

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

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

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

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

Acoustic noise computation of electrical motors using the boundary element method

Sathyan, Sabin; Aydin, Ugur; **Belahcen, Anouar** Energies 2020 / art. 0245 <https://doi.org/10.3390/en13010245> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Active magnetic bearing calibration to compute levitation force in a bearingless synchronous reluctance motor drive

Mukherjee, Victor; **Belahcen, Anouar**; Hinkkanen, Marko Doctoral School of Energy and Geotechnology II : closing conference of the project : Pärnu, Estonia, January 12-17, 2015 2015 / p. 165-168 : ill

Additive Manufacturing and Performance of E-Type Transformer Core

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

Additive manufacturing of 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>

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

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

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

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

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 three-phase induction motor using the dynamic state space model

Asad, Bilal; **Vaimann, Toomas**; **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. 65-69 : ill http://ise.elnet.ee/record=b2950017~S2*est

Analysis of electromagnetic force ripple in a bearingless synchronous reluctance motor

Mukherjee, Victor; Rasilo, Paavo; Martin, Florian; **Belahcen, Anouar** IEEE transactions on magnetics 2021 / art. 9277612, 8 p. : ill <https://doi.org/10.1109/TMAG.2020.3041703> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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>

Analysis of the vibration magnitude of an induction motor with different numbers of broken bars

Martinez, Javier; **Belahcen, Anouar**; Muetze, Annette IEEE transactions on industry applications 2017 / p. 2711-2720 : ill <https://doi.org/10.1109/TIA.2017.2657478> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Analytical model for magnetic anisotropy of non-oriented steel sheets

Martin, Florian; Singh, Deepak; **Belahcen, Anouar**; Rasilo, Paavo; Haavisto, Ari; Arkio, Antero COMPEL : the international journal for computation and mathematics in electrical and electronic engineering 2015 / p. 1475-1488 : ill <http://dx.doi.org/10.1108/COMPEL-02->

Analytical model including rotor eccentricity for bearingless synchronous reluctance motors

Saarakkala, Seppo E.; Mukherjee, Victor; **Belahcen, Anouar** 2018 XIII International Conference on Electrical Machines (ICEM 2018) : Alexandroupoli, Greece, 3-6 September 2018 2018 / p. 1388-1394 : ill <https://doi.org/10.1109/ICELMACH.2018.8506892>

Analytical solution of the magnetic field and EMF calculation in ironless BLDC motor

Liu, Xiangdong; Hu, Hengzai; Zhao, Jing; **Belahcen, Anouar**; Tang, Liang; Yang, Lei IEEE transactions on magnetics 2016 / art. 8100510, [10] p. : ill <https://doi.org/10.1109/TMAG.2015.2481862>

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](#)

Anisotropic and strain-dependent model of magnetostriction in electrical steel sheets

Belahcen, Anouar; Singh, Deepak; Rasilo, Paavo; Martin, Florian; Ghalamestani, Setareh Gorji; Vandevelde, Lieven IEEE transactions on magnetics 2015 / p. 200-204 : ill <https://doi.org/10.1109/TMAG.2014.2361681> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Armature reaction field and inductance calculation of ironless BLDC motor

Liu, Xiangdong; Hu, Hengzai; Zhao, Jing; **Belahcen, Anouar**; Tang, Liang IEEE transactions on magnetics 2016 / art. 8200214, [14] p. : ill <https://doi.org/10.1109/TMAG.2015.2489605>

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>

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 bar indicators for cage induction motors and their relationship with the number of consecutive broken bars

Martinez, Javier; **Belahcen, Anouar**; Arkkio, Antero Electric power applications, IET 2013 / p. 633-642 : ill <https://digital-library.theiet.org/content/journals/10.1049/iet-epa.2012.0338>

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 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>

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>

Calorimetric system for measurement of synchronous machine losses

Rasilo, Paavo; Ekström, J.; Haavisto, Ari; **Belahcen, Anouar**; Arkkio, Antero IET electric power applications 2012 / p. 286-294 : ill <https://homepages.tuni.fi/paavo.rasilo/pubs/Rasilo2012a.pdf>

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](#)

Combined deterministic algorithm and metaheuristic technique for fast and accurate resolution of optimization problems

Martin, Florian; Aydin, Ugur; Sundaria, Ravi; Rasilo, Paavo; **Belahcen, Anouar** 21st International Conference on the Computation of Electromagnetic Fields (Compumag 2017) : Daejeon, South Korea, 18-22 June 2017 2017 / p. 3-4 : ill [http://www.compumag.org/CMAG2017/\[OA1-2\]_131.pdf](http://www.compumag.org/CMAG2017/[OA1-2]_131.pdf)

Combined FE and particle swarm algorithm for optimization of high speed PM synchronous machine

Belahcen, Anouar; Martin, Florian; El Hadi Zaim, Mohammed; Dlala, Emad; Kolondzovski, Zlatko COMPEL : the international journal for computation and mathematics in electrical and electronic engineering 2015 / p. 475-484 : ill <http://dx.doi.org/10.1108/COMPEL-07-2014-0168>

Combined FE and two dimensional spectral analysis of broken cage faults in induction motors

Martinez, Javier; **Belahcen, Anouar**; Arkkio, Antero Proceedings : IECON 2013 - 39th Annual Conference of the IEEE Industrial Electronics Society : Vienna, Austria, 10-14 November, 2013 2013 / p. 2674-2679 : ill <https://ieeexplore.ieee.org/document/6699553>

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 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 inner and outer rotor bearingless synchronous reluctance motors

Mukherjee, Victor; Sokolov, Maxim; Pippuri, Jenni; Hinkkanen, Marko; **Belahcen, Anouar** The journal of engineering 2019 / p. 4375–4379 <http://dx.doi.org/10.1049/joe.2018.8195>

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 model order reduction methods for a switched reluctance machine characterization

Boumesbah, Allaa Eddine; Martin, Florian; Krebs, Guillaume; **Belahcen, Anouar**; Marchand, Claude IEEE transactions on magnetics 2021 / art. 9355193, 7 p. : ill <https://doi.org/10.1109/TMAG.2021.3059969> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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>

Comprehensive computations of the response of faulty cage induction machines

Belahcen, Anouar; Martinez, Javier; **Vaimann, Toomas** Proceedings of the 2014 International Conference on Electrical Machines (ICEM) 2014 / p. 1504-1509 : ill

Computation of hysteresis torque and losses in a bearingless synchronous reluctance machine

Belahcen, Anouar; Mukherjee, Victor; Martin, Florian; Rasilo, Paavo 21st International Conference on the Computation of Electromagnetic Fields (Compumag 2017) : Daejeon, South Korea, 18-22 June 2017 2017 / p. 214-215 : ill [http://www.compumag.org/CMAG2017/\[PA-A5-10\]_129.pdf](http://www.compumag.org/CMAG2017/[PA-A5-10]_129.pdf)

Computation of hysteresis torque and losses in a bearingless synchronous reluctance machine

Belahcen, Anouar; Mukherjee, Victor; Martin, Florian; Rasilo, Paavo IEEE transactions on magnetics 2018 / art. 7300804, 4 p. : ill <https://doi.org/10.1109/TMAG.2017.2765080> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Computation of magnetic forces using degenerated air-gap element

Sathyan, Sabin; **Belahcen, Anouar**; Kataja, Juhani; Henrotte, Francois; Benabou, Abdelkader; Le Menach, Yvonnick IEEE transactions on magnetics 2017 / 7401304, 4 p. : ill <https://doi.org/10.1109/TMAG.2017.2656239>

Computation of stator vibration of an induction motor using nodal magnetic forces [Online resource]

Sathyan, Sabin; **Belahcen, Anouar**; Kataja, Juhani; **Vaimann, Toomas**; Sobra, Jan 2016 XXII International Conference on Electrical

Machines (ICEM) : SwissTech Convention Center, Lausanne, Switzerland, 04-07 September, 2016 : proceedings 2016 / p. 2198-2203 : ill <https://doi.org/10.1109/ICELMACH.2016.7732827>

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 / p. 233-241 : ill <http://dx.doi.org/10.1109/WEMDCD.2015.7194535>

Constrained algorithm for the selection of uneven snapshots in model order reduction of a bearingless motor

Mukherjee, Victor; Far, Mehrnaz Farzam; Martin, Florian; **Belahcen, Anouar** IEEE transactions on magnetics 2017 / art. 7205304, 4 p. : ill <http://dx.doi.org/10.1109/TMAG.2017.2664505>

Contribution of Maxwell stress in air on the deformations of induction machines

Fonteyn, Katarzyna Anna; **Belahcen, Anouar**; Rasilo, Paavo; Kouhia, Reijo; Arkkio, Antero Journal of electrical engineering and technology 2012 / p. 336-341 : ill <https://ieeexplore.ieee.org/document/5664487>

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

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

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 U.**; **Belahcen, Anouar** IET Electric Power Applications 2025 <http://dx.doi.org/10.1049/elp2.12529>

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

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

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

Raja, Hadi Ashraf; **Raval, Hardik**; **Vaimann, Toomas**; **Kallaste, Ants**; **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>

Coupled magneto-mechanical analysis of iron sheets under biaxial stress

Aydin, U.; Rasilo, Paavo; Singh, Deepak; Lehtikoinen, Antti; **Belahcen, Anouar**; Arkkio, Antero IEEE transactions on magnetics 2016 / art. 2000804, [4] p. : ill <https://doi.org/10.1109/TMAG.2015.2496207>

Coupled wave-equation and eddy-current model for modelling and measuring propagating stress-waves

Peussa, Tommi; **Belahcen, Anouar** Archives of electrical engineering 2015 / p. 215-226 : ill <http://dx.doi.org/10.1515/ae-2015-0018>

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>

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>

Demagnetization in permanent magnet slotless generator using Halbach array

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

Demagnetization on permanent magnet machine with Halbach array

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

Design 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 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 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 of permanent magnet clutch

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

Design optimization of permanent magnet clutch with Ārtap framework

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

Detection of broken bars in frequency converter fed induction motor using Park's vector approach

Vaimann, Toomas; Belahcen, Anouar; Martinez, Javier; Kilk, Aleksander PQ2012 : 8th International Conference : 2012 Electric Power Quality and Supply Reliability : June 11-13, 2012, Tartu, Estonia : conference proceedings 2012 / p. 53-56 : ill https://www.researchgate.net/publication/261051228_Detection_of_broken_bars_in_frequency_converter_fed_induction_motor_using_Park's_vector_approach

Detection of induction motor broken bars in grid and frequency converter supply

Vaimann, Toomas; Belahcen, Anouar; Martinez, Javier; Kilk, Aleksander Riga Technical University 53rd International Scientific Conference dedicated to the 150th anniversary and the 1st Congress of World Engineers and Riga Polytechnical Institute/RTU Alumni : 11-12 October 2012, Riga, Latvia : [abstracts] 2012 / p. 112 : ill https://www.researchgate.net/publication/262674778_Detection_of_induction_motor_broken_bars_in_grid_and_frequency_converter_supply

Detection of induction motor broken bars in grid and frequency converter supply

Vaimann, Toomas; Belahcen, Anouar; Martinez, Javier; Kilk, Aleksander Przegląd elektrotechniczny 2014 / p. 90-94 : ill <https://www.pe.org.pl/articles/2014/1/22.pdf> [Journal metrics at Scopus](#) [Article at Scopus](#)

Determination of core losses using an inverse modeling technique

Osemwinyen, Osaruyi; Hemeida, Ahmed; Ghahfarokhi, Payam Shams; Belahcen, Anouar IEEE Access 2022 / p. 29224-29232 <https://doi.org/10.1109/ACCESS.2022.3158365> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Determination of forced convection coefficient over a flat side of coil

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

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

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

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

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

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

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

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

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

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

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

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 control methods for synchronous reluctance motors = Sünkroonreluktantsmootorite juhtimismeetodite edasiarendus

Heidari, Hamidreza 2022 <https://doi.org/10.23658/taltech.8/2022> <https://digikogu.taltech.ee/et/Item/f249726a-f96c-4d94-b892-afc9ae4fda9e> https://www.ester.ee/record=b5491774*est

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

Diagnostics of induction machine rotor faults using analysis of stator signals = Asünkroonmasina rootori diagnostika staatorisignaali uurimise meetodil

Vaimann, Toomas 2014 https://www.ester.ee/record=b4376858*est

Domain decomposition approach for efficient time-domain finite-element computation of winding losses in electrical machines

Lehikoinen, Antti; Ikäheimo, Jouni; Arkkio, Antero; Belahcen, Anouar IEEE transactions on magnetics 2017 / art. 7400609, 9 p. : ill <https://doi.org/10.1109/TMAG.2017.2681045>

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

Dynamic state space model based analysis of a three-phase induction motor using nonlinear magnetization inductance

Asad, Bilal; Vaimann, Toomas; Rassõlkin, Anton; Belahcen, Anouar 19th International Scientific Conference on Electric Power Engineering (EPE 2018) : Brno, Czech Republic, 16 - 18 May 2018 2018 / p. 260-265 : ill <https://doi.org/10.1109/EPE.2018.8396039>

Effect of Magnetic Forces and Magnetostriction on the Stator Vibrations of a Bearingless Synchronous Reluctance Motor

Mukherjee, Victor; Rasilo, Paavo; Martin, Florian; Belahcen, Anouar IEEE transactions on magnetics 2019 / 4 p. : ill <https://doi.org/10.1109/TMAG.2019.2894739> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effect of mechanical stress on excess loss of electrical steel sheets

Singh, Deepak; Rasilo, Paavo; Martin, Florian; Belahcen, Anouar; Arkkio, Antero IEEE transactions on magnetics 2015 / [4] p. : ill <http://dx.doi.org/10.1109/TMAG.2015.2449779>

Effect of mechanical stress on magnetization and magnetostriction strain behavior of non-oriented Si-Fe steels at different directions and under pseudo-DC conditions

Lahyaoui, Otmame; Lanfranchi, Vincent; Buiron, Nicolas; Martin, Florian; Aydin, Ugur; Belahcen, Anouar International journal of applied electromagnetics and mechanics 2019 / p. 299-312 <https://doi.org/10.3233/JAE-180106>

Effect of multi-axial stress on iron losses of electrical steel sheets

Aydin, Ugur; Rasilo, Paavo; Martin, Florian; Belahcen, Anouar Journal of magnetism and magnetic materials 2019 / p. 19-27 : ill <https://doi.org/10.1016/j.jmmm.2018.08.003>

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>

Effect of punching the electrical sheets on optimal design of a permanent magnet synchronous motor

Martin, Florian; Aydin, Ugur; Sundaria, Ravi; Rasilo, Paavo; Belahcen, Anouar; Arkkio, Antero IEEE Transactions on Magnetics 2018 / art. 8102004 <https://doi.org/10.1109/TMAG.2017.2768399> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effect of rotor pole-shoe construction on losses of inverter-fed synchronous motors

Rasilo, Paavo; Belahcen, Anouar; Arkkio, Antero IEEE transactions on industry applications 2014 / p. 208-217 : ill

Effect of rotor pole-shoe construction on losses of inverter-fed synchronous motors

Rasilo, Paavo; **Belahcen, Anouar**; Arkkio, Antero Proceedings : 2012 XXth International Conference on Electrical Machines : Palais des Congrès et des Expositions de Marseille Marseille, France, 02-05 September, 2012 / p. 1282-1286 : ill <https://ieeexplore.ieee.org/document/6350042>

Effects of stator core welding on an induction machine – measurements and modeling

Sundaria, Ravi; Daem, Andries; Osemwinyen, Osaruyi; Lehtikoinen, Antti; Sergeant, Peter; Arkkio, Antero; **Belahcen, Anouar** Journal of Magnetism and Magnetic Materials 2020 / art. 166280 <https://doi.org/10.1016/j.jmmm.2019.166280> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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), Kärdla, Estonia, June 12-15, 2019 : proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/PQ.2019.8818252>

EMSA 2016 publications chairs preface

Manzin, Alessandra; Asenjo, Agustina; **Belahcen, Anouar**; Butta, Mattia IEEE transactions on magnetics 2017 / 0200603, p. 1-3 : fot <https://doi.org/10.1109/TMAG.2017.2670446>

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>

Equivalent strain and stress models for the effect of mechanical loading on the permeability of ferromagnetic materials

Rasilo, Paavo; Aydin, Ugur; Martin, Florian; **Belahcen, Anouar**; Kouhia, Reijo; Daniel, Laurent IEEE transactions on magnetics 2019 / art. 2002104, <https://doi.org/10.1109/TMAG.2018.2890407>

Estimation of additional losses due to random contacts at the edges of stator of an electrical machine

Shah, Sahas Bikram; Rasilo, Paavo; **Belahcen, Anouar**; Arkkio, Antero COMPEL : the international journal for computation and mathematics in electrical and electronic engineering 2015 / p. 1501-1510 : ill <http://dx.doi.org/10.1108/COMPEL-02-2015-0083>

Example of automatic safety systems based on power line communication and Microsoft Azure

Daukaev, Kamil; Rassõlkin, Anton; 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 / p. 95-96 : ill http://www.ester.ee/record=b4650094*est

Experimental determination and numerical evaluation of core losses in a 150-kVA wound-field synchronous machine

Rasilo, Paavo; **Belahcen, Anouar**; Arkkio, Antero Electric power applications, IET 2013 / p. 97-105 : ill <https://ietresearch.onlinelibrary.wiley.com/doi/full/10.1049/iet-epa.2012.0242>

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

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

Flexible identification procedure for thermodynamic constitutive models for magnetostrictive materials

Rasilo, Paavo; Singh, Deepak; Jeronen, Juha; Aydin, Ugur; Martin, Florian; **Belahcen, Anouar**; Daniel, Laurent; Kouhia, Reijo Proceedings of the Royal Society. A, Mathematical, physical & engineering sciences 2019 / 21 p <https://doi.org/10.1098/rspa.2018.0280>

Flux-weakening control for IPMSM employing model order reduction

Far, Mehrnaz Farzam; Mustafa, Bilal; Martin, Florian; Rasilo, Paavo; **Belahcen, Anouar** 2018 XIII International Conference on Electrical Machines (ICEM 2018) : Alexandroupoli, Greece, 3-6 September 2018 / p. 1510–1516 : ill <http://doi.org/10.1109/ICELMACH.2018.8506693>

Generation of unmeasured loading levels data for condition monitoring of induction machine using machine learning

Billah, Md Masum; Saberi, Alireza Nemat; Hemeida, Ahmed; Martin, Florian; **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>

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

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

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

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

<https://doi.org/10.1109/EDPC53547.2021.9684208>

Harmonic spectrum analysis of induction motor with broken rotor bar fault

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

<https://doi.org/10.1109/RTUCON.2018.8659842>

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

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

A High-performance open-source finite element analysis library for magnetism in MATLAB

Lehikoinen, Antti; Davidsson, T.; Arkkio, Antero; **Belahcen, Anouar** 2018 XIII International Conference on Electrical Machines (ICEM 2018) : Alexandroupoli, Greece, 3-6 September 2018 2018 / p. 486-492 : ill <http://doi.org/10.1109/ICELMACH.2018.8507235>

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>

Homogenization of multiscale eddy current problem by localized orthogonal decomposition method

Ren, Xiaotao; Hannukainen, Antti; **Belahcen, Anouar** IEEE transactions on magnetism 2019 / art. 7500204, 4 p <https://doi.org/10.1109/TMAG.2019.2917400>

Homogenization technique for axially laminated rotors of synchronous reluctance machines

Martin, Florian; **Belahcen, Anouar;** Lehikoinen, Antti; Rasilo, Paavo IEEE transactions on magnetism 2015 / [6] p. : ill <http://dx.doi.org/10.1109/TMAG.2015.2463262>

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

Pando-Acedo, Jaime; **Rassõlkin, Anton;** Lehikoinen, Antti; **Vaimann, Toomas; Kallaste, Ants;** Romero-Cadaval, Enrique; **Belahcen, Anouar** 2019 IEEE 12th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDMPED), 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.csste.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 of synchronous machine magnetization characteristics from calorimetric core-loss and no-load curve measurements

Rasilo, Paavo; Abdallah, Ahmed Abou-Elyazied; **Belahcen, Anouar;** Arkkio, Antero; Dupré, Luc IEEE transactions on magnetism 2015 / [4] p. : ill <http://dx.doi.org/10.1109/TMAG.2014.2354055>

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 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>

Importance of iron-loss modeling in simulation of wound-field synchronous machines

Rasilo, Paavo; **Belahcen, Anouar**; Arkkio, Antero IEEE transactions on magnetics 2012 / p. 2495-2504 : ill <https://ieeexplore.ieee.org/document/6186824>

Improved sampling algorithm for stochastic modelling of random-wound electrical machines

Lehikoinen, Antti; Chiodetto, Nicola; Arkkio, Antero; **Belahcen, Anouar** The journal of engineering 2019 / p. 3976–3980 <https://doi.org/10.1049/joe.2018.8093>

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](#)

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 magnetic forces and magnetostriction on the vibration behavior of an induction motor

Sathyan, Sabin; Aydin, Ugur; Lehikoinen, Antti; **Belahcen, Anouar; Vaimann, Toomas**; Kataja, Juhani International journal of applied electromagnetics and mechanics 2019 / p. 825-834 <https://doi.org/10.3233/JAE-171045> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Investigation of the causes behind the vibrations of a high-speed solid-rotor induction motor

Sathyan, Sabin; **Belahcen, Anouar**; Lehikoinen, Antti; Aydin, Ugur; Boxberg, Fredrik Journal of sound and vibration 2019 / art. 114976, 14 p <https://doi.org/10.1016/j.jsv.2019.114976> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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

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

IoT based tools for data acquisition in electrical machines and robotics

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

Iron losses, magnetoelasticity and magnetostriction in ferromagnetic steel laminations

Rasilo, Paavo; Singh, Deepak; **Belahcen, Anouar**; Arkkio, Antero IEEE transactions on magnetics 2013 / p. 2041-2044 : ill <https://homepages.tuni.fi/paavo.rasilo/pubs/Rasilo2013b.pdf>

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

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](#)

Loss model for the effects of steel cutting in electrical machines

Sundaria, Ravi; Nair, D. G.; Lehtikoinen, Antti; Arkkio, Antero; **Belahcen, Anouar** 2018 XIII International Conference on Electrical Machines (ICEM 2018) : Alexandroupoli, Greece, 3-6 September 2018 2018 / p. 1260–1266 : ill
<http://doi.org/10.1109/ICELMACH.2018.8506822>

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

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

Magnetic 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, Florian; Rasilo, Paavo; **Belahcen, Anouar** IEEE transactions on magnetics 2024 / art. 8200704
<https://doi.org/10.1109/TMAG.2023.3306207>

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](#)

Magneto-mechanical modeling of electrical steel sheets

Aydin, Ugur; Rasilo, Paavo; Martin, Florian; Singh, Deepak; Daniel, Laurent; **Belahcen, Anouar**; Rekik, Mahmoud; Hubert, Olivier; Kouhia, Reijo; Arkkio, Antero Journal of magnetism and magnetic materials 2017 / p. 82-90 : ill
<https://doi.org/10.1016/j.jmmm.2017.05.008>

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

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

Mechanical vibration analysis of induction machine under dynamic rotor eccentricity [Electronic resource]

Sobra, Jan; **Vaimann, Toomas**; **Belahcen, Anouar** 2016 17th International Scientific Conference on Electric Power Engineering (EPE) : proceedings 2016 / [4] p. : ill. [USB] <https://doi.org/10.1109/EPE.2016.7521732>

Mixed-order finite-element modeling of magnetic material degradation due to cutting

Sundaria, Ravi; Lehtikoinen, Antti; Hannukainen, Antti; Arkkio, Antero; **Belahcen, Anouar** IEEE transactions on magnetics 2018 / art. 7402008, 8 p. : ill <http://dx.doi.org/10.1109/TMAG.2018.2811385>

Model for stress-dependent hysteresis in electrical steel sheets including orthotropic anisotropy

Rasilo, Paavo; Steentjes, S.; **Belahcen, Anouar**; Kouhia, Reijo; Hameyer, Kay IEEE transactions on magnetics 2017 / art. 2001004, 4 p. : ill <http://dx.doi.org/10.1109/TMAG.2017.2659784>

Model of magnetic anisotropy of non-oriented steel sheets for finite-element method

Martin, Florian; Singh, Deepak; Rasilo, Paavo; **Belahcen, Anouar**; Arkkio, Antero IEEE transactions on magnetics 2016 / [4] p. : ill
<http://dx.doi.org/10.1109/TMAG.2015.2488100>

Model order reduction of bearingless reluctance motor including eccentricity

Far, Mehrnaz Farzam; Mukherjee, Victor; **Belahcen, Anouar** 2018 XIII International Conference on Electrical Machines (ICEM 2018) : Alexandroupoli, Greece, 3-6 September 2018 2018 / p. 2243–2249 : ill <http://doi.org/10.1109/ICELMACH.2018.8506758>

Model order reduction of electrical machines with multiple inputs

Farzam Far, Mehrnaz; **Belahcen, Anouar**; Rasilo, Paavo; Clenet, Stephane; Pierquin, Antoine IEEE transactions on industry applications 2017 / p. 3355-3360 : ill <https://doi.org/10.1109/TIA.2017.2681967> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modeling of hysteresis losses in ferromagnetic laminations under mechanical stress

Rasilo, Paavo; Singh, Deepak; Aydin, U.; Martin, Florian; Kouhia, Reijo; **Belahcen, Anouar**; Arkkio, Antero IEEE transactions on magnetics 2016 / art. 7300204, [4] p. : ill <http://dx.doi.org/10.1109/TMAG.2015.2468599>

Modeling the Effect of Multiaxial Stress on Magnetic Hysteresis of Electrical Steel Sheets : A Comparison

Aydin, Ugur; Rasilo, Paavo; Martin, Florian; Singh, Deepak; **Belahcen, Anouar** IEEE transactions on magnetics 2017 / art. 2000904, 4 p. : ill <http://dx.doi.org/10.1109/TMAG.2017.2658676>

Modelling anisotropy in non-oriented electrical steel sheet using vector Jiles-Atherton model

Upadhaya, Brijesh; Martin, Florian; Rasilo, Paavo; Handgruber, Paul; **Belahcen, Anouar**; Arkkio, Antero COMPEL : The international journal for computation and mathematics in electrical and electronic engineering 2017 / p. 764-773 : ill <https://doi.org/10.1108/COMPEL-09-2016-0399> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modelling of magnetic and electric circuits

Demenko, Andrzej; **Belahcen, Anouar**; Hameyer, Kay; Pietrowski, Wojciech; Brock, Stefan COMPEL : The international journal for computation and mathematics in electrical and electronic engineering 2017 / p. 578-579 <http://dx.doi.org/10.1108/COMPEL-02-2017-0054>

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 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-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>

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>

Natural convection from flat side's of coil system

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

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

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

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](#)

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

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

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

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

Operation and principles of bearingless synchronous reluctance machines

Belahcen, Anouar 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. 53-54 : ill https://www.eester.ee/record=b5183874*est

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

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

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](#)

Orthogonal interpolation method for order reduction of a synchronous machine model

Far, Mehrmaz Farzam; Martin, Florian; **Belahcen, Anouar**; Montier, Laurent; Henneron, Thomas IEEE transactions on magnetics 2018 / 8100506, p. 1-6 : ill <https://doi.org/10.1109/TMAG.2017.2768328> [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

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

Heidari, Hamidreza; **Rassölkin, 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](#)

Park's vector approach for detection of broken rotor bars in frequency converter fed induced generator

Vaimann, Toomas; **Belahcen, Anouar**; Martinez, Javier; **Kilk, Aleksander** Proceedings of the 13th International Scientific Conference Electric Power Engineering 2012 : EPE 2012 : Brno. Vol. 2 2012 / p. 985-988 : ill https://www.academia.edu/17399045/Parks_Vector_Approach_for_Detection_Broken_Rotor_Bars_in_Frequency_Converter_Fed_Induction_Generator

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 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>

Reduced basis finite element modeling of electrical machines with multiconductor windings

Lehikoinen, Antti; Arkkio, Antero; **Belahcen, Anouar** IEEE transactions on industry applications 2017 / p. 4252-4259 : ill <https://doi.org/10.1109/TIA.2017.2696509> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Research on the performances and parameters of interior PMSM used for electric vehicles

Liu, Xiangdong; Chen, Hao; Zhao, Jing; **Belahcen, Anouar** IEEE transactions on industrial electronics 2016 / p. 3533-3545 : ill <https://doi.org/10.1109/TIE.2016.2524415>

Re-use and recycling of different electrical machines

Rassölkin, 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](#)

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

Daukaev, Kamil; **Rassölkin, 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**; **Rassölkin, 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 loss calculation reduction control methods of permanent magnet assisted reluctance drive

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

A review of synchronous reluctance motor-drive advancements

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

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

Ghahfarokhi, Payam Shams; **Kallaste, Ants**; **Vaimann, Toomas**; **Belahcen, Anouar** 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärdla, Estonia, June 12-15,

Review of thermal analysis of permanent magnet assisted synchronous reluctance machines

Ghahfarokhi, Payam Shams; 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>

Rotational single sheet tester for multiaxial magneto-mechanical effects in steel sheets

Aydin, Ugur; Martin, Florian; Rasilo, Paavo; **Belahcen, Anouar** IEEE transactions on magnetics 2019 / art. 2001810, 10 p. : ill <https://doi.org/10.1109/TMAG.2018.2889238>

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>

Segregation of iron losses from rotational field measurements and application to electrical machine

Belahcen, Anouar; Rasilo, Paavo; Arkkio, Antero IEEE transactions on magnetics 2014 / p. 893-896 : ill <https://doi.org/10.1109/TMAG.2013.2284606> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A Simple and efficient quasi-3D magnetic equivalent circuit for surface axial flux permanent magnet synchronous machines

Hemeida, Ahmed; Lehtikoinen, Antti; Rasilo, Paavo; Vansompel, Hendrik; **Belahcen, Anouar** IEEE transactions on industrial electronics 2019 / p. 8318-8333 : ill <https://doi.org/10.1109/TIE.2018.2884212>

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

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

Stator voltage analysis of frequency converter fed induction generator with broken rotor bars

Vaimann, Toomas; Belahcen, Anouar; Martinez, Javier; 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. 249-251 : ill

Steady-state thermal model of a synchronous reluctance motor

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

Steady-state thermal modeling of salient pole synchronous generator

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

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>

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, Usman Muhammad**; Belahcen, Anouar 2025 IEEE Workshop on Electrical Machines Design, Control and Diagnosis (WEMDCD) 2025 / 6 p <https://doi.org/10.1109/WEMDCD61816.2025.11014141>

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 Advances in machine fault diagnosis 2022 / p. 27-41 <https://doi.org/10.3390/app10217572>

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 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>

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

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

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

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

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

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

Thermal analysis of electromagnetic levitation coil [Electronic resource]

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

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

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

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

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

Thermal model of a synchronous reluctance motor

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

Thermal modeling of a TEFC synchronous reluctance motor

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

Thermographic measurement and simulation of power losses due to interlaminar contacts in electrical sheets

Shah, Sahas Bikram; Osemwinyen, Osaruyi; Rasilo, Paavo; Belahcen, Anouar; Arkio, Antero IEEE transactions on instrumentation and measurement 2018 / p. 2628–2634 : ill <https://doi.org/10.1109/TIM.2018.2829321>

3-D eddy current analysis in steel laminations of electrical machines as a contribution for improved iron loss modeling

Handgruber, Paul; Sterneck, Andrej; Biro, Oszkar; Belahcen, Anouar; Dlala, Emad Proceedings : 2012 XXth International Conference on Electrical Machines : Palais des Congrès et des Expositions de Marseille Marseille, France, 02-05 September, 2012 2012 / p. 16-22 : ill <https://ieeexplore.ieee.org/document/6510501>

Three-dimensional eddy-current analysis in steel laminations of electrical machines as a contribution for improved iron loss modeling

Handgruber, Paul; Sterneck, Andrej; Biro, Oszkar; Belahcen, Anouar; Dlala, Emad IEEE transactions on industry applications 2013 / p. 2044-2052 : ill <https://doi.org/10.1109/TIA.2013.2260713> <https://ieeexplore.ieee.org/document/6510501> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

3D permeance model of induction machines taking into account saturation effects and its connection with stator current and shaft speed spectra

Martinez, Javier; Belahcen, Anouar; Arkio, Antero IET electric power applications 2015 / p. 20-29 : ill <http://dx.doi.org/10.1049/iet-epa.2014.0013>

Transient modeling and recovery of non-stationary fault signature for condition monitoring of induction motors
Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Ghahfarokhi, Payam Shams Advances in machine fault diagnosis 2022 / p. 43-59 <https://doi.org/10.3390/app11062806>

Transient modeling and recovery of non-stationary fault signature for condition monitoring of induction motors
Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Ghahfarokhi, Payam Shams; Kudelina, Karolina Applied sciences 2021 / 17 p. : ill <https://doi.org/10.3390/app11062806> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A 2D FEM model for transient and fault analysis of induction machines

Martinez, Javier; **Belahcen, Anouar**; Arkkio, Antero Przegląd elektrotechniczny = Electrical review 2012 / p. 157-160 : ill <http://pe.org.pl/articles/2012/7b/41.pdf>

A 2D magnetic and 3D mechanical coupled finite element model for the study of the dynamic vibrations in the stator of induction motors

Martinez, Javier; **Belahcen, Anouar**; Detoni, Joaquim G. Mechanical systems and signal processing 2016 / p. 640-656 : ill <http://dx.doi.org/10.1016/j.ymssp.2015.06.014>

Uncertainty propagation of iron loss from characterization measurements to computation of electrical machines

Belahcen, Anouar; Rasilo, Paavo; Nguyen, Thu-Trang; Clénet, Stephane COMPEL : The international journal for computation and mathematics in electrical and electronic engineering 2015 / p. 624-636 : ill <http://dx.doi.org/10.1108/COMPEL-10-2014-0271>

Uncertainty quantification of input parameters in a 2D finite-element model for broken rotor bar in an induction machine

Billah, Md Masum; Martin, Florian; **Belahcen, Anouar**; Balasubramanian, Aswin; **Vaimann, Toomas**; Sobra, Jan IEEE transactions on magnetics 2022 / art. 8205804 <https://doi.org/10.1109/TMAG.2022.3173663> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Vibration and stator current spectral analysis of induction machine operating under dynamic eccentricity

Sobra, Jan; **Belahcen, Anouar**; **Vaimann, Toomas** 2015 International Conference on Electrical Drives and Power Electronics (EDPE) : 18th International Conference, 7th Joint Slovakian-Croatian Conference : proceedings : Hotel Slovan, Tatranska Lomnica, The High Tatras, Slovakia, September 21-23, 2015 2015 / p. 285-290 : ill <http://dx.doi.org/10.1109/EDPE.2015.7325307>

Vibration as fault indicator in electrical machines

Farzam Far, Mehmaz; **Belahcen, Anouar**; Arkkio, Antero; Roivainen, Janne Doctoral School of Energy and Geotechnology II : closing conference of the project : Pärnu, Estonia, January 12-17, 2015 2015 / p. 120-125 : ill

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>