

Analysis of possible faults and diagnostic methods of the Cartesian industrial robot

Autsou, Siarhei; Rassõlkin, Anton; Vaimann, Toomas; Kudelina, Karolina Proceedings of the Estonian Academy of Sciences 2022 / p. 227-24 : ill <https://doi.org/10.3176/proc.2022.3.04> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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>

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](#)

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>

Fault diagnosis of additional vibration in Cartesian robot

Autsou, Siarhei 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. 21-22 : ill https://www.ester.ee/record=b5504019*est

Fault diagnosis of the tooth belt transmission of Cartesian robot

Autsou, Siarhei; Vaimann, Toomas; Rassõlkin, Anton; Asad, Bilal; Kudelina, Karolina; Hyunh, 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 (Diagnosticska) 2022 / 4 I <https://doi.org/10.1109/Diagnosticska55131.2022.9905111>

Fault tolerant control and diagnosis strategies for cartesian industrial robot motion control planning system =

Tõrketaluvusega juhtimis- ja diagnostikastrateegiad tööstusliku karteesianroboti liikumise planeerimise juhtimissüsteemi jaoks

Autsou, Siarhei 2025 https://www.ester.ee/record=b5734587*est <https://digikogu.taltech.ee/et/Item/c9afdbf3-354b-41f5-a705-ed924a2af21> <https://doi.org/10.23658/taltech.14/2025>

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

Kudelina, Karolina; Raja, Hadi Ashraf; Autsou, Siarhei; Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants Diagnostika '22 : 2022 International Conference on Diagnostics in Electrical Engineering : Conference proceedings 2022 / 4 p. <https://doi.org/10.1109/Diagnosticska55131.2022.9905149>

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

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

Implementation and analysis of rolling bearing faults caused by shaft currents

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

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 2022 / 5 p. : ill <https://doi.org/10.1109/ME54704.2022.9982815>

Main gear-faults in industrial hitara

Autsou, Siarhei 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 2022 / p. 17-18 : ill https://www.ester.ee/record=b5457278*est

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

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

[at Scopus Article at Scopus](#)

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

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

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

Kudelina, Karolina; Raja, Hadi Ashraf; Autsou, 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; Autsou, 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>

Principles and methods of servomotor control : comparative analysis and applications

Autsou, 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](#)

Reducing of hanger-to-motor oscillations of galvanic line auto-operator

Autsou, Siarhei; **Rassõlkin, Anton; Demidova, Galina; Vaimann, Toomas;** Karpovich, Dzmitry; Saroka, Viktor 2020 XI International Conference on Electrical Power Drive Systems (ICEPDS), Saint-Petersburg, Russia, October 4-7, 2020 2020 / p. 43-48 <https://doi.org/10.1109/ICEPDS47235.2020.9249311>

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>

Studing the impact of gearbox faults on the operations of the cartesian robot

Autsou, Siarhei 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. 17-18 : ill https://www.ester.ee/record=b5570906*est

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](#)

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>

Using a fuzzy regulator to reduce noise

Shumski, Andrei; **Rassõlkin, Anton;** Autsou, 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>

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](#)