

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/SDMPED.2017.8062334>

An analytic model for fault diagnosis in power distribution systems considering unreliable alarms

Wang, Chongyu; Pang, Kaiyuan; Zhang, Yong; **Wen, Fushuan; Palu, Ivo;** Xiong, Wen; Chen, Minghui; Shang, Huiyu 2020 IEEE Power & Energy Society General Meeting (GM 2020) 2020 / 5 I <https://doi.org/10.1109/PESGM41954.2020.9281468>

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](#)

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>

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](#)

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>

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 and its relation to industrial internet

Belahcen, Anouar; Gyftakis, Konstantinos N.; Martinez, Javier; Climente-Alarcon, Vicente; **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. 233-241 : ill <http://dx.doi.org/10.1109/WEMDCD.2015.7194535>

Digital twin of wind generator for modelling various turbine characteristics

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

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

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

Estimation of complex derivatives and application for fault diagnosis

Baraškova, Tatjana; Arjassov, Gennadi; Gornostajev, Dmitri Annals of DAAAM for 2012 & Proceedings of the 23rd International DAAAM Symposium : Intelligent Manufacturing & Automation 2012 / p. 0469-0472 : ill. [CD-ROM] https://www.daaam.info/Downloads/Pdfs/proceedings/proceedings_2012/109.pdf

Fault detecting accuracy of mechanical damages in rolling bearings

Kudelina, Karolina; Baraškova, Tatjana; Shirokova, Veroonika; Vaimann, Toomas; Rassõlkin, Anton Machines 2022 / art. 86 <https://doi.org/10.3390/machines10020086> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Fault diagnosis of output-side diode-bridge in isolated DC-DC series resonant converter

Bakeer, Abualkasim Ahmed Ali; Chub, Andrii; Vinnikov, Dmitri 2022 IEEE 7th International Energy Conference (ENERGYCON) 2022 <https://doi.org/10.1109/ENERGYCON53164.2022.9830339>

Fault diagnosis of the tooth belt transmission of Cartesian robot

Autsou, Siarhei; Vaimann, Toomas; Rassõlkin, Anton; Asad, Bilal; Kudelina, Karolina; Huynh, Van Khang 2022 29th International Workshop on Electric Drives : Advances in Power Electronics for Electric Drives : IWED2022 : Moscow Power Engineering Institute, Moscow, Russia : 26th– 29th of January 2022 : Proceedings 2022 / 6 p
<https://doi.org/10.1109/IWED54598.2022.9722578>

Fault diagnosis system of Cartesian robot for various belt tension

Autsou, Siarhei; Vaimann, Toomas; Rassõlkin, Anton; Kudelina, Karolina 2022 International Conference on Diagnostics in Electrical Engineering (Diagnostics) 2022 / 4 | <https://doi.org/10.1109/Diagnostics55131.2022.9905111>

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>

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>

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>

High-level fault diagnosis in RISC processors with Implementation-Independent Functional Test

Oyeniran, Adeboye Stephen; Jenihhin, Maksim; Raik, Jaan; Ubar, Raimund-Johannes 2022 IEEE Computer Society Annual Symposium on VLSI (ISVLSI) : Nicosia, Cyprus : 04-06 July 2022 / p. 32-37 <https://doi.org/10.1109/ISVLSI54635.2022.00019>

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

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

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](#)

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>

Influence of different tooth belt transmission faults on the work of a cartesian robot

Autsou, Siarhei; Vaimann, Toomas; Rassõlkin, Anton; Kudelina, Karolina; Asad, Bilal Proceedings of the 2022 20th International Conference on Mechatronics - Mechatronika, (ME), Pilsen, Czech Republic, December 7–9, 2022 / 5 p. : ill <https://doi.org/10.1109/ME54704.2022.9982815>

LightGBM-based fault diagnosis of rotating machinery under changing working conditions using modified recursive feature elimination

Saberi, Alireza Nemat; Belahcen, Anouar; Sobra, Jan; Vaimann, Toomas IEEE Access 2022 / p. 81910-81925
<https://doi.org/10.1109/ACCESS.2022.3195939> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A linear integer programming model for fault diagnosis in active distribution systems with bi-directional 'fault monitoring devices installed

Wang, Chongyu; Pang, Kaiyuan; Xu, Yan; Wen, Fushuan; Palu, Ivo; Feng, Changsen IEEE Access 2020 / p. 106452-106463
<https://doi.org/10.1109/ACCESS.2020.2999519> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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](#)

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; **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](#)

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

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

Multi-sensor fault diagnosis of induction motors using random forests and support vector machine

Saberi, Alireza Nemat; Sandirasegaram, Sarvavignoban; Belahcen, Anouar; Vaimann, Toomas; Sobra, Jan 2020 *International Conference on Electrical Machines (ICEM)*, 23-26 august 2020, Gothenburg, Sweden : online : proceedings 2020 / p. 1404–1410
<https://doi.org/10.1109/ICEM49940.2020.9270689>

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>

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>

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

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

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>

Rotor fault diagnostic of inverter fed induction motor using frequency analysis

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, 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>

Self-healing photovoltaic microconverter with zero redundancy and accurate low-cost fault detection

Bakeer, Abualkasim Ahmed Ali; Chub, Andrii; Vinnikov, Dmitri *IEEE transactions on industrial electronics* 2024 / p. 646-656
<https://doi.org/10.1109/TIE.2023.3250836> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Spectrum analysis additional vibrations of Cartesian robot by different control modes

Autsou, Siarhei; Vaimann, Toomas; Rassõlkin, Anton; Kudelina, Karolina 2022 18th Biennial Baltic Electronics Conference (BEC) 2022 / 5 l. <https://doi.org/10.1109/BEC56180.2022.9935595>

Spectrum analysis for condition monitoring and fault diagnosis of ventilation motor : a case study

Shabbir, Noman; Kütt, Lauri; Asad, Bilal; Jawad, Muhammad; Iqbal, Muhammad Naveed; Daniel, Kamran *Energies* 2021 / art. 2001 <https://doi.org/10.3390/en14072001> [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](#)

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>

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

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

The usage of fuzzy logic for detecting mechanical faults in gearboxes of robotic system

Autsou, Siarhei; Kudelina, Karolina; Vaimann, Toomas; Rassõlkin, Anton 2024 International Conference on Electrical Machines (ICEM) 2024 / 7 p <https://doi.org/10.1109/ICEM60801.2024.10700425>

A tool for random test generation targeting high diagnostic resolution

Osimiry, Emmanuel Ovie; Kostin, Sergei; Raik, Jaan; Ubar, Raimund-Johannes BEC 2016 : 2016 15th Biennial Baltic Electronics Conference : proceedings of the 15th Biennial Baltic Electronics Conference : Tallinn University of Technology, October 3-5, 2016, Tallinn, Estonia 2016 / p. 79-82 : ill http://www.eester.ee/record=b2150914*est

Topology-morphing photovoltaic microconverter with wide MPPT voltage window and post-fault operation capability

Vinnikov, Dmitri; Chub, Andrii; Zinchenko, Denys; Sidorov, Vadim IEEE Access 2020 / art. 9171332, p. 153941-153955 : ill <https://doi.org/10.1109/ACCESS.2020.3017805> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; 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](#)

Utilizing the fuzzy logic algorithm for cartesian robot control system in conditions of mechanical damage transmission

Dunaeva, Olga; Autsou, Siarhei; Kudelina, Karolina; Roosileht, Mare IECON 2024 - 50th Annual Conference of the IEEE Industrial Electronics Society IECON Proceedings (Industrial Electronics Conference) 2024 / 5 p <https://doi.org/10.1109/IECON55916.2024.10905445> [Conference proceedings at Scopus](#) [Article at Scopus](#)

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>