

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](#)

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>

Broken rotor bar fault detection using machine learning: Optimal frequency resolution

Koveshnikov, Semen; Bouharrouti, Nada El; Kudelina, Karolina; Naseer, Muhammad Usman; Vaimann, Toomas; Belahcen, Anouar 2024 International Conference on Electrical Machines (ICEM) 2024 / 6 p <https://doi.org/10.1109/ICEM60801.2024.10700228>

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>

Co-simulations of induction machines coupled with a radial ball bearing for mechanical defects analysis

El Bouharrouti, Nada; Sitnikov, Maksim; Hemeida, Ahmed; Martin, Florian; Kudelina, Karolina; Naseer, Muhammad Usman; Belahcen, Anouar IET Electric Power Applications 2025 / 13 p. : ill <http://dx.doi.org/10.1049/elp2.12529>

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

Deep Transfer Learning Approach Using Filtered Time-Frequency Representations of Current Signals for Bearing Fault Detection in Induction Machines

El Bouharrouti, Nada; Nemat Saberi, Alireza; Hussain Khan, Muhammad Dayyan; Kudelina, Karolina; Naseer, Muhammad Usman; Belahcen, Anouar IET Electric Power Applications 2025 <https://doi.org/10.1049/elp2.70074>

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://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 of an additively manufactured polymer composite electrical machine

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

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

Naseer, Muhammad Usman 22nd International Symposium "Topical Problems in the Field of Electrical and Power Engineering". Doctoral School of Energy and Geotechnology III : Pärnu, Estonia, August 23-26, 2023 2023 / p. 33-34 : ill https://www.ester.ee/record=b5570906*est

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>

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>

Experimental determination of equivalent circuit parameters for a synchronous generator

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

- Generation of unmeasured loading levels data for condition monitoring of induction machine using machine learning**
 Billah, Md Masum; Saberi, Alireza Nemat; Hemeida, Ahmed; Martin, Floran; **Kudelina, Karolina; Asad, Bilal; Naseer, Muhammad Usman**; Mukherjee, Victor; Belahcen, Anouar IEEE transactions on magnetics 2024 / art. 8201104
<https://doi.org/10.1109/TMAG.2023.3312267>
- 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>
- Magnetic equivalent circuit and Lagrange interpolation function modeling of induction machines under broken bar faults**
 Hemeida, Ahmed; Billah, Md Masum; **Kudelina, Karolina; Asad, Bilal; Naseer, Muhammad Usman**; Guo, Baocheng; Martin, Floran; Rasilo, Paavo; Belahcen, Anouar IEEE transactions on magnetics 2024 / art. 8200704
<https://doi.org/10.1109/TMAG.2023.3306207>
- 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>
- The modeling and investigation of slot skews and supply imbalance on the development of principal slotting harmonics in squirrel cage induction machines**
Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Khang, Huynh Van; **Ghahfarokhi, Payam Shams; Naseer, Muhammad Usman**; Iqbal, Muhammad Naveed IEEE Access 2021 / p. 165932-165946
<https://doi.org/10.1109/ACCESS.2021.3134331> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)
- Modified initial design procedure for synchronous reluctance motor**
Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton 2022 International Conference on Electrical Machines (ICEM) 2022 / p. 1969-1975 <https://doi.org/10.1109/ICEM51905.2022.9910594>
- Modified winding function analysis of synchronous reluctance motor for design iteration purposes : [journal article]**
Naseer, Muhammad Usman; Kallaste, Ants; Asad, Bilal; Vaimann, Toomas; Rassõlkin, 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 analysis of synchronous reluctance motot for design iteration purposes**
Naseer, Muhammad Usman 20th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tallinn, Estonia, September 8-10, 2021 2021 / p. 37-38 : ill
https://www.ester.ee/record=b5457278*est
- Multi-Rate Vibration Signal Analysis for Enhanced Data-Driven Monitoring of Bearing Faults in Induction Machines**
 El Bouharrouti, Nada; Koveshnikov, Semen; Garcia-Calva, Tomas Alberto; Vehvilainen, Milla; **Kudelina, Karolina; Naseer, Muhammad Usman; Vaimann, Toomas**; Belahcen, Anouar 2024 International Conference on Electrical Machines, ICEM 2024 2024 / 7 p. <http://dx.doi.org/10.1109/ICEM60801.2024.10700488>
- 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>
- 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; Pomamacki, 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 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>
- Profit maximization by integrating demand response in multiple VPPs optimal scheduling**
 Asim Amin, M.; Suleman, Ahmad; **Korōtko, Tarmo**; Aziz, Saddam; **Naseer, Muhammad Usman**; Ahmad, Nisar 2022 International Conference on Electrical Engineering and Sustainable Technologies (ICEEST), 14th-15th December, 2022, Lahore, Pakistan : proceedings 2022 / 6 p <https://doi.org/10.1109/ICEEST56292.2022.10077867>
- 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>

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](#)

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>

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

Kudelina, Karolina; Raja, Hadi Ashraf; Naseer, Muhammad Usman; Autsou, 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](#)

Synthetic Data-Driven Detection of Broken Rotor Bars in Induction Machines Under Adjusted Noise Level

Nuha, Nurjahan Amin; Siddik Injam, Md Tanbir; El Bouharrouti, Nada; Hemeida, Ahmed; Kudelina, Karolina; Naseer, Muhammad

Usman; Belahcen, Anouar 2025 IEEE Workshop on Electrical Machines Design, Control and Diagnosis (WEMDCD) 2025 / 6 p

<https://doi.org/10.1109/WEMDCD61816.2025.11014141>

The design process of electrical machines from the standpoint of additive manufacturing

Naseer, Muhammad Usman 21st International Symposium "Topical problems in the field of electrical and power engineering.

Doctoral school of energy and geotechnology. III" : Pärnu, Estonia, June 15-18, 2022 2022 / p. 33-34 : ill

https://www.ester.ee/record=b5504019*est