults detection methods for electrical machines — the state of the art

Khan, Muhammad Amir; **Asad, Bilal; Kudelina, Karolina; Vaimann, Toomas; Kallaste, Ants** Energies 2023 / art. 296
<https://doi.org/10.3390/en16010296> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Broken rotor bar fault detection of the grid and inverter-fed induction motor by effective attenuation of the fundamental component

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Iqbal, Muhammad Naveed IET electric power applications 2019 / p. 2005–2014 <https://doi.org/10.1049/iet-epa.2019.0350> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Broken rotor bar fault diagnostic of inverter fed induction motor using FFT, Hilbert and Park's vector approach

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants 2018 XIII International Conference on Electrical Machines (ICEM 2018) : Alexandroupoli, Greece, 3-6 September 2018 2018 / p. 2352-2358 : ill <https://doi.org/10.1109/ICELMACH.2018.8506957>

Calculation of the traction effort of ISEAUTO self-driving vehicle

Rassõlkin, Anton; Gevorkov, Levon; Vaimann, Toomas; Kallaste, Ants; Sell, Raivo 2018 25th International Workshop on Electric Drives: Optimization in Control of Electric Drives (IWED) 2018 / p. 1-5 : ill <https://doi.org/10.1109/IWED.2018.8321397>

Challenges of additive manufacturing of electrical machines

Tiismus, Hans; Kallaste, Ants; Belahcen, Anouar; Rassõlkin, Anton; Vaimann, Toomas 2019 IEEE 12th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED), 27-30 Aug. 2019, Toulouse, France : proceedings 2019 / p. 44-48 : ill <https://doi.org/10.1109/DEMPED.2019.8864850>

Changing of magnetic flux density distribution in a squirrel-cage induction motor with broken rotor bars

Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants Elektronika ir elektrotehnika = Electronics and electrical engineering 2014 / p. 11-14 : ill <https://doi.org/10.5755/j01.eee.20.7.8018> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Characterization of high-frequency impedance-based models for transient terminal overvoltage estimation in cable-fed motor drive systems

Sardar, Muhammad Usman; Vaimann, Toomas; Kütt, Lauri; Asad, Bilal; Kallaste, Ants; Kudelina, Karolina 2024 International Conference on Electrical Machines (ICEM) 2024 / 7 p <https://doi.org/10.1109/ICEM60801.2024.10700495>

Charge Diagnostics and State Estimation of Battery Energy Storage Systems Through Transformer Models

Zequera, Rolando Antonio Gilbert; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants IEEE Access 2025 / p. 17733–17744 : ill <https://doi.org/10.1109/ACCESS.2025.3532858>

Clustering and outlier analysis for key performance indicators in battery energy storage systems applications

Zequera, Rolando Antonio Gilbert; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2023 IEEE 17th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2023 / 6 p <https://doi.org/10.1109/CPE-POWERENG58103.2023.10227417>

Comparative analysis of wind generator energy efficiency based on machine design

Kallaste, Ants; Vaimann, Toomas; Kilk, Aleksander; Belahcen, Anouar 2014 55th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON) : proceedings 2014 / p. 9-12 : ill

Comparative Study of Advanced Heatsink Structures for Improved Thermal Performance in Axial Flux Motors

Sarap, Martin; Singh, Shalini; Kallaste, Ants; Qureshi, Ahmed Jawad; Tiismus, Hans; Vaimann, Toomas; Ghahfarokhi, Payam Shams IEEE Access 2025 / p. 100850-100860 <https://doi.org/10.1109/ACCESS.2025.3577289>

Comparative study of field-oriented control model in application for induction and synchronous reluctance motors for life-cycle analysis

Autsou, Siarhei; Saroka, Viktor; Karpovich, Dzmitry; Rassõlkin, Anton; Gevorkov, Levon; Vaimann, Toomas; Kallaste, Ants; Belahcen, Anouar; Rassõlkin, Anton 2018 25th International Workshop on Electric Drives: Optimization in Control of Electric Drives (IWED) 2018 / p. 1-5 : ill <https://doi.org/10.1109/IWED.2018.8321371>

Comparative study of slow-speed slotless synchronous generator using SmCo and NdFeB permanent magnets

Korn, Norman; Vaimann, Toomas; Kallaste, Ants; Belahcen, Anouar PQ2014 : the 9th International 2014 Electric Power Quality and Supply Reliability Conference (PQ) : June 11-13, 2014, Rakvere, Estonia : proceedings 2014 / p. 247-250 : ill

Comparison of synchronous reluctance machine and permanent magnet-assisted synchronous reluctance machine performance characteristics

Heidari, Hamidreza; Andriushchenko, Ekaterina; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas; Demidova, Galina 2020 27th International Workshop on Electric Drives: MPEI Department of Electric Drives 90th Anniversary (IWED), Moscow, Russia, January 27-30, 2020 2020 / 5 p. : ill <https://doi.org/10.1109/IWED48848.2020.9069583>

A comparison of the vector control of synchronous reluctance motor and permanent magnet-assisted synchronous

reluctance motor

Heidari, Hamidreza; Rassölkin, Anton; Kallaste, Ants; Vaimann, Toomas; Andriushchenko, Ekaterina; Belahcen, Anouar; Razzaghi, Arash 2021 XVIII International Scientific Technical Conference Alternating Current Electric Drives (ACED) : proceedings 2021 / 6 p. : ill <https://doi.org/10.1109/ACED50605.2021.9462265>

Components selection of local power supply system for sparsley populated areas

Kallaste, Ants; Vaimann, Toomas; Janson, Kuno; Bolgov, Viktor 14th International Scientific Conference Electric Power Engineering 2013 : EPE 2013 : [proceedings] 2013 / p. 181-186 : ill

Comprehensive Diagnostic Assessment of Inverter Failures in a Utility-Scale Solar Power Plant : A Case Study Based on Field and Laboratory Validation

Kull, Karl; Asad, Bilal; Naseer, Muhammad Usman; Kallaste, Ants; Vaimann, Toomas Sensors 2025 / art. 3717 <https://doi.org/10.3390/s25123717>

Concept of the test Bench for electrical vehicle propulsion drive data acquisition

Rassölkin, Anton; Rjabtšikov, Viktor; Vaimann, Toomas; Kallaste, Ants; Kuts, Vladimir 2020 XI International Conference on Electrical Power Drive Systems (ICEPDS), Saint-Petersburg, Russia, October 4-7, 2020 2020 / p. 35-42 : ill <https://doi.org/10.1109/ICEPDS47235.2020.9249078>

Concepts of additively manufactured electrical machines and components

Vaimann, Toomas; Tiismus, Hans; Kallaste, Ants 2023 23rd International Scientific Conference on Electric Power Engineering (EPE) 2023 / 6 p <https://doi.org/10.1109/EPE58302.2023.10149252>

Conceptual modelling of an EV-permanent magnet synchronous motor digital twin

Mohamed, Mahmoud Ibrahim Hassanin; Rjabtšikov, Viktor; Jegorov, Sergei; Rassölkin, Anton; Vaimann, Toomas; Kallaste, Ants 2022 IEEE 20th International Power Electronics and Motion Control Conference (PEMC) : Brasov, Romania, 25-28 Sept. 2022 : proceedings 2022 / p. 156-160 <https://doi.org/10.1109/PEMC51159.2022.9962943>

Condition monitoring and fault detection for electrical machines using IOT

Raja, Hadi Ashraf; Vaimann, Toomas; Rassölkin, Anton; Kallaste, Ants Proceedings of the Future Technologies Conference (FTC) 2022. Volume 2 2023 / p. 162-173 https://doi.org/10.1007/978-3-031-18458-1_12 [Conference proceedings at Scopus](#) [Article at Scopus](#)

Condition monitoring of a Cartesian robot with a mechanically damaged gear to create a fuzzy logic control and diagnosis algorithm

Autsou, Siarhei; Kudelina, Karolina; Vaimann, Toomas; Rassölkin, Anton; Kallaste, Ants Applied sciences 2024 / art. 4241 <https://doi.org/10.3390/app14104241>

Condition monitoring of electrical machines

Vaimann, Toomas; Kallaste, Ants 11th International Symposium "Topical Problems in the Field of Electrical and Power Engineering." Doctoral School of Energy and Geotechnology II : Pärnu, Estonia, January 16-21, 2012 2012 / p. 209-212 : ill

Control challenges of 3D printed switched reluctance motor

Rassölkin, Anton; Kallaste, Ants; Vaimann, Toomas; Tiismus, Hans 2019 26th International Workshop on Electric Drives : Improvement in Efficiency of Electric Drives (IWED) : Moscow Power Engineering Institute, Moscow, Russia 30th of January - 02nd of February 2019 : proceedings 2019 / 5 p. : ill <https://doi.org/10.1109/IWED.2019.8664282>

Corrections to “Opportunities and Challenges of Utilizing Additive Manufacturing Approaches in Thermal Management of Electrical Machines”

Ghahfarokhi, Payam Shams; Podgornovs, Andrejs; Kallaste, Ants; Marques Cardoso, Antonio J.; Belahcen, Anouar; Vaimann, Toomas; Tiismus, Hans; Asad, Bilal IEEE Access 2021 / p. 62532 <https://doi.org/10.1109/ACCESS.2021.3074827> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Cost efficiency analysis of slow-speed slotless permanent magnet synchronous generator using different magnetic materials

Laurit, Sten; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar PQ2014 : the 9th International 2014 Electric Power Quality and Supply Reliability Conference (PQ) : June 11-13, 2014, Rakvere, Estonia : proceedings 2014 / p. 221-224 : ill

Cost-efficient real-time condition monitoring and fault diagnostics system for BLDC motor using IoT and Machine learning

Raja, Hadi Ashraf; Raval, Hardik; Vaimann, Toomas; Kallaste, Ants; Rassölkin, Anton; Belahcen, Anouar Diagnostika '22 : 2022 International Conference on Diagnostics in Electrical Engineering : conference proceedings 2022 / 4 p. <https://doi.org/10.1109/Diagnostika55131.2022.9905102>

A current spectrum-based algorithm for fault detection of electrical machines using low-power data acquisition devices

Asad, Bilal; Raja, Hadi Ashraf; Vaimann, Toomas; Kallaste, Ants; Pomarnacki, Raimondas; Hyunh, Van Khang Electronics 2023 / art. 1746 <https://doi.org/10.3390/electronics12071746> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Curved Airgap Topology : A Promising Strategy for Enhancing Axial-Flux Machine Performance Metrics

Naseer, Muhammad Usman; Kallaste, Ants; Vaimann, Toomas; Asad, Bilal International Conference on the Computation of Electromagnetic Fields (COMPUMAG) 2025

Custom simplified machine learning algorithms for fault diagnosis in electrical machines

Raja, Hadi Ashraf; Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Rassõlkin, Anton; Belahcen, Anouar Diagnostika '22 : 2022 International Conference on Diagnostics in Electrical Engineering : Conference proceedings 2022 / 4 p.
<https://doi.org/10.1109/Diagnostika55131.2022.9905174>

Data science-based techniques for modelling and diagnostics of battery cells based on end-of-life criteria

Zequera, Rolando Antonio Gilbert; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2023 International Conference on Electrical Drives and Power Electronics (EDPE) 2023 / 6 p <https://doi.org/10.1109/EDPE58625.2023.10274007>

Deep Learning methodology for charging management applications in battery cells based on Neural Networks

Zequera, Rolando Antonio Gilbert; Rjabtšikov, Viktor; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants IEEE Transactions on Intelligent Vehicles 2025 / p. 668-682 <https://doi.org/10.1109/TIV.2024.3417216>

Demagnetization in permanent magnet slotless generator using Halbach array

Kallaste, Ants; Kilk, Aleksander; Belahcen, Anouar; Vaimann, Toomas; Janson, Kuno Proceedings of the 13th International Scientific Conference Electric Power Engineering 2012 : EPE 2012 : Brno. Vol. 2 2012 / p. 1053-1057 : ill
https://www.researchgate.net/publication/262674411_Demagnetization_in_Permanent_Magnet_Slotless_Generator_Using_Halbach_Array

Demagnetization on permanent magnet machine with Halbach array

Kallaste, Ants; Belahcen, Anouar; Kilk, Aleksander 13th International Symposium "Topical Problems in the Field of Electrical and Power Engineering." Doctoral School of Energy and Geotechnology II : Pärnu, Estonia, January 14-19, 2013 2013 / p. 81-84 : ill

Design and performance of laser additively manufactured core induction motor

Tiismus, Hans; Kallaste, Ants; Naseer, Muhammad Usman; Vaimann, Toomas; Rassõlkin, Anton IEEE Access 2022 / p. 50137-50152 <https://doi.org/10.1109/ACCESS.2022.3173317> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Design and prototyping of directly driven outer rotor permanent magnet generator for small scale wind turbines [Online resource]

Vaimann, Toomas; Kudrjavitsev, Oleg; Kilk, Aleksander; Kallaste, Ants; Rassõlkin, Anton Advances in electrical and electronic engineering 2018 / p. 271-278 : ill <https://doi.org/10.15598/aeet.v16i3.2698> [Journal metrics at Scopus](#) [Article at Scopus](#)

Design and resonance analysis of tubular structured dual stator linear oscillating actuator

Ahmad, Zahoor; Kallaste, Ants; Vaimann, Toomas; Sardar, Muhammad Usman 2024 International Conference on Electrical Machines (ICEM) 2024 / 7 p <https://doi.org/10.1109/ICEM60801.2024.10700213>

Design of a research laboratory drive system for a synchronous reluctance motor for vector control and performance analysis

Heidari, Hamidreza; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas; Andriushchenko, Ekaterina; Belahcen, Anouar Inventions 2021 / art. 64, 21 p. : ill <https://doi.org/10.3390/inventions6040064> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Design of an additively manufactured polymer composite electrical machine

Sarap, Martin; Kallaste, Ants; Naseer, Muhammad Usman; Tiismus, Hans; Rjabtšikov, Viktor; Ghahfarokhi, Payam Shams; Vaimann, Toomas; Aman, Alexander; Kutia, Mykhailo 2023 IEEE 17th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2023 / 5 p <https://doi.org/10.1109/CPE-POWERENG58103.2023.10227413>

Design of an additively manufactured thermal solution for an axial flux switched reluctance motor

Sarap, Martin; Singh, Shalini; **Kallaste, Ants;** Jawad Qureshi, Ahmed Jawad; **Tiismus, Hans; Vaimann, Toomas;** Shams Ghahfarokhi, Payam Case studies in thermal engineering 2025 / art. 105805 <https://doi.org/10.1016/j.csite.2025.105805>

Design of permanent magnet assisted synchronous reluctance machine

Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar Proceedings : 2014 15th International Scientific Conference on Electric Power Engineering (EPE) 2014 / p. 579-582 : ill

Design of renewable micro generation monitoring and control application

Lehtla, Madis; Kõivastik, Ivar; Möller, Taavi; Kallaste, Ants; Rosin, Argo PQ2010 : 7th International Conference "2010 Electric Power Quality and Supply Reliability" : June 16-18, 2010, Kuressaare, Estonia 2010 / p. 105-110 : ill

Design of rotors for synchronous reluctance motor : analytical treatment and optimization

Orlova, Svetlana; Pugachov, Vladislav; **Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas** 2019 21st European Conference on Power Electronics and Applications (EPE '19 ECCE Europe), 3-5 Sept. 2019, Genova, Italy : proceedings 2019 / 9 p. : ill <https://doi.org/10.23919/EPE.2019.8914760>

Design of slow-speed slotless SmCo permanent magnet synchronous generator for wind applications

Vaimann, Toomas; Kallaste, Ants; Korn, Norman; Laurit, Sten; Belahcen, Anouar Proceedings : 2014 15th International Scientific Conference on Electric Power Engineering (EPE) 2014 / p. 339-342 : ill

Design optimization methods of additively manufactured Switched Reluctance Motor = Kihtlisandustehnoloogia abil toodetud samm-mootori optimeerimise meetodid

Andriushchenko, Ekaterina 2023 <https://doi.org/10.23658/taltech.16/2023> <https://digikogu.taltech.ee/et/Item/382b9eea-7bd1-4140-b124-9f0b580e81bc> https://www.ester.ee/record=b5558664*est

Design optimization of permanent magnet clutch

Andriushchenko, Ekaterina; Kallaste, Ants; Belahcen, Anouar; Heidari, Hamidreza; Vaimann, Toomas; Rassõlkin, Anton 2020 International Conference on Electrical Machines (ICEM), 23-26 August 2020, Gothenburg, Sweden : online : proceedings 2020 / p. 436-440 <https://doi.org/10.1109/ICEM49940.2020.9270726>

Design optimization of permanent magnet clutch with Ārtap framework

Andriushchenko, Ekaterina; Kaska, Jan; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas; Rassõlkin, Anton Periodica polytechnica electrical engineering and computer science 2021 / p. 106-112 <https://doi.org/10.3311/PPee.17007> [Journal metrics at Scopus](#) [Article at Scopus](#)

Design procedure and preliminary analysis for the introduction of axial asymmetry in the synchronous reluctance machines

Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton 2023 IEEE Workshop on Electrical Machines Design, Control and Diagnosis (WEMDCD) : proceedings 2023 / 6 p. : ill <https://doi.org/10.1109/WEMDCD55819.2023.10110903>

Detection of broken rotor bars in three-phase squirrel-cage induction motor using fast Fourier transform

Vaimann, Toomas; Kallaste, Ants 10th International Symposium "Topical Problems in the Field of Electrical and Power Engineering". Doctoral School of Energy and Geotechnology II : Pärnu, Estonia, January 10-15, 2011 2011 / p. 52-56 : ill

Determination of forced convection coefficient over a flat side of coil

Ghahfarokhi, Payam Shams; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton; Belahcen, Anouar 2017 IEEE 58th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON) : proceedings : Latvia, Riga, 12-13 October, 2017 2017 / [4] p. : ill <https://doi.org/10.1109/RTUCON.2017.8124759>

Determination of heat transfer coefficient for the air forced cooling over a flat side of coil

Ghahfarokhi, Payam Shams; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas Scientific Journal of Riga Technical University. Electrical, control and communication engineering 2019 / p. 15-20 : ill <https://doi.org/10.2478/ecce-2019-0003>

Determination of heat transfer coefficient from housing surface of a totally enclosed fan-cooled machine during passive cooling

Shams Ghahfarokhi, Payam; Podgornovs, Andrejs; Kallaste, Ants; Cardoso, Antonio J. Marques; Belahcen, Anouar; Vaimann, Toomas; Asad, Bilal; Tiismus, Hans Machines 2021 / art. 120 <https://doi.org/10.3390/machines9060120> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Determination of heat transfer coefficient of finned housing of a TEFC variable speed motor

Shams Ghahfarokhi, Payam; Kallaste, Ants; Podgornovs, Andrejs; Belahcen, Anouar; Vaimann, Toomas; Asad, Bilal Electrical Engineering 2021 / p. 1009-1017 : ill <https://doi.org/10.1007/s00202-020-01132-1> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Determination of natural convection heat transfer coefficient over the fin side of a coil system

Shams Ghahfarokhi, Payam; Belahcen, Anouar; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton International journal of heat and mass transfer 2018 / p. 677-682 : ill <https://doi.org/10.1016/j.ijheatmasstransfer.2018.05.071> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Determination of thermal convection coefficient from coil's flat plate side

Ghahfarokhi, Payam Shams; Kallaste, Ants; Belahcen, Anouar 16th International Symposium "Topical Problems in the Field of Electrical and Power Engineering. Doctoral School of Energy and Geotechnology III" : Pärnu, Estonia, January 16-21, 2017 2017 / p. 130-132 : ill http://www.ester.ee/record=b4650094*est

Determining the thermal conductivity of additively manufactured metal specimens

Sarap, Martin; Kallaste, Ants; Ghahfarokhi, Payam Shams; Tiismus, Hans; Vaimann, Toomas 2022 29th International Workshop on Electric Drives: Advances in Power Electronics for Electric Drives (IWED) 2022 / 4 p <https://doi.org/10.1109/IWED54598.2022.9722591>

Development and utilization of synthetic signals for fault diagnostics of electrical machines

Raja, Hadi Ashraf; Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants IEEE journal of emerging and selected topics in industrial electronics 2024 / 9 p <https://doi.org/10.1109/JESTIE.2024.3395650>

Development of an axial flux SRM through additive manufacturing

Hussain, Shahid; Kallaste, Ants; Naseer, Muhammad Usman; Tiismus, Hans; Vaimann, Toomas 2024 International Conference on Electrical Machines (ICEM) 2024 / 6 p <https://doi.org/10.1109/ICEM60801.2024.10700569>

Development of analytical thermal analysis tool for synchronous reluctance motors

Shams Ghahfarokhi, Payam; Kallaste, Ants; Podgornovs, Andrejs; Belahcen, Anouar; Vaimann, Toomas IET electric power applications 2020 / p. 1828-1836 <https://doi.org/10.1049/iet-epa.2020.0237> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Development of thermal analysis tools for synchronous reluctance motors = Soojusanalüüsi töövahendi väljaarendus sünkroon-reluktantsmootorile

Shams Ghahfarokhi, Payam 2019 <https://digi.lib.ttu.ee/li/?12288> https://www.ester.ee/record=b5233445*est

Diagnostic possibilities of induction motor bearing currents

Kudelina, Karolina; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Demidova, Galina; Karpovich, Dzmityr 2021 XVIII International Scientific Technical Conference Alternating Current Electric Drives (ACED) : proceedings 2021 / 5 p. : ill <https://doi.org/10.1109/ACED50605.2021.9462298>

Digital Twin as a virtual sensor for wind turbine applications

Mohamed, Mahmoud Ibrahim Hassanin; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants; Zakis, Janis; Hyunh, Van Khang; Pomarnacki, Raimondas Energies 2023 / art. 6246 <https://doi.org/10.3390/en16176246> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Digital twin for propulsion drive of autonomous electric vehicle

Rassõlkin, Anton; Kuts, Vladimir; Kallaste, Ants; Vaimann, Toomas 2019 IEEE 60th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), 7-9 October 2019 : conference proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/RTUCON48111.2019.8982326>

Digital twin of an electrical motor based on empirical performance model

Rassõlkin, Anton; Rjabtšikov, Viktor; Vaimann, Toomas; Kallaste, Ants; Kuts, Vladimir; Partyshev, Andriy 2020 XI International Conference on Electrical Power Drive Systems (ICEPDS), Saint-Petersburg, Russia, October 4-7, 2020 2020 / p. 11-14 : ill <https://doi.org/10.1109/ICEPDS47235.2020.9249366>

Digital twin of wind generator for modelling various turbine characteristics

Raja, Hadi Ashraf; Autsou, Siarhei; Kudelina, Karolina; Rjabtšikov, Viktor; Vaimann, Toomas; Kallaste, Ants; Pomarnacki, Raimondas; Hyunh, Van Khang 2023 International Conference on Electrical Drives and Power Electronics (EDPE) 2023 / p. 1-5 <https://doi.org/10.1109/EDPE58625.2023.10274050>

Digital twin of wind generator to simulate different turbine characteristics using IoT

Raja, Hadi Ashraf; Kudelina, Karolina; Rjabtšikov, Viktor; Vaimann, Toomas; Kallaste, Ants; Pomarnacki, Raimondas; Hyunh, Van Khang Proceedings of the Future Technologies Conference (FTC) 2023. Vol. 1 2023 / p. 123-132 https://doi.org/10.1007/978-3-031-47454-5_9 [Conference proceedings at Scopus](#) [Article at Scopus](#)

Digital twin service unit development for an EV induction motor fault detection

Rjabtšikov, Viktor; Mohamed, Mahmoud Ibrahim Hassanin; Asad, Bilal; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants; Kuts, Vladimir; Stepień, Mariusz; Krawczyk, Mateusz 2023 IEEE International Conference on Electric Machines and Drives (IEMDC) 2023 / 5 p <https://doi.org/10.1109/IEMDC55163.2023.10239085>

Digital Twin service unit for AC motor stator inter-turn short circuit fault detection

Rjabtšikov, Viktor; Rassõlkin, Anton; Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Kuts, Vladimir; Jegorov, Sergei; Stepień, Mariusz; Krawczyk, Mateusz 2021 28th International Workshop on Electric Drives : Improving Reliability of Electric Drives (IWED) 2021 <https://doi.org/10.1109/IWED52055.2021.9376328>

Direct conductor cooling of outer-rotor machine enabled by additive manufacturing

Sarap, Martin; Kallaste, Ants; Ghahfarokhi, Payam Shams; Tiismus, Hans; Vaimann, Toomas 2023 IEEE International Conference on Electric Machines and Drives (IEMDC) 2023 / 4 p <https://doi.org/10.1109/IEMDC55163.2023.10238858>

Direct liquid cooling in low-power electrical machines : proof-of-concept

Lindh, Pia; Petrov, Ilya; Semken, R. Scott; Vaimann, Toomas; Kallaste, Ants IEEE transactions on energy conversion 2016 / p. 1257-1266 : ill <https://doi.org/10.1109/TEC.2016.2597059> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Dynamic control system for electric motor drive testing on the test bench

Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas 2015 9th International Conference on Compatibility and Power Electronics (CPE) : proceedings : Faculty of Science and Technology (FCT), Caparica, Lisbon, Portugal, 24-26 June, 2015 2015 / p. 252-257 : ill <http://dx.doi.org/10.1109/CPE.2015.7231082>

Dynamic modeling of the demagnetization in Halbach array permanent magnet machines

Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas COMPUMAG 2013 : [proceedings] 2013 / p. 1-2 : ill

Eddy current loss reduction prospects in laser additively manufactured soft magnetic cores

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton 2022 International Conference on Electrical Machines (ICEM) 2022 / p. 1511-1516 <https://doi.org/10.1109/ICEM51905.2022.9910679>

The effect of build direction on the thermal conductivity of additively manufactured AIS10Mg and silicon-steel samples

Sarap, Martin; Kallaste, Ants; Shams Ghahfarokhi, Payam; Tiismus, Hans; Vaimann, Toomas 2022 International Conference on Electrical Machines (ICEM) 2022 / p. 538-543 <https://doi.org/10.1109/ICEM51905.2022.9910944>

Effect of PM parameters variability on the operation quantities of a wind generator

Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas 2015 IEEE Workshop on Electrical Machines Design, Control and Diagnosis (WEMDCD) : proceedings : Castello del Valentino, Torino, Italy, 26-27 March, 2015 2015 / p. 242-247 : ill <http://dx.doi.org/10.1109/WEMDCD.2015.7194536>

Efficiency map comparison of induction and synchronous reluctance motors

Rassõlkin, Anton; Heidari, Hamidreza; Kallaste, Ants; Vaimann, Toomas; Acedo, Jaime Pando; Romero-Cadaval, Enrique 2019 26th International Workshop on Electric Drives : Improvement in Efficiency of Electric Drives (IWED) : Moscow Power Engineering Institute, Moscow, Russia, 30th of January – 2nd of February 2019 : proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/IWED.2019.8664334>

Electric drive for throttle control of centrifugal pump system

Gevorkov, Levon; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas 59th Annual International Scientific Conference on Power and Electrical Engineering : November 12, 13, 2018, Riga Technical University (RTUCON) : conference proceedings 2018 / 5 p. : ill <https://doi.org/10.1109/RTUCON.2018.8659845>

Electrical and thermal anisotropy in additively manufactured AISi10Mg and Fe-Si samples

Sarap, Martin; Tiismus, Hans; Kallaste, Ants; Saarna, Mart; Kolnes, Märt; Shams Ghahfarokhi, Payam; Vaimann, Toomas Machines 2025 / art. 1 <https://doi.org/10.3390/machines13010001>

Electrical resistivity of additively manufactured silicon steel for electrical machine fabrication

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton; Belahcen, Anouar 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärda, Estonia, June 12-15, 2019 : proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/PQ.2019.8818252>

Elektrimasinate alused

Janson, Kuno; Kallaste, Ants 2017 http://www.ester.ee/record=b4694078*est <https://digikogu.taltech.ee/et/Item/eb44ad2b-8758-41cd-9483-f8fdb1d40a1c>

Elektrimootorite 3D-printimine ei ole ulme

Vaimann, Toomas; Kallaste, Ants Director. Inseneeria 2021 / lk. 74-78 : fot <https://director.ee/2021/02/03/elektrimootorite-3d-printimine-ei-ole-ulme/> http://www.ester.ee/record=b2336521*est

Energeetika - otsapidi üksnes taastuvenergia küljes

Janson, Kuno; Kallaste, Ants; Bolgov, Viktor Horisont 2013 / lk. 30-36 : ill https://artiklid.elnet.ee/record=b2606466*est

Energeetika otsapidi tuule küljes

Janson, Kuno; Kallaste, Ants Horisont 2012 / lk. 8-14 : ill https://artiklid.elnet.ee/record=b2545789*est

Environmental and life cycle cost analysis of a synchronous reluctance machine [Online resource]

Rassõlkin, Anton; Orlova, Svetlana; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants 2016 57th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON) : October 13, 14, 2016 : conference proceedings 2016 / [5] p. : ill <https://doi.org/10.1109/RTUCON.2016.7763127>

Environmental considerations in lifecycle based optimization of electrical machines

Vaimann, Toomas; Kallaste, Ants; Bolgov, Viktor; Belahcen, Anouar Proceedings of the 2015 16th International Scientific Conference on Electric Power Engineering (EPE) : May 20-22, 2015, Czech Republic 2015 / p. 209-214 : ill <http://dx.doi.org/10.1109/EPE.2015.7161057>

Esimesed Eestis väljatöötatud väikese võimsusega tuulegeneraatorid : [TTÜ ja AS Volta koostöös]

Evaluation of 3D-printed magnetic materials for additively-manufactured electrical machines

Selema, Ahmed; Beretta, Margherita; Van Coppenolle, Matty; **Tiismus, Hans; Kallaste, Ants**; Ibrahim, Mohamed N.; Rombouts, Marleen; Vleugels, Jozef; Kestens, Leo A.I.; Sergeant, Peter Journal of magnetism and magnetic materials 2023 / art. 170426, 12 p. : ill <https://doi.org/10.1016/j.jmmm.2023.170426> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

EV-powertrain test bench for digital twin development

Rjabtšikov, Viktor; Mohamed, Mahmoud Ibrahim Hassanin; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2022 IEEE 20th International Power Electronics and Motion Control Conference (PEMC) : Brasov, Romania, 25-28 Sept. 2022 : proceedings 2022 / p. 559-563 : ill <https://doi.org/10.1109/PEMC51159.2022.9962879>

An EV-traction inverter data-driven modelling for digital twin development

Ibrahim, Akram Abdalla Mohammed; Raja, Hadi Ashraf; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2023 23rd International Scientific Conference on Electric Power Engineering (EPE) 2023 / 5 p. : ill <https://doi.org/10.1109/EPE58302.2023.10149230>

Experimental determination of equivalent circuit parameters for a synchronous generator

Naseer, Muhammad Usman; Asad, Bilal; Ghahfarokhi, Payam Shams; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton 2021 IEEE Open Conference of Electrical, Electronic and Information Sciences (eStream): proceedings of the conference, April 22, 2021, Vilnius, Lithuania 2021 / 7 p. : ill <https://doi.org/10.1109/eStream53087.2021.9431442>

Experimental investigation of high viscosity on oil spray cooling system with hairpin winding

Ghahfarokhi, Payam Shams; Kallaste, Ants; Podgornovs, Andrejs; Cardoso, Antonio J. Marques; Vaimann, Toomas; Sarap, Martin; Rjabtšikov, Viktor 2023 IEEE 14th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED) 2023 / p. 234-238 <https://doi.org/10.1109/SDEMPED54949.2023.10271484>

Experimental measurements and numerical modelling of additively manufactured Fe-Si cores

Stella, Marco; Faba, Antonio; Fulginei, F. Riganti; Quercio, Michele; Scorretti, Riccardo; Bertolini, Vittorio; Sabino, Luis Gustavo; **Tiismus, Hans; Kallaste, Ants**; Cardelli, Ermanno Journal of magnetism and magnetic materials 2024 / art. 171752 <https://doi.org/10.1016/j.jmmm.2024.171752> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Experimental prototype of high-efficiency wind turbine based on Magnus effect

Lukin, Aleksandr; Demidova, Galina; Lukichev, Dmitry; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar 2020 27th International Workshop on Electric Drives: MPEI Department of Electric Drives 90th Anniversary (IWED), Moscow, Russia, January 27-30, 2020 / 6 p <https://doi.org/10.1109/IWED48848.2020.9069565>

Exterior-rotor permanent magnet synchronous machine with toroidal windings for unmanned aerial vehicles

Nukki, Rene; Kilk, Aleksander; Kallaste, Ants; Vaimann, Toomas; Tiimus, Kristjan PQ2014 : the 9th International 2014 Electric Power Quality and Supply Reliability Conference (PQ) : June 11-13, 2014, Rakvere, Estonia : proceedings 2014 / p. 215-220 : ill

Fault simulation and analysis of high-voltage circuit breaker's spring charging mechanism using a universal motor model

Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Kilter, Jako; Sardar, Muhammad Usman 2024 IEEE 65th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON) 2024 / 5 p <https://doi.org/10.1109/RTUCON62997.2024.10830846>

Feasibility study of a local power supply system for sparsely populated areas in Estonia

Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Märss, Maido Agronomy research 2016 / p. 1720-1729 : ill http://www.ester.ee/record=b1787401*est [Journal metrics at Scopus](#) [Article at Scopus](#)

Flood prevention through condition monitoring of pumping stations

Gevorkov, Levon; **Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas** 2019 IEEE 60th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), 7-9 October 2019 : conference proceedings 2019 / 5 p. : ill <https://doi.org/10.1109/RTUCON48111.2019.8982305>

Fundamentals of electrical machines

Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton; Janson, Kuno 2026 https://www.routledge.com/Fundamentals-of-Electrical-Machines/Kallaste-Vaimann-Rassolkin-Janson/p/book/9781032518206?srsltid=AfmBOopOWsvE7PCg4afDRJAsSt-7MPjB1tipnsK8Yhta6i_tqjPvPr

Future trends in design of electrical machines

Kallaste, Ants 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 / p. 51-52 https://www.ester.ee/record=b5291755*est

Generative design in development of mechanical components for Magnus effect-based wind turbine

Lukin, Aleksandr; Perepelkina, Svetlana; Demidova, Galina; Lukichev, Dmitry; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2020 XI International Conference on Electrical Power Drive Systems (ICEPDS), Saint-Petersburg, Russia, October 4-7, 2020

Generative design in weight optimization of reconfigurable continuous track robot

Valme, Daniil; Kudelina, Karolina; Belolipetskaja, Diana; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2021 28th International Workshop on Electric Drives : Improving Reliability of Electric Drives (IWED) 2021 / 6 p <https://doi.org/10.1109/IWED52055.2021.9376329>

Generator mode analysis of exterior-rotor PM synchronous machine with Gramme's winding

Nukki, Rene; Kilk, Aleksander; Kallaste, Ants; Vaimann, Toomas; Tiimus, Kristjan 2015 IEEE 5th International Conference on Power Engineering, Energy and Electrical Drives (POWERENG) : proceedings : May 11-13, 2015, Riga, Latvia 2015 / p. 347-352 : ill <http://dx.doi.org/10.1109/PowerEng.2015.7266341>

Grid integration issues of PMSG-based residential wind turbines

Chub, Andrii; Jalakas, Tanel; Milczarek, Adam; Kallaste, Ants; Malinowski, Mariusz PQ2014 : the 9th International 2014 Electric Power Quality and Supply Reliability Conference (PQ) : June 11-13, 2014, Rakvere, Estonia : proceedings 2014 / p. 147-154 : ill

Hairpin windings for electric vehicle motors : modeling and investigation of AC loss-mitigating approaches

Ghahfarokhi, Payam Shams; Podgornovs, Andrejs; Cardoso, Antonio J. Marques; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas Machines 2022 / art. 1029 <https://doi.org/10.3390/machines10111029> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Hairpin windings manufacturing, design, and AC losses analysis approaches for electric vehicle motors

Ghahfarokhi, Payam Shams; Podgornovs, Andrejs; Cardoso, Antonio J. Marques; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas 2021 11th International Electric Drives Production Conference (EDPC) : 7-9 Dec. 2021 2021 / p. 1-7 <https://doi.org/10.1109/EDPC53547.2021.9684208>

Harmonic spectrum analysis of induction motor with broken rotor bar fault

Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Belahcen, Anouar 59th Annual International Scientific Conference on Power and Electrical Engineering : November 12, 13, 2018, Riga Technical University (RTUCON) : conference proceedings 2018 / 7 p. : ill <https://doi.org/10.1109/RTUCON.2018.8659842>

Harmonics distortion in inverter-fed motor-drive systems : case study

Heidari, Hamidreza; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärda, Estonia, June 12-15, 2019 : proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/PQ.2019.8818230>

Health and charge indicators for battery energy storage systems in electric vehicles applications

Zequera, Rolando Antonio Gilbert; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2022 IEEE 20th International Power Electronics and Motion Control Conference (PEMC) : Brasov, Romania, 25-28 Sept. 2022 : proceedings 2022 / p. 427-432 <https://doi.org/10.1109/PEMC51159.2022.9962858>

Heat pump induction motor faults caused by soft starter topology — case study

Kudelina, Karolina; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Huynh, Van Khang 2021 IEEE 19th International Power Electronics and Motion Control Conference, The Silesian University of Technology Gliwice, Poland, 25 - 29 April, 2021 (PEMC) : proceedings 2021 / p. 454-459 : ill <https://doi.org/10.1109/PEMC48073.2021.9432506>

High voltage circuit breaker charging motor's condition monitoring - importance, possibilities, and challenges

Asad, Bilal; Sardar, Muhammad Usman; Vaimann, Toomas; Kallaste, Ants; Asefi, Sajjad; Kilter, Jako 2024 International Conference on Diagnostics in Electrical Engineering (Diagnostika) 2024 / 7 p <https://doi.org/10.1109/Diagnostika61830.2024.10693906>

Hilbert transform, an effective replacement of Park's vector modulus for the detection of rotor faults

Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Rassõlkin, Anton; Belahcen, Anouar 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärda, Estonia, June 12-15, 2019 : proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/PQ.2019.8818227>

Hybrid FEA-Simulink modelling of permanent magnet assisted synchronous reluctance motor with unbalanced magnet flux

Pando-Acedo, Jaime; Rassõlkin, Anton; Lehtikainen, Antti; Vaimann, Toomas; Kallaste, Ants; Romero-Cadaval, Enrique; Belahcen, Anouar 2019 IEEE 12th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED), 27-30 Aug. 2019, Toulouse, France : proceedings 2019 / p. : 174-180 : ill <https://doi.org/10.1109/DEMPED.2019.8864925>

Hybrid thermal model of a synchronous reluctance machine

Shams Ghahfarokhi, Payam; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas; Rassõlkin, Anton Case studies in thermal engineering 2018 / p. 381-389 : ill <https://doi.org/10.1016/j.csite.2018.05.007> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Hysteresis loss evaluation of additively manufactured soft magnetic core

Tiismus, Hans; Kallaste, Ants; Belahcen, Anouar; Rassõlkin, Anton; Vaimann, Toomas 2020 International Conference on Electrical Machines (ICEM), 23-26 august 2020, Gothenburg, Sweden : online : proceedings 2020 / p. 1657-1661
<https://doi.org/10.1109/ICEM49940.2020.9270836>

Hysteresis measurements and numerical losses segregation of additively manufactured silicon steel for 3D printing electrical machines

Tiismus, Hans; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas; Rassõlkin, Anton; Lukichev, Dmitry Applied sciences 2020 / art. 6515, 15 p <https://doi.org/10.3390/app10186515> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Identification and characterization of modulation scheme in an EV-PMSM control strategy for digital twin modeling

Mohamed, Mahmoud Ibrahim Hassanin; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants Diagnostika 2024 - 2024 International Conference on Diagnostics in Electrical Engineering, Proceedings 2024 / 5 p
<https://doi.org/10.1109/Diagnostika61830.2024.10693927>

Impact of bearing faults on vibration level of BLDC motor

Kudelina, Karolina; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants IECON 2021 – 47th Annual Conference of the IEEE Industrial Electronics Society, 2021 2021 / p. 1-6 : ill <https://doi.org/10.1109/IECON48115.2021.9589268> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

The impact of control environments on global parameters of electrical machines in case of broken rotor bars

Kudelina, Karolina; Raja, Hadi Ashraf; Autsou, Siarhei; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants Diagnostika '22 : 2022 International Conference on Diagnostics in Electrical Engineering : Conference proceedings 2022 / 4 p.
<https://doi.org/10.1109/Diagnostika55131.2022.9905149>

The impact of load on global parameters of electrical machines in case of healthy and broken rotor bars

Kudelina, Karolina; Raja, Hadi Ashraf; Autsou, Siarhei; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Shabbir, Noman 2022 18th Biennial Baltic Electronics Conference (BEC) 2022 / 5 l. <https://doi.org/10.1109/BEC56180.2022.9935614>

Impact of wind parks on the efficiency of thermal power plants [Electronic resource]

Astapov, Victor; Šuvalova, Jelena; Vaimann, Toomas; Kallaste, Ants; Belahcen, Anouar Proceedings of the 8th International Scientific Symposium on Electrical Power Engineering ELEKTROENERGETIKA 2015 : September 16-18, 2015, Stara Lesna, Slovak Republic 2015 / p. 589-592 : ill. [CD-ROM]

Implementation and analysis of rolling bearing faults caused by shaft currents

Kudelina, Karolina; Autsou, Siarhei; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants International Workshop on Electric Drives: Optimization in Control of Electric Drives (IWED) 2022 <https://doi.org/10.1109/IWED54598.2022.9722596>

Implementation of different magnetic materials in outer rotor PM generator

Kudrjavitsev, Oleg; Kilk, Aleksander; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants 2015 IEEE 5th International Conference on Power Engineering, Energy and Electrical Drives (POWERENG) : proceedings : May 11-13, 2015, Riga, Latvia 2015 / p. 74-78 : ill <http://dx.doi.org/10.1109/PowerEng.2015.7266298>

Implementation of Digital Twins for electrical energy conversion systems in selected case studies

Rassõlkin, Anton; Orosz, Tamas; Demidova, Galina; Kuts, Vladimir; Rjabtšikov, Viktor; Vaimann, Toomas; Kallaste, Ants Proceedings of the Estonian Academy of Sciences 2021 / p. 19-39 : ill <https://doi.org/10.3176/proc.2021.1.03> https://doi.org/wp-content/plugins/kirj/pub/proc-1-2021-19-39_20210201183802.pdf [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Improved diagnostic approach for BRB detection and classification in inverter-driven induction motors employing sparse stacked autoencoder (SSAE) and lightGBM

Khan, Muhammad Amir; Asad, Bilal; Vaimann, Toomas; Kallaste, Ants Electronics (Switzerland) 2024 / art. 1292
<https://doi.org/10.3390/electronics13071292> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Improved fault classification and localization in power transmission networks using vae-generated synthetic data and machine learning algorithms

Khan, Muhammad Amir; Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Pomarnacki, Raimondas; Hyunh, Van Khang Machines 2023 / art. 963 <https://doi.org/10.3390/machines11100963> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Improving legibility of motor current spectrum for broken rotor bars fault diagnostics

Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Rassõlkin, Anton; Belahcen, Anouar; Iqbal, Muhammad Naveed Scientific Journal of Riga Technical University. Electrical, control and communication engineering 2019 / p. 1–8 : ill <https://doi.org/10.2478/ecce-2019-0001>

Induction machine fault detection using smartphone recorded audible noise

Vaimann, Toomas; Sobra, Jan; Belahcen, Anouar; Rassõlkin, Anton; Rolak, Michal; Kallaste, Ants IET science, measurement

and technology 2018 / p. 554-560 : ill <https://doi.org/10.1049/iet-smt.2017.0104> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Induction motor bearing currents - causes and damages

Kudelina, Karolina; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Asad, Bilal; Demidova, Galina 2021 28th International Workshop on Electric Drives : Improving Reliability of Electric Drives (IWED) 2021 / 5 p
<https://doi.org/10.1109/IWED52055.2021.9376354>

Influence of choice of permanent magnet electromagnetic parameters in the research of electrical devices

Ose-Zala, Baiba; Kallaste, Ants; Vaimann, Toomas PQ2016 : the 10th International Conference 2016 Electric Power Quality and Supply Reliability Conference (PQ) : August 29-31, 2016, Tallinn, Estonia : proceedings 2016 / p. 225-228 : ill
<https://doi.org/10.1109/PQ.2016.7724117>

Influence of magnet material selection on the design of slow-speed permanent magnet synchronous generators for wind applications

Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar Elektronika ir elektrotehnika = Electronics and electrical engineering 2017 / p. 31-38 : ill <https://doi.org/10.5755/j01.eie.23.1.17581> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Influence of permanent magnet characteristic variability on the wind generator operation

Kudrjavitsev, Oleg; Kallaste, Ants; Kilk, Aleksander; Vaimann, Toomas; Orlova, Svetlana Latvian journal of physics and technical sciences 2017 / p. 3-11 : ill <https://doi.org/10.1515/lpts-2017-0001> [Journal metrics at Scopus](#) [Article at Scopus](#)

Influence of slot wedge material on permanent magnet losses in a traction motor with tooth coil windings

Lindh, Pia; Vaimann, Toomas; Kallaste, Ants; Pyrhönen, Juha; Vinnikov, Dmitri; Naumanen, Ville International journal of applied electromagnetics and mechanics 2013 / p. 227-236 : ill <https://doi.org/10.3233/JAE-131659> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Initial design estimation of synchronous machines

Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton International Workshop on Electric Drives: Optimization in Control of Electric Drives (IWED) 2022 <https://doi.org/10.1109/IWED54598.2022.9722585>

Interface development for digital twin of an electric motor based on empirical performance model

Rassõlkin, Anton; Rjabtšikov, Viktor; Kuts, Vladimir; Vaimann, Toomas; Kallaste, Ants; Asad, Bilal; Partyshev, Andriy IEEE Access 2022 / p. 15635-15643 <https://doi.org/10.1109/ACCESS.2022.3148708> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Investigation of FEM software for Magnus Effect Simulation

Lukin, Aleksandr; Demidova, Galina; Lukichev, Dmitry; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2021 28th International Workshop on Electric Drives : Improving Reliability of Electric Drives (IWED) 2021 / 5 p
<https://doi.org/10.1109/IWED52055.2021.9376396>

Investigation of the forces acting on the coils of a Modular Slotless Permanent Magnet Generator

Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton; Belahcen, Anouar 21st International Conference on the Computation of Electromagnetic Fields (Compumag 2017) : Daejeon, South Korea, 18-22 June 2017 2017 / p. 707-708 : ill
[http://www.compumag.org/CMAG2017/\[PD-M3-9\]_727.pdf](http://www.compumag.org/CMAG2017/[PD-M3-9]_727.pdf)

IoT based tools for data acquisition in electrical machines and robotics

Raja, Hadi Ashraf; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Belahcen, Anouar 2021 IEEE 19th International Power Electronics and Motion Control Conference, The Silesian University of Technology Gliwice, Poland, 25 - 29 April, 2021 (PEMC) : proceedings 2021 / p. 737-742 : ill <https://doi.org/10.1109/PEMC48073.2021.9432553>

Kolmogorov-Arnold networks for algorithm design in battery energy storage system applications

Zequera, Rolando Antonio Gilbert; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants Energy Reports 2025 / p. 2664-2677
<https://doi.org/10.1016/j.egyr.2025.02.002>

Laser additively manufactured magnetic core design and process for electrical machine applications

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Lind, Liina; Virro, Indrek; Rassõlkin, Anton; Dedova, Tatjana Energies 2022 / art. 3665 <https://doi.org/10.3390/en15103665> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Life cycle analysis of electrical motor-drive system based on electrical machine type

Rassõlkin, Anton; Belahcen, Anouar; Kallaste, Ants; Vaimann, Toomas; Heidari, Hamidreza; Asad, Bilal Proceedings of the Estonian Academy of Sciences 2020 / p. 162-177 : ill <https://doi.org/10.3176/proc.2020.2.07> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Lifecycle analysis of different motors from the standpoint of environmental impact

Orlova, Svetlana; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar Latvian journal of physics and technical sciences 2016 / p. 37-46 : ill <https://doi.org/10.1515/lpts-2016-0042> [Journal metrics at Scopus](#) [Article at Scopus](#)

Lifecycle-based design and optimization of electrical motor-drives - challenges and possibilities

Vaimann, Toomas; Kallaste, Ants; Kilk, Aleksander; Belahcen, Anouar The 3rd International Conference on Electric Power and Energy Conversion Systems (EPECS 2013) : [proceedings] 2013 / p. 1-4 : ill

Load-resonant converter with changing resonant tank topology for welding applications

Šklovski, Jevgeni; Janson, Kuno; Kallaste, Ants USB proceedings : IECON 2012 - 38th Annual Conference on IEEE Industrial Electronics Society, Montreal, Canada, 25-28 October, 2012 2012 / p. 517-523 : ill <https://ieeexplore.ieee.org/document/6388771>

Low speed permanent magnet slotless generator development and implementation for windmills = Aeglasekäigulise uurdevaba püsomagnetgeneraatori väljatöötamine ja rakendamine tuulikutes

Kallaste, Ants 2013 https://www.ester.ee/record=b3000886*est

Magnetic properties of reduced Dy NdFeB permanent magnets and their usage in electrical machines

Vaimann, Toomas; Kallaste, Ants; Kilk, Aleksander; Belahcen, Anouar IEEE AFRICON 2013 : [proceedings] 2013 / p. 1124-1128 : ill <https://doi.org/10.1109/AFRCON.2013.6757787> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Main faults and diagnostic possibilities of BLDC motors

Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Lukichev, Dmitry 2020 27th International Workshop on Electric Drives: MPEI Department of Electric Drives 90th Anniversary (IWED), Moscow, Russia, January 27-30, 2020 2020 / 6 p. : ill <https://doi.org/10.1109/IWED48848.2020.9069553>

Mathematical modelling of three phase squirrel cage induction motor and related signal processing for fault diagnostics = Kolme faasilise lühisrootoriga asünkroonmootori matemaatiline modelleerimine ning lähtuv rikkediagnostiline signaalitöötlus

Asad, Bilal 2021 <https://digikogu.taltech.ee/et/Item/8b5869c8-de30-4380-a0c6-8a6a2d6b6ff3> https://www.ester.ee/record=b5452432*est <https://doi.org/10.23658/taltech.40/2021>

Methods of condition monitoring and fault detection for electrical machines

Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Khang, Huynh Van Energies 2021 / art. 7459, 20 p. : ill <https://doi.org/10.3390/en14227459> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Model for energy management of residential building heating system

Gevorkov, Levon; Šmidl, Vaclav; Sirovy, Martin; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas 2020 27th International Workshop on Electric Drives: MPEI Department of Electric Drives 90th Anniversary (IWED), Moscow, Russia, January 27-30, 2020 2020 / 4 p <https://doi.org/10.1109/IWED48848.2020.9069503>

Model for torque estimation of pump system with horizontal pipe network

Gevorkov, Levon; Smidl, Vaclav; Sirovy, Martin; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas 2019 26th International Workshop on Electric Drives : Improvement in Efficiency of Electric Drives (IWED) : Moscow Power Engineering Institute, Moscow, Russia, 30th of January – 2nd of February 2019 : proceedings 2019 / 5 p. : ill <https://doi.org/10.1109/IWED.2019.8664304>

Modeling battery energy storage systems based on remaining useful lifetime through regression algorithms and binary classifiers

Zequera, Rolando Antonio Gilbert; Rjabtšikov, Viktor; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants Applied sciences 2023 / art. 7597 <https://doi.org/10.3390/app13137597> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modelling of magnetization processes of 3D-Printed Fe-Si components by means of an artificial neural network implemented in a FEM scheme

Stella, Marco; Faba, Antonio; Bertolini, Vittorio; Fulginei, F. Riganti; Sabino, Lorenzo; Tiismus, Hans; Kallaste, Ants; Cardelli, Ermanno 2024 International Conference on Electrical Machines (ICEM) 2024 / 7 p <https://doi.org/10.1109/ICEM60801.2024.10700301>

A modified dynamic model of single-sided linear induction motors considering longitudinal and transversal effects

Heidari, Hamidreza; Rassõlkin, Anton; Razzaghi, Arash; Vaimann, Toomas; Kallaste, Ants; Andriushchenko, Ekaterina; Belahcen, Anouar; Lukichev, Dmitry Electronics 2021 / art. 933, 14 p. : ill <https://doi.org/10.3390/electronics10080933> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modified initial design procedure for synchronous reluctance motor

Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton 2022 International Conference on Electrical Machines (ICEM) 2022 / p. 1969-1975 <https://doi.org/10.1109/ICEM51905.2022.9910594>

Modified winding function analysis of synchronous reluctance motor for design iteration purposes

Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton IEEE transactions on magnetics

Modified winding function-based model of squirrel cage induction motor for fault diagnostics

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Iqbal, Muhammad Naveed IET electric power applications 2020 / p. 1722-1734 <https://doi.org/10.1049/iet-epa.2019.1002> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Multi-criteria design optimization of ultra large diameter permanent magnet generator

Pabut, Ott; Eerme, Martin; Kallaste, Ants; Vaimann, Toomas Elektronika ir elektrotehnika = Electronics and electrical engineering 2015 / p. 42-48 : ill <https://doi.org/10.5755/j01.eee.21.3.10278> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Multipole surface-mounted permanent magnet synchronous generators for wind applications

Kilk, Aleksander; Kallaste, Ants 6th International Conference "2008 Power Quality and Supply Reliability" : August 27-29, 2008 : Pärnu, Estonia : conference proceedings 2008 / p. 235-240 : ill

MWFA model based synthetic data creation and utilization for the training of XGBoost based fault diagnostic algorithm of a squirrel cage induction motor

Asad, Bilal; Khan, Muhammad Amir; Raja, Hadi Ashraf; Vaimann, Toomas; Kallaste, Ants; Naseer, Muhammad Usman 2024 International Conference on Electrical Machines (ICEM) 2024 / 7 p <https://doi.org/10.1109/ICEM60801.2024.10700453>

Natural convection from flat side's of coil system

Ghahfarokhi, Payam Shams; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar 2018 19th International Scientific Conference on Electric Power Engineering (EPE 2018) : Brno, Czech Republic, 16 - 18 May 2018 2018 / p. 288-292 : ill <https://doi.org/10.1109/EPE.2018.8395967>

Necessity for implementation of inverse problem theory in electric machine fault diagnosis

Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants SDEMPED 2015 : 10th IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives : Guarda, Portugal, September 1-4, 2015 : proceedings 2015 / p. 380-385 : ill <http://dx.doi.org/10.1109/DEMPEP.2015.7303718>

New practical approach to input current shaping in AC-DC power converters

Janson, Kuno; Bolgov, Viktor; Kütt, Lauri; Kallaste, Ants; Mölder, Heigo EPE-PEMC 2008 : 2008 13th International Power Electronics and Motion Control Conference : 1-3 September 2008, Poznan, Poland : abstracts 2008 / p. 8 https://www.researchgate.net/publication/241155011_New_Practical_Approach_to_Input_Current_Shaping_in_AC-DC_Power_Converters

New practical approach to input current shaping in AC-DC power converters [Electronic resource]

Janson, Kuno; Bolgov, Viktor; Kütt, Lauri; Kallaste, Ants; Mölder, Heigo EPE-PEMC 2008 : 2008 13th International Power Electronics and Motion Control Conference : 1-3 September 2008, Poznan, Poland : proceedings 2008 / p. 154-158 : ill. [CD-ROM] https://www.researchgate.net/publication/241155011_New_Practical_Approach_to_Input_Current_Shaping_in_AC-DC_Power_Converters

A Novel vector control strategy for a six-phase induction motor with low torque ripples and harmonic currents

Heidari, Hamidreza; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants; Taheri, Asghar; Holakooie, Mohammad Hosein; Belahcen, Anouar Energies 2019 / art. 1102, 14 p. : ill <https://doi.org/10.3390/en12061102> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Numerical investigation of properties of small size Axial Flux Permanent Magnet Motors

Stepien, Mariusz; Mikos, Jan; Kallaste, Ants; Rassõlkin, Anton 2019 20th International Symposium on Power Electronics (Ee 2019) : Novi Sad, Serbia, 23 – 26 October 2019 2019 / 4 p <https://doi.org/10.1109/PEE.2019.8923235>

The oil spray cooling system of automotive traction motors : the state of the art

Ghahfarokhi, Payam Shams; Podgornovs, Andrejs; Kallaste, Ants; Cardoso, Antonio J. Marques; Belahcen, Anouar; Vaimann, Toomas IEEE Transactions on Transportation Electrification 2023 / p. 428-451 <https://doi.org/10.1109/TTE.2022.3189596> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Oil spray cooling with hairpin windings in high-performance electric vehicle motors

Shams Ghahfarokhi, Payam; Podgornovs, Andrejs; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar; Cardoso, Antonio J. Marques 2021 28th International Workshop on Electric Drives : Improving Reliability of Electric Drives (IWED) 2021 / 5 p <https://doi.org/10.1109/IWED52055.2021.9376390>

Opportunities and challenges of utilizing additive manufacturing approaches in thermal management of electrical machines

Ghahfarokhi, Payam Shams; Podgornovs, Andrejs; Kallaste, Ants; Cardoso, Antonio J. Marques; Belahcen, Anouar; Vaimann, Toomas; Tiismus, Hans; Asad, Bilal IEEE Access 2021 / art. 9364970, p. 36368-36381 : ill <https://doi.org/10.1109/ACCESS.2021.3062618> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Optimal control of automatic manipulator for elimination of galvanic line load oscillation

Autsou, Siarhei; **Rassõlkin, Anton; Vaimann, Toomas; Demidova, Galina;** Saroka, Viktor; Karpovich, Dzmitry; **Kallaste, Ants** Periodica polytechnica electrical engineering and computer science 2021 / 15 p. : ill <https://doi.org/10.3311/PPee.15893> [Journal metrics at Scopus](#) [Article at Scopus](#)

Optimization of a 3D-printed permanent magnet coupling using genetic algorithm and Taguchi method

Andriushchenko, Ekaterina; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas; Rassõlkin, Anton; Heidari, Hamidreza; Tiismus, Hans Electronics 2021 / art. 494, 16 p. : ill <https://doi.org/10.3390/electronics10040494> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Overview of battery energy storage systems readiness for digital twin of electric vehicles

Zequera, Rolando Antonio Gilbert; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants IET Smart Grid 2023 / p. 5-16 <https://doi.org/10.1049/stg2.12101> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Overview of control methods of reluctance machines with sensors and sensorless

Melentjev, Sergei; Belahcen, Anouar; Kallaste, Ants; Vaimann, Toomas 2014 55th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON) : proceedings 2014 / p. 26-29 : ill

An overview of fuzzy logic approaches for fault diagnosis in energy conversion devices

Demidova, Galina; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants; Zakis, Janis; Suzdalenko, Alexander 2021 28th International Workshop on Electric Drives : Improving Reliability of Electric Drives (IWED) 2021 / 7 p <https://doi.org/10.1109/IWED52055.2021.9376389>

Overview of sensorless diagnostic possibilities of induction motors with broken rotor bars [Electronic resource]

Vaimann, Toomas; Kallaste, Ants; Kilk, Aleksander Proceedings of the 12th International Scientific Conference Electric Power Engineering 2011, Kouty nad Desnou, Czech Republic, May 17-19, 2011 2011 / [4 p.] : ill. [CD-ROM] <https://www.scinapse.io/papers/2583767167>

Overview of the use of Bellman dynamic programming method to eliminate oscillations in mechanical and electrical assemblies of technical objects

Autsou, Siarhei; Saroka, Viktor; Karpovich, Dzmitry; **Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas** 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärda, Estonia, June 12-15, 2019 : proceedings 2019 / 4 p <https://doi.org/10.1109/PQ.2019.8818246>

Overview on digital twin for autonomous electrical vehicles propulsion drive system

Mohamed, Mahmoud Ibrahim Hassanin; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants Sustainability 2022 / art. 601 <https://doi.org/10.3390/su14020601> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A parallel estimation system of stator resistance and rotor speed for active disturbance rejection control of six-phase induction motor

Heidari, Hamidreza; Rassõlkin, Anton; Holakooie, Mohammad Hosein; Vaimann, Toomas; Kallaste, Ants; Belahcen, Anouar; Lukichev, Dmitry Energies 2020 / 17 p <https://doi.org/10.3390/en13051121> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Parametric digital twin of autonomous electric vehicle transmission

Rassõlkin, Anton; Rjabtšikov, Viktor; Kuts, Vladimir; Kudelina, Karolina; Vaimann, Toomas; Kallaste, Ants; Partyshev, Andriy Journal of machine engineering 2021 / p. 131-140 : ill <https://doi.org/10.36897/jme/134435> [Journal metrics at Scopus](#) [Article at Scopus](#)

Passive shaping of line current waveform by converter with alternating of parallel and series resonance in AC-DC switch mode power supplies

Janson, Kuno; Bolgov, Viktor; Kütt, Lauri; Kallaste, Ants; Mölder, Heigo ICECS 2008 : The 15th IEEE International Conference on Electronics, Circuits and Systems : 31st August to 3rd September 2008, Malta : conference guide 2008 / p. 37 <https://ieeexplore.ieee.org/document/4674795>

Passive shaping of line current waveform by converter with alternating of parallel and series resonance in AC-DC switch mode power supplies [Electronic resource]

Janson, Kuno; Bolgov, Viktor; Kütt, Lauri; Kallaste, Ants; Mölder, Heigo ICECS 2008 : The 15th IEEE International Conference on Electronics, Circuits and Systems : August 31 - September 3, 2008, Malta : [proceedings] 2008 / p. 77-80 : ill. [CD-ROM] <https://doi.org/10.1109/ICECS.2008.4674795> <https://ieeexplore.ieee.org/document/4674795>

Permanent magnet axial-flux generator with toroidal winding

Kallaste, Ants; Järvi, Jaan; Kilk, Aleksander 5th International Conference : Electric Power Quality and Supply Reliability : August 23-26, 2006, Viimsi, Estonia : conference proceedings 2006 / p. 167-171 : ill

Permanent magnet axial-flux generator with toroidal winding

Kallaste, Ants; Kilk, Aleksander 4th International Symposium Topical Problems of Education in the Field of Electrical and Power

Permanent magnet wind generator with toroidal winding [Electronic resource]

Järvik, Jaan; Kallaste, Ants; Kilk, Aleksander Proceedings of the 11th International Scientific Symposium : Elektroenergetika 2005 : September 21-23, 2005, Stara Lesna Slovak Republic 2005 / [11] p. : ill. [CD-ROM]

Possibilities of changing the transport characteristics of the TEP70 locomotive

Rjabtšikov, Viktor; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants; Lukichev, Dmitry 2020 27th International Workshop on Electric Drives: MPEI Department of Electric Drives 90th Anniversary (IWED), Moscow, Russia, January 27-30, 2020 2020 / 6 p
<https://doi.org/10.1109/IWED48848.2020.9069576>

Possibilities of decreasing induction motor bearing currents

Kudelina, Karolina; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants 2021 IEEE Open Conference of Electrical, Electronic and Information Sciences (eStream): proceedings of the conference, April 22, 2021, Vilnius, Lithuania 2021 / 5 p. : ill
<https://doi.org/10.1109/eStream53087.2021.9431419>

Possible manufacturing tolerance faults in design and construction of low speed slotless permanent magnet generator

Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar 2014 16th European Conference on Power Electronics and Applications (EPE'14-ECCE Europe) : Lappeenranta, Finland, 26-28 August 2014. Vol. 4 2014 / p. 3073-3082 : ill

Power factor correction with vehicle-to-grid STATCOM implementation

Rassõlkin, Anton; Kallaste, Ants; Hõimoja, Hardi PQ2014 : the 9th International 2014 Electric Power Quality and Supply Reliability Conference (PQ) : June 11-13, 2014, Rakvere, Estonia : proceedings 2014 / p. 177-180 : ill

Power losses analysis in thermal design of a synchronous reluctance motor

Shams Ghahfarokhi, Payam; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar 2019 IEEE 60th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), 7-9 October 2019 : conference proceedings 2019 / 5 p. : ill <https://doi.org/10.1109/RTUCON48111.2019.8982256>

Preliminary analysis of bearing current faults for predictive maintenance

Kudelina, Karolina; Raja, Hadi Ashraf; Vaimann, Toomas; Kallaste, Ants; Pomarnacki, Raimondas; Hyunh, Van Khang 2023 IEEE International Conference on Electric Machines and Drives (IEMDC) 2023 / 5 p. : ill
<https://doi.org/10.1109/IEMDC55163.2023.10238934>

Preliminary analysis of global parameters of induction machine for fault prediction in rotor bars

Kudelina, Karolina; Raja, Hadi Ashraf; Autso, Siarhei; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants 2022 IEEE 20th International Power Electronics and Motion Control Conference (PEMC) : Brasov, Romania, 25-28 Sept. 2022 : proceedings 2022 / p. 243-248 : ill <https://doi.org/10.1109/PEMC51159.2022.9962922>

Preliminary analysis of mechanical bearing faults for predictive maintenance of electrical machines

Kudelina, Karolina; Raja, Hadi Ashraf; Autso, Siarhei; Naseer, Muhammad Usman; Vaimann, Toomas; Kallaste, Ants; Pomarnacki, Raimondas; Hyunh, Van Khang 2023 IEEE 14th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED) 2023 / p. 430-435 : ill <https://doi.org/10.1109/SDEMPED54949.2023.10271451>

Preliminary analysis of soft magnetic material properties for additive manufacturing of electrical machines

Tiismus, Hans; Kallaste, Ants; Rassõlkin, Anton; Vaimann, Toomas Modern Materials and Manufacturing 2019 : 12th International DAAAM Baltic Conference and 27th International Baltic Conference BALTMATTRIB 2019. Selected, peer reviewed papers from the conference Modern Materials and Manufacturing 2019 (MMM 2019), April 24-26, 2019, Tallinn, Estonia 2019 / p. 270-275 : ill <https://www.scientific.net/KEM.799.270> https://www.ester.ee/record=b5235278*est
<https://doi.org/10.4028/www.scientific.net/KEM.799.270> Conference proceeding at Scopus Article at Scopus

Preliminary design analysis of an axial flux yokeless stator switched reluctance machine

Hussain, Shahid; Kallaste, Ants; Naseer, Muhammad Usman; Sarap, Martin; Tiismus, Hans; Vaimann, Toomas 2023 IEEE 64th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), Riga, Latvia, October 9-10, 2023 : conference proceedings 2023 / 6 p <https://doi.org/10.1109/RTUCON60080.2023.10413130>

Principles and methods of servomotor control : comparative analysis and applications

Autso, Siarhei; Kudelina, Karolina; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants Applied sciences 2024 / art. 2579
<https://doi.org/10.3390/app14062579> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Production and properties of additively manufactured electrical machine cores = Kihltisandus meetodil valmistatud elektrimasinate magnetsüdamikud ja nende omadused

Tiismus, Hans 2022 <https://doi.org/10.23658/taltech.49/2022> <https://digikogu.taltech.ee/et/Item/1a6cde04-f268-42c1-95d7-b9a43dd70046>
https://www.ester.ee/record=b5511687*est

Production quality related propagating faults of induction machines

Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants 2020 XI International Conference on

Propulsion drives and control algorithms of electrical vehicles

Mohamed, Mahmoud Ibrahim Hassanin; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants Handbook of power electronics in autonomous and electric vehicles 2024 / p. 139-159 <https://doi.org/10.1016/B978-0-323-99545-0.00009-9>

Propulsion motor drive topology selection for further development of ISEAUTO self-driving car

Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants; Sell, Raivo 59th Annual International Scientific Conference on Power and Electrical Engineering : November 12, 13, 2018, Riga Technical University (RTUCON) : conference proceedings 2018 / 5 p. : ill
<https://doi.org/10.1109/RTUCON.2018.8659887>

Põrlevate elektrimasinate diagnostika staatorisignaale analüüsi meetodil

Vaimann, Toomas; Kallaste, Ants; Kilk, Aleksander Taastuvate energiaallikate uurimine ja kasutamine : neljateistkümnenda konverentsi kogumik = Investigation and Usage of Renewable Energy Sources : fourteenth conference proceedings : [8. nov. 2012, Tartu] 2012 / lk. 78-87 : ill

Reactive power compensation for spot welding machine using thyristor switched capacitor

Kallaste, Ants; Kütt, Lauri; Bolgov, Viktor; Janson, Kuno 6th International Conference "2008 Power Quality and Supply Reliability" : August 27-29, 2008 : Pärnu, Estonia : conference proceedings 2008 / p. 241-245 : ill

Recent trends in additive manufacturing and topology optimization of reluctance machines

Hussain, Shahid; Kallaste, Ants; Vaimann, Toomas Energies 2023 / art. 3840 <https://doi.org/10.3390/en16093840> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Reducing of sparking caused by the parametric modulation of sliding electric contact unit at synchronous machine

Kozyreva, Oksana; Plokhov, Igor; Kotkov, Nikita; **Gevorkov, Levon; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants** 17th International Symposium "Topical Problems in the Field of Electrical and Power Engineering". Doctoral school of energy and geotechnology. III : Kuressaare, Estonia, January 15-20, 2018 2018 / p. 236-239 : ill http://ise.elnet.ee/record=b2950145~S2*est

Reducing sparking in the transient layer of the sliding electrical contact unit

Kozyreva, Oksana; Plokhov, Igor; Kotkov, Nikita; Savrajev, Igor; Ilyin, Alexander; **Vaimann, Toomas; Rassõlkin, Anton; Gevorkov, Levon; Kallaste, Ants** 2018 19th International Scientific Conference on Electric Power Engineering (EPE 2018) : Brno, Czech Republic, 16 - 18 May 2018 2018 / p. 223-227 : ill <https://doi.org/10.1109/EPE.2018.8395969>

Re-use and recycling of different electrical machines

Rassõlkin, Anton; Kallaste, Ants; Orlova, Svetlana; Gevorkov, Levon; Vaimann, Toomas; Belahcen, Anouar Latvian journal of physics and technical sciences 2018 / p. 13-23 : ill <https://doi.org/10.2478/lpts-2018-0025> [Journal metrics at Scopus](#) [Article at Scopus](#)

Review of design freedom offered by additive manufacturing for performance enhancement of electrical machine

Ahmad, Zahoor; Kallaste, Ants; Vaimann, Toomas; Naseer, Muhammad Usman; Hussain, Shahid; Rassõlkin, Anton IEEE Open Journal of the Industrial Electronics Society 2024 / p. 1300-1323 <https://doi.org/10.1109/OJIES.2024.3509547>

Review of electric vehicle testing procedures for digital twin development : a comprehensive analysis

Rjabtšikov, Viktor; Rassõlkin, Anton; Kudelina, Karolina; Kallaste, Ants; Vaimann, Toomas Energies 2023 / art. 6952 <https://doi.org/10.3390/en16196952> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A review of electrical machine design processes from the standpoint of software selection

Daukaev, Kamil; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar 2017 IEEE 58th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON) : proceedings : Latvia, Riga, 12-13 October, 2017 2017 / [6] p. : ill <https://doi.org/10.1109/RTUCON.2017.8124818>

Review of electrical machine diagnostic methods applicability in the perspective of Industry 4.0

Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Belahcen, Anouar Scientific Journal of Riga Technical University. Electrical, control and communication engineering 2018 / p. 108-116 : ill <https://doi.org/10.2478/ecce-2018-0013>

Review of high voltage instrument transformer condition monitoring

Asefi, Sajjad; Asad, Bilal; Leinakse, Madis; Manninen, Henri; Kilter, Jako; Vaimann, Toomas; Kallaste, Ants; Tealane, Marko; Landsberg, Mart IEEE Transactions on Dielectrics and Electrical Insulation 2024 / 12 p <https://doi.org/10.1109/TDEI.2024.3422260>

Review of loss calculation reduction control methods of permanent magnet assisted reluctance drive

Melentjev, Sergei; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Vaimann, Toomas PQ2016 : the 10th International Conference 2016 Electric Power Quality and Supply Reliability Conference (PQ) : August 29-31, 2016, Tallinn, Estonia : proceedings 2016 / p. 199-206 : ill <https://doi.org/10.1109/PQ.2016.7724113>

A review of synchronous reluctance motor-drive advancements

Heidari, Hamidreza; Rassölkin, Anton; Kallaste, Ants; Vaimann, Toomas; Andriushchenko, Ekaterina; Belahcen, Anouar; Lukichev, Dmitry Sustainability 2021 / art. 729, p. 1-37 <https://doi.org/10.3390/su13020729> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Review of the analytical flow model to predict the hydraulic behaviour in electrical machine

Ghahfarokhi, Payam Shams; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärdla, Estonia, June 12-15, 2019 : proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/PQ.2019.8818271>

Review of thermal analysis of permanent magnet assisted synchronous reluctance machines

Ghahfarokhi, Payam Shams; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas; Rassölkin, Anton PQ2016 : the 10th International Conference 2016 Electric Power Quality and Supply Reliability Conference (PQ) : August 29-31, 2016, Tallinn, Estonia : proceedings 2016 / p. 219-224 <https://doi.org/10.1109/PQ.2016.7724116>

A review on additive manufacturing possibilities for electrical machines

Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassölkin, Anton Energies 2021 / art. 1940 <https://doi.org/10.3390/en14071940> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Robust design optimization and emerging technologies for electrical machines: challenges and open problems

Orosz, Tamas; **Rassölkin, Anton; Kallaste, Ants**; Arsenio, Pedro; Panek, David; Kaska, Jan; Karban, Pavel Applied sciences 2020 / art. 6653, 33 p. : ill <https://doi.org/10.3390/app10196653> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Rotor fault diagnostic of inverter fed induction motor using frequency analysis

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassölkin, Anton 2019 IEEE 12th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED), 27-30 Aug. 2019, Toulouse, France : proceedings 2019 / p. 127-133 : ill <https://doi.org/10.1109/DEMPED.2019.8864903>

Sensitivity analysis for multi-objective optimization of switched reluctance motors

Andriushchenko, Ekaterina; Kallaste, Ants; Mohammadi, M. Hossain; Lowther, David Alister; **Heidari, Hamidreza** Machines 2022 / art. 559, 16 p. : ill <https://doi.org/10.3390/machines10070559> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Sensorless detection of induction motor faults using the clarke vector approach

Vaimann, Toomas; Kallaste, Ants; Kilk, Aleksander Scientific journal of Riga Technical University. Serija 4, Power and electrical engineering 2011 / p. 43-48 : ill https://www.researchgate.net/publication/258547195_Sensorless_Detection_of_Induction_Motor_Rotor_Faults_Using_the_Clarke_Vector_Approach

Signal processing and machine learning techniques for predictive maintenance of rotor bars in induction machine

Kudelina, Karolina; Raja, Hadi Ashraf; Rjabtšikov, Viktor; Naseer, Muhammad Usman; Vaimann, Toomas; Kallaste, Ants 2023 International Conference on Electrical Drives and Power Electronics (EDPE) 2023 / 7 p. : ill <https://doi.org/10.1109/EDPE58625.2023.10274030>

Signal spectrum-based machine learning approach for fault prediction and maintenance of electrical machines

Raja, Hadi Ashraf; Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Rassölkin, Anton; Khang, Huynh Van Energies 2022 / art. 9507 <https://doi.org/10.3390/en15249507> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Simulation of wind turbine vibrations

Andriushchenko, Ekaterina; Kallaste, Ants; Vaimann, Toomas; Rassölkin, Anton; Meshkov, Aleksandr; Heidari, Hamidreza; Demidova, Galina 2020 27th International Workshop on Electric Drives: MPEI Department of Electric Drives 90th Anniversary (IWED), Moscow, Russia, January 27-30, 2020 2020 / 4 p <https://doi.org/10.1109/IWED48848.2020.9069567>

Simulation study of a centrifugal pumping plant's power consumption at throttling and speed control

Gevorkov, Levon; Rassölkin, Anton; Kallaste, Ants; Vaimann, Toomas 2017 IEEE 58th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON) : proceedings : Latvia, Riga, 12-13 October, 2017 2017 / [5] p. : ill <http://dx.doi.org/10.1109/RTUCON.2017.8124823>

Simulation study of mixed pressure and flow control systems for optimal operation of centrifugal pumping plants

Gevorkov, Levon; Rassölkin, Anton; Kallaste, Ants; Vaimann, Toomas Scientific Journal of Riga Technical University. Electrical, control and communication engineering 2018 / p. 89-94 : ill <https://doi.org/10.2478/ecce-2018-0010>

Simulink based model for flow control of a centrifugal pumping system

Gevorkov, Levon; Rassölkin, Anton; Kallaste, Ants; Vaimann, Toomas 2018 25th International Workshop on Electric Drives: Optimization in Control of Electric Drives (IWED) 2018 / p. 1-4 : ill <https://doi.org/10.1109/IWED.2018.8321399>

Simulink based model of electric drive for throttle valve in pumping application

Gevorkov, Levon; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas 19th International Scientific Conference on Electric Power Engineering (EPE 2018) : Brno, Czech Republic, 16 - 18 May 2018 / p. 256-259 : ill
<https://doi.org/10.1109/EPE.2018.8395996>

Sliding mean value subtraction-based DC drift correction of B-H curve for 3D-printed magnetic materials

Asad, Bilal; Tiismus, Hans; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Ghahfarokhi, Payam Shams Energies 2021 / art. 284, 10 p <https://doi.org/10.3390/en14020284> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Slow-speed ring-shaped permanent magnet generator for wind applications

Kallaste, Ants; Vaimann, Toomas; Pabut, Ott 11th International Symposium "Topical Problems in the Field of Electrical and Power Engineering." Doctoral School of Energy and Geotechnology II : Pärnu, Estonia, January 16-21, 2012 / p. 66-69 : ill

State of the art of additively manufactured electromagnetic materials for topology optimized electrical machines

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton Additive manufacturing 2022 / art. 102778, 19 p. : ill
<https://doi.org/10.1016/j.addma.2022.102778> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

State-of-the-Art techniques for fault diagnosis in electrical machines: Advancements and future directions

Akbar, Siddique; Vaimann, Toomas; Asad, Bilal; Kallaste, Ants; Sardar, Muhammad Usman; Kudelina, Karolina Energies 2023 / Art. 6345 <https://doi.org/10.3390/en16176345> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Steady-state thermal model of a synchronous reluctance motor

Shams Ghahfarokhi, Payam; Belahcen, Anouar; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton 59th Annual International Scientific Conference on Power and Electrical Engineering : November 12, 13, 2018, Riga Technical University (RTUCON) : conference proceedings 2018 / 5 p. : ill <https://doi.org/10.1109/RTUCON.2018.8659846>

Steady-state thermal modeling of salient pole synchronous generator

Ghahfarokhi, Payam Shams; Podgornovs, Andrejs; Kallaste, Ants; Cardoso, Antonio J. Marques; Belahcen, Anouar; Vaimann, Toomas; Kudrjavtsev, Oleg; Asad, Bilal; Iqbal, Muhammad Naveed Energies 2022 / art. 9460 <https://doi.org/10.3390/en15249460> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Stiihilise taastuenergia kohandamine inimeste tehiskeskkonna vajadustele

Janson, Kuno; Kallaste, Ants Tallinna Tehnikaülikooli aastaraamat 2012 2013 / lk. 29-39 : ill

Study of bearing currents in induction machine : diagnostic possibilities, fault detection, and prediction

Kudelina, Karolina; Raja, Hadi Ashraf; Naseer, Muhammad Usman; Autso, Siarhei; Asad, Bilal; Vaimann, Toomas; Kallaste, Ants Electrical engineering 2024 / 14 p. : ill <https://doi.org/10.1007/s00202-024-02411-x> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A survey of broken rotor bar fault diagnostic methods of induction motor

Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Belahcen, Anouar Scientific Journal of Riga Technical University. Electrical, control and communication engineering 2018 / p. 117–124 : ill <https://doi.org/10.2478/ecce-2018-0014>

Teaduspreemia tehnikateaduste alal tööde tsükli "Kihtlisandustehnoloogial põhinevad elektrimasinad" eest : Toomas

Vaimann, Anton Rassõlkin, Ants Kallaste (kollektiivi juht) ja Hans Tiismus
Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Tiismus, Hans Eesti Vabariigi preemiad 2022 : teadus. F. J. Wiedemanni keeleauhind. Kultuur. Sport 2022 / lk. 130-145 : ill., fot https://www.ester.ee/record=b1226072*est

Technologies for additive manufacturing of electrical machines

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton; Belahcen, Anouar 2019 20th International Conference of Young Specialists on Micro/Nanotechnologies and Electron Devices (EDM) 2019 / p. 651-655 : ill
<https://doi.org/10.1109/EDM.2019.8823462>

The cluster computation-based hybrid FEM–analytical model of induction motor for fault diagnostics

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Iqbal, Muhammad Naveed Applied sciences 2020 / art. 7572, 15 p. : ill <https://doi.org/10.3390/app10217572> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

The cluster computation-based hybrid FEM–analytical model of induction motor for fault diagnostics

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Iqbal, Muhammad Naveed Advances in machine fault diagnosis 2022 / p. 27-41 <https://doi.org/10.3390/app10217572>

The FEM based modeling and corresponding test rig preparation for broken rotor bars analysis

Asad, Bilal; Eensalu, Lauri; Vaimann, Toomas; Kallaste, Ants; Rassõlkin, Anton; Belahcen, Anouar 2019 IEEE 60th

The low voltage start-up test of induction motor for the detection of broken bars

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Heidari, Hamidreza 2020 International Conference on Electrical Machines (ICEM), 23-26 august 2020, Gothenburg, Sweden : online : proceedings 2020 / p. 1481-1487 <https://doi.org/10.1109/ICEM49940.2020.9271018>

The modeling and investigation of slot skews and supply imbalance on the development of principal slotting harmonics in squirrel cage induction machines

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Khang, Huynh Van; Ghahfarokhi, Payam Shams; Naseer, Muhammad Usman; Iqbal, Muhammad Naveed IEEE Access 2021 / p. 165932-165946 <https://doi.org/10.1109/ACCESS.2021.3134331> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Thermal analysis of a SynRM using a thermal network and a hybrid model

Shams Ghahfarokhi, Payam; Belahcen, Anouar; Kallaste, Ants; Vaimann, Toomas; Gevorkov, Levon; Rassõlkin, Anton 2018 XIII International Conference on Electrical Machines (ICEM 2018) : Alexandroupoli, Greece, 3-6 September 2018 2018 / p. 2682-2688 : ill <https://doi.org/10.1109/ICELMACH.2018.8507002>

Thermal analysis of electromagnetic levitation coil [Electronic resource]

Ghahfarokhi, Payam Shams; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas 2016 17th International Scientific Conference on Electric Power Engineering (EPE) : proceedings 2016 / [5] p. : ill. [USB] <https://doi.org/10.1109/EPE.2016.7521725>

Thermal analysis of salient pole synchronous machines by multiple model planes approach

Shams Ghahfarokhi, Payam; Kallaste, Ants; Podgornovs, Andrejs; Belahcen, Anouar; Vaimann, Toomas; Kudrjavitsev, Oleg 2020 International Conference on Electrical Machines (ICEM), 23-26 august 2020, Gothenburg, Sweden : online : proceedings 2020 / p. 1511-1517 <https://doi.org/10.1109/ICEM49940.2020.9270753>

Thermal analysis of totally enclosed fan cooled synchronous reluctance motor-state of art

Ghahfarokhi, Payam Shams; Kallaste, Ants; Vaimann, Toomas; Belahcen, Anouar IECON 2019 - 45th Annual Conference of the IEEE Industrial Electronics Society : proceedings 2019 / p. 4372-4377 : ill <https://doi.org/10.1109/IECON.2019.8927706> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Thermal model of a synchronous reluctance motor

Ghahfarokhi, Payam Shams; Kallaste, Ants; Belahcen, Anouar 17th International Symposium "Topical Problems in the Field of Electrical and Power Engineering". Doctoral school of energy and geotechnology. III : Kuressaare, Estonia, January 15-20, 2018 2018 / p. 63-64 : ill http://ise.elnet.ee/record=b2950016~S2*est

Thermal modeling of a TEFC synchronous reluctance motor

Shams Ghahfarokhi, Payam; Podgornovs, Andrejs; Marques Cardoso, Antonio J.; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas 2021 IEEE 62nd International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), 15-17 Nov. 2021 : conference proceedings 2021 / 4 p. : ill <https://doi.org/10.1109/RTUCON53541.2021.9711740>

3D printing of electrical machines is a cutting-edge research in TalTech [Electronic resource]

Kallaste, Ants; Vaimann, Toomas Research in Estonia 2021 / 1 p. : ill <https://researchinestonia.eu/2021/10/14/3d-printing-of-electrical-machines-is-a-cutting-edge-research-in-taltech/>

Three-phase electrical equivalent model for squirrel cage induction motor

Petrov, Aleksei; Rassõlkin, Anton; Vaimann, Toomas; Plokhov, Igor; Kallaste, Ants; Kotelnikov, Aleksandr; Asad, Bilal; Savraev, Igor 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärda, Estonia, June 12-15, 2019 : proceedings 2019 / 6 p. : ill <https://doi.org/10.1109/PQ.2019.8818241>

Topology optimization and additive manufacturing of a loudspeaker soft magnetic core

Sarap, Martin; Pärtel, Marcus; Kallaste, Ants; Tiismus, Hans; Vaimann, Toomas 2024 International Conference on Electrical and Computer Engineering Researches (ICECER) 2024 / 5 p <https://doi.org/10.1109/ICECER62944.2024.10920438>

Topology optimization of a 3D-printed switched reluctance motor

Andriushchenko, Ekaterina; Mohammadi, M. Hossain; Lowther, David Alister; Heidari, Hamidreza; Kallaste, Ants; Khan, Arbaaz 2022 International Conference on Electrical Machines (ICEM) 2022 / p. 1976-1980 <https://doi.org/10.1109/ICEM51905.2022.9910829>

Transient modeling and recovery of non-stationary fault signature for condition monitoring of induction motors

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Ghahfarokhi, Payam Shams; Kudelina, Karolina Applied sciences 2021 / 17 p. : ill <https://doi.org/10.3390/app11062806> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Transient modeling and recovery of non-stationary fault signature for condition monitoring of induction motors

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Ghahfarokhi, Payam Shams Advances in machine fault diagnosis 2022 / p. 43-59 <https://doi.org/10.3390/app11062806>

Trends and challenges in intelligent condition monitoring of electrical machines using machine learning

Kudelina, Karolina; Vaimann, Toomas; Asad, Bilal; Rassõlkin, Anton; Kallaste, Ants; Demidova, Galina Applied sciences 2021 / art. 2761, 19 p. : ill <https://doi.org/10.3390/app11062761> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Using a fuzzy regulator to reduce noise

Shumski, Andrei; **Rassõlkin, Anton**; Autsoo, Siarhei; Karpovich, Dzmitry; **Kallaste, Ants; Vaimann, Toomas** 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärda, Estonia, June 12-15, 2019 : proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/PQ.2019.8818257>

Using analysis of stator current for squirrel-cage induction motor rotor faults diagnostics

Vaimann, Toomas; Kallaste, Ants; Kilk, Aleksander Electrical and Control Technologies : Proceedings of the 6th International Conference on Electrical and Control Technologies (ECT-2011), May 5-6, 2011, Kaunas, Lithuania 2011 / p. 245-250 : ill

Using Clarke vector approach for stator current and voltage analysis on induction motors with broken rotor bars

Vaimann, Toomas; Kallaste, Ants; Kilk, Aleksander Elektronika ir elektrotehnika = Electronics and electrical engineering 2012 / p. 17-20 : ill

Utilization of additive manufacturing in the thermal design of electrical machines : a review

Sarap, Martin; Kallaste, Ants; Ghahfarokhi, Payam Shams; Tiismus, Hans; Vaimann, Toomas Machines 2022 / art. 251 <https://doi.org/10.3390/machines10040251> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Uued inimesed ja positsioonid

Läänelaid, Siim; Otto, Tauno; Krumme, Andres; Oja Acik, Ilona; Kallaste, Ants; Tomberg, Hanno Mente et Manu 2020 / lk. 54-58 : portr <https://dea.digar.ee/cgi-bin/dea?a=is&oid=AKmenteetmanu202011&type=staticpdf>

Validation of an EV-permanent magnet synchronous motor model based on analytical dynamic approach

Mohamed, Mahmoud Ibrahim Hassanin; Rjabtšikov, Viktor; Rassõlkin, Anton; Vaimann, Toomas; Kallaste, Ants 2022 International Conference on Electrical Machines (ICEM) 2022 / p. 2384-2390 <https://doi.org/10.1109/ICEM51905.2022.9910755>

Vector control of synchronous reluctance motor with reduced torque ripples

Heidari, Hamidreza; Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas; Andriushchenko, Ekaterina 2020 XI International Conference on Electrical Power Drive Systems (ICEPDS), Saint-Petersburg, Russia, October 4-7, 2020 2021 / p. 223-227 : ill <https://doi.org/10.1109/ICEPDS47235.2020.9249309>

Wideband frequency response analysis for sensitive condition estimation of machine's turn insulation degradation faults

Sardar, Muhammad Usman; Vaimann, Toomas; Kütt, Lauri; Asad, Bilal; Kallaste, Ants; Land, Raul 2025 IEEE Workshop on Electrical Machines Design, Control and Diagnosis (WEMDCD) 2025 / 6 p <https://doi.org/10.1109/WEMDCD61816.2025.11014207>

Winding function based analytical model of squirrel cage induction motor for fault diagnostics

Asad, Bilal; Vaimann, Toomas; Kallaste, Ants; Rassõlkin, Anton; Belahcen, Anouar 2019 26th International Workshop on Electric Drives : Improvement in Efficiency of Electric Drives (IWED) : Moscow Power Engineering Institute, Moscow, Russia, 30th of January - 2nd of February 2019 : proceedings 2019 / 6 p. : ill <https://doi.org/10.1109/IWED.2019.8664314>

Обзор низкоскоростных генераторов с постоянными магнитами для ветряных установок

Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas; Savrajev, Igor Вестник Псковского государственного университета. Технические науки 2016 / с. 58-68

Технико-экономическое обоснование автономной системы электроснабжения на примере Псковской области

Bandurin, Ivan; Shchelikalina, Vyacheslav; Smirnova, Anastasia; **Rassõlkin, Anton; Kallaste, Ants; Vaimann, Toomas** Вестник Псковского государственного университета. Технические науки 2016 / с. 100-109