

### **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; Shams Ghahfarokhi, Payam** 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; Shams Ghahfarokhi, Payam** 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](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 advanced thermal management solutions for electrical machines = Kihltisandusmeetodil valmistatud täiustatud jahutuslahendused elektrimasinatele**

**Sarap, Martin** 2025 [https://www.ester.ee/record=b5755150\\*est](https://www.ester.ee/record=b5755150*est) <https://digikogu.taltech.ee/et/Item/e8fe803d-bbda-41c5-b78d-3aef7b1fd504>  
<https://doi.org/10.23658/taltech.54/2025>

### **Additively manufactured and topology optimized heatsink for a propulsion motor**

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

### **Additively manufactured spoke-type permanent magnet rotors : Solutions to multidisciplinary design challenges and comparison with traditional design**

Ajamloo, Akbar Mohammadi; **Tiismus, Hans; Kallaste, Ants; Ibrahim, Mohamed N.; Sergeant, Peter** IEEE transactions on energy conversion 2025 / 12 p. <http://doi.org/10.1109/TEC.2025.3619827> <https://ieeexplore.ieee.org/document/11197694>

### **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 (SDMPED) : [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 püsomagnetgeneraator 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; Shams Ghahfarokhi, Payam; 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;** Shams Ghahfarokhi, Payam 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; Rassõlkin, 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 sparsely 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**

**Rassõlkin, 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; 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. 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; Rassõlkin, 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](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; Rassõlkin, Anton; Kallaste, Ants** Applied sciences 2024 / art. 4241 <https://doi.org/10.3390/app14104241> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**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**

**Rassõlkin, 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"**

**Shams Ghahfarokhi, Payam; 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

**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; Rassõlkin, Anton; Belahcen, Anouar** Diagnostika '22 : 2022 International Conference on Diagnostics in Electrical Engineering : conference proceedings 2022 / 4 p.  
<https://doi.org/10.1109/Diagnostika55131.2022.9905102>

**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](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 modeling of contoured airgap topology for additively manufactured electrical machines = Kõverdatud õhupilu topoloogiaga kihtlisandusmeetodil valmistatud elektrimasinate projekteerimine ja modelleerimine**

**Naseer, Muhammad Usman** 2025 [https://www.ester.ee/record=b5747039\\*est](https://www.ester.ee/record=b5747039*est) <https://doi.org/10.23658/taltech.32/2025>  
<https://digikogu.taltech.ee/et/Item/af3abd72-6077-43be-b7ed-5fa0b3f58602>

**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 Additively Manufactured Axial Flux Switched Reluctance Machine**

**Hussain, Shahid; Kallaste, Ants; Naseer, Muhammad Usman; Tiismus, Hans; Sarap, Martin; Asad, Bilal; Vaimann, Toomas** IEEE Transactions on Industry Applications 2025 / p. 1-10 <https://doi.org/10.1109/TIA.2025.3604357>

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

**Vaimann, Toomas; Kudrjavnsev, Oleg; Kilk, Aleksander; Kallaste, Ants; Rassõlkin, Anton** Advances in electrical and electronic engineering 2018 / p. 271-278 : ill <https://doi.org/10.15598/aeer.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; Shams Ghahfarokhi, Payam; 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](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](https://www.scopus.com/journal/view?doi=10.3311/PPee.17007) [Article at Scopus](https://www.scopus.com/article/view?doi=10.3311/PPee.17007)

### **Design procedure and preliminary analysis for the introduction of axial asymmetry in the synchronous reluctance machines : [proceedings]**

**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**

**Shams Ghahfarokhi, Payam; 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**

**Shams Ghahfarokhi, Payam; 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](https://www.scopus.com/journal/view?doi=10.3390/machines9060120) [Article at Scopus](https://www.scopus.com/article/view?doi=10.3390/machines9060120) [Journal metrics at WOS](https://www.wos.org/doi/10.3390/machines9060120) [Article at WOS](https://www.wos.org/doi/10.3390/machines9060120)

#### **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**

**Shams Ghahfarokhi, Payam; 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](http://www.ester.ee/record=b4650094*est)

#### **Determining the thermal conductivity of additively manufactured metal specimens**

**Sarap, Martin; Kallaste, Ants; Shams Ghahfarokhi, Payam; 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/i/?12288> [https://www.ester.ee/record=b5233445\\*est](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, Dzmity** 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; Autsoo, 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](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; Shams Ghahfarokhi, Payam; 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](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->

**Energeetika - otsapidi üksnes taastuvenergia küljes**

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

Järvik, Jaan; Kilk, Aleksander; Kesküla, Viktor; Kallaste, Ants Tallinna Tehnikaülikooli aastaraamat 2005 2006 / lk. 261-268

**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; Shams Ghahfarokhi, Payam; 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**

Shams Ghahfarokhi, Payam; 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 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](http://www.ester.ee/record=b1787401*est) [Journal metrics at Scopus](#) [Article at Scopus](#)

#### **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 International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), 7-9 October 2019 : conference proceedings 2019 / 9 p. : ill <https://doi.org/10.1109/RTUCON48111.2019.8982350>

#### **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](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 2020 / p. 51-52 [https://www.ester.ee/record=b5291755\\*est](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 2020 / p. 6-10 : ill <https://doi.org/10.1109/ICEPDS47235.2020.9249344>

#### **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**

**Shams Ghahfarokhi, Payam; 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**

**Shams Ghahfarokhi, Payam; 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), Kärdla, 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; Autso, 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; Autso, 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; Autso, 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](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, Dmitri; 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 / 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 / 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](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 / 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 rikke diagnostiline signaalitöötlus**

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

### **A method for contouring an airgap profile in an electromagnetic device**

**Naseer, Muhammad Usman; Kallaste, Ants; Vaimann, Toomas** 2025 <https://www.etis.ee/Portal/IndustrialProperties/Display/4de92487-f0be-4f69-bd60-e647dcc5920f> <https://digikogu.taltech.ee/et/Item/af3abd72-6077-43be-b7ed-5fa0b3f58602>

### **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

**Model for torque estimation of pump system with horizontal pipe network**

**Gevorkov, Levon;** Smidl, Vaclav; Sirovy, Martin; **Rassölkin, Anton;** **Kallaste, Ants;** **Vaimann, Toomas** 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>

**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;** **Rassölkin, Anton;** Khang, Huynh Van; **Shams Ghahfarokhi, Payam;** **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](#)

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

**Zequera, Rolando Antonio Gilbert;** **Rjabtšikov, Viktor;** **Rassölkin, 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>

**Modelling of magnetization processes of 3D-printed Fe-Si components by means of an artificial neural network implemented in a Finite Element Scheme**

**Stella, Marco;** **Faba, Antonio;** **Bertolini, Vittorio;** **Riganti-Fulginei, Francesco;** **Sabino, Lorenzo;** **Tiismus, Hans;** **Kallaste, Ants;** **Cardelli, Ermanno** IEEE Open Journal of the Industrial Electronics Society 2025 / p. 1650-1662

<http://doi.org/10.1109/OJIES.2025.3620857> <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=11202631&tag=1>

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

**Heidari, Hamidreza;** **Rassölkin, 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;** **Rassölkin, 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 : [journal article]**

**Naseer, Muhammad Usman;** **Kallaste, Ants;** **Asad, Bilal;** **Vaimann, Toomas;** **Rassölkin, Anton** IEEE transactions on magnetics 2022 / art. 7500704 <https://doi.org/10.1109/TMAG.2022.3164189> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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

**Asad, Bilal;** **Vaimann, Toomas;** **Belahcen, Anouar;** **Kallaste, Ants;** **Rassölkin, 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**

**Shams Ghahfarokhi, Payam;** **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

**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/DEMPED.2015.7303718>

**A neuro-fuzzy approach for broken rotor bar fault prediction in induction motors via current spectrum analysis**

**Raja, Hadi Ashraf; Vaimann, Toomas; Asad, Bilal; Kallaste, Ants; Sardar, Muhammad Usman** 2025 IEEE Symposium on Diagnostics for Electric Machines, Power Electronics and Drives (SDEMPED) : proceedings 2025 / 7 p <https://doi.org/10.1109/SDEMPED53223.2025.11154194>

**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](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](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; Rassölkin, 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; Rassölkin, 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**

**Shams Ghahfarokhi, Payam; 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**

**Shams Ghahfarokhi, Payam; 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; Rassölkin, 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; Rassölkin, 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; Rassölkin, 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; Rassölkin, Anton; Vaimann, Toomas; Kallaste, Ants; Zakis, Janis; Suzdalenko, Alexander** 2021 28th

**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), Kärđla, 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; Järvik, 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 Engineering. Doctoral School of Energy and Geotechnology : Kuressaare, Estonia, January 15-20, 2007 2007 / p. 186-189 : ill

**Permanent magnet wind generator with toroidal winding [Electronic resource]**

**Järvik, Jaan; Kallaste, Ants; Kilk, Aleksander** Proceedings of the IIIrd 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://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](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 Electrical Power Drive Systems (ICEPDS), Saint-Petersburg, Russia, October 4-7, 2020 2020 / p. 311-315 : ill <https://doi.org/10.1109/ICEPDS47235.2020.9249355>

### **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>

### **Pöörlevate elektrimasinate diagnostika staatorisignaali 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](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> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **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 / p. 3331-3341 <https://doi.org/10.1109/TDEI.2024.3422260> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **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; Rassõlkin, 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**

**Shams Ghahfarokhi, Payam; 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**

**Shams Ghahfarokhi, Payam; Kallaste, Ants; Belahcen, Anouar; Vaimann, Toomas; Rassõlkin, 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; Rassõlkin, 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](#)

### **Role of additive manufacturing in the performance enhancement of electrical machine winding : Current status and future outlook**

**Ahmad, Zahoor; Kallaste, Ants; Vaimann, Toomas** Future Frontiers : PhD Conference on Emerging Technologies : Book of Abstracts 2025 / p. 29 ; oral 18 [https://tuit.ut.ee/sites/default/files/2025-05/PhD%20Conference%202025%20Book%20of%20Abstracts\\_pub3.pdf](https://tuit.ut.ee/sites/default/files/2025-05/PhD%20Conference%202025%20Book%20of%20Abstracts_pub3.pdf)

### **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](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; Rassölkin, Anton; Kallaste, Ants; Vaimann, Toomas** 2018 19th International Scientific Conference on Electric Power Engineering (EPE 2018) : Brno, Czech Republic, 16 - 18 May 2018 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; Rassölkin, Anton; Shams Ghahfarokhi, Payam** 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

**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**

**Shams Ghahfarokhi, Payam; 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; Outsou, 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>

**Switching oscillation-based fractional-domain high-sensitive diagnosis of machine turn insulation degradation**

**Sardar, Muhammad Usman; Vaimann, Toomas; Kütt, Lauri; Asad, Bilal; Kallaste, Ants** Engineering Science and Technology, an International Journal 2025 / art. 102224 <https://doi.org/10.1016/j.jestch.2025.102224>

**Teaduspreemia tehnikateaduste alal tööde tsükli "Kihltisandustehnoloogial 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](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 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>

**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]**

**Shams Ghahfarokhi, Payam; 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**

**Shams Ghahfarokhi, Payam; 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**

**Shams Ghahfarokhi, Payam; 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](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; Shams Ghahfarokhi, Payam** Advances in machine fault diagnosis 2022 / p. 43-59 <https://doi.org/10.3390/app11062806>

### **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; Shams Ghahfarokhi, Payam; 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](#)

### **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; Autso, 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 elektrotechnika = Electronics and electrical engineering 2012 /

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

**Sarap, Martin; Kallaste, Ants; Shams Ghahfarokhi, Payam; 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 diagnosis for high-sensitivity turn-insulation degradation estimation in inverter-fed machines**

**Sardar, Muhammad Usman; Vaimann, Toomas; Kütt, Lauri; Asad, Bilal; Kallaste, Ants; Raja, Hadi Ashraf** 2025 IEEE Symposium on Diagnostics for Electric Machines, Power Electronics and Drives (SDEMPED) : proceedings 2025 / 7 p  
<https://doi.org/10.1109/SDEMPED53223.2025.11154298> [Conference paper at Scopus](#)

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