

Additively manufactured and topology optimized heatsink for a propulsion motor

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

Automatic tolerance analysis of permanent magnet machines with encapsulated FEM Models using Digital-Twin-Distiller

Orosz, Tamas; Gadó, Krisztián; Katona, Mihály; **Rassölkin, Anton** Processes 2021 / art. 2077, p. 1-15 : ill <https://doi.org/10.3390/pr9112077> [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; Bouharrouiti, 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>

Challenges of additive manufacturing of electrical machines

Tiismus, Hans; Kallaste, Ants; Belahcen, Anouar; Rassölkin, 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>

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 and fault detection for electrical machines using IOT

Raja, Hadi Ashraf; Vaimann, Toomas; Rassölkin, Anton; Kallaste, Ants Proceedings of the Future Technologies Conference (FTC) 2022. Volume 2 2023 / p. 162-173 https://doi.org/10.1007/978-3-031-18458-1_12 [Conference proceedings at Scopus](#) [Article at Scopus](#)

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

Vaimann, Toomas; Kudrjavitsev, Oleg; Kilk, Aleksander; Kallaste, Ants; Rassölkin, Anton Advances in electrical and electronic engineering 2018 / p. 271-278 : ill <https://doi.org/10.15598/aeet.v16i3.2698> [Journal metrics at Scopus](#) [Article at Scopus](#)

Design of an additively manufactured polymer composite electrical machine

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

Design of an additively manufactured thermal solution for an axial flux switched reluctance motor

Sarap, Martin; Singh, Shalini; **Kallaste, Ants;** Jawad Qureshi, Ahmed Jawad; **Tiismus, Hans; Vaimann, Toomas;** Shams Ghahfarokhi, Payam Case studies in thermal engineering 2025 / art. 105805 <https://doi.org/10.1016/j.csite.2025.105805>

Development and utilization of synthetic signals for fault diagnostics of electrical machines

Raja, Hadi Ashraf; Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas; Rassölkin, Anton; Kallaste, Ants IEEE journal of emerging and selected topics in industrial electronics 2024 / 9 p <https://doi.org/10.1109/JESTIE.2024.3395650>

Direct conductor cooling of outer-rotor machine enabled by additive manufacturing

Sarap, Martin; Kallaste, Ants; Shams Ghahfarokhi, Payam; Tiismus, Hans; Vaimann, Toomas 2023 IEEE International Conference on Electric Machines and Drives (IEMDC) 2023 / 4 p <https://doi.org/10.1109/IEMDC55163.2023.10238858>

The effect of build direction on the thermal conductivity of additively manufactured AIS10Mg and silicon-steel samples

Sarap, Martin; Kallaste, Ants; Shams Ghahfarokhi, Payam; Tiismus, Hans; Vaimann, Toomas 2022 International Conference on Electrical Machines (ICEM) 2022 / p. 538-543 <https://doi.org/10.1109/ICEM51905.2022.9910944>

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 and thermal anisotropy in additively manufactured AISi10Mg and Fe-Si samples

Sarap, Martin; Tiismus, Hans; Kallaste, Ants; Saarna, Mart; Kolnes, Märt; Shams Ghahfarokhi, Payam; **Vaimann, Toomas** Machines 2025 / art. 1 <https://doi.org/10.3390/machines13010001>

Electrical resistivity of additively manufactured silicon steel for electrical machine fabrication

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Rassõlkin, Anton; Belahcen, Anouar 2019 Electric Power Quality and Supply Reliability Conference (PQ) & 2019 Symposium on Electrical Engineering and Mechatronics (SEEM), Kärda, Estonia, June 12-15, 2019 : proceedings 2019 / 4 p. : ill <https://doi.org/10.1109/PQ.2019.8818252>

Evaluation of 3D-printed magnetic materials for additively-manufactured electrical machines

Selema, Ahmed; Beretta, Margherita; Van Coppenolle, Matty; **Tiismus, Hans; Kallaste, Ants;** Ibrahim, Mohamed N.; Rombouts, Marleen; Vleugels, Jozef; Kestens, Leo A.I.; Sergeant, Peter Journal of magnetism and magnetic materials 2023 / art. 170426, 12 p. : ill <https://doi.org/10.1016/j.jmmm.2023.170426> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Fault detection and predictive maintenance of electrical machines : perspective chapter

Raja, Hadi Ashraf; Kudelina, Karolina; Asad, Bilal; Vaimann, Toomas New Trends in Electric Machines - Technology and Applications 2022 <https://doi.org/10.5772/intechopen.107167>

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](#)

Improved diagnostic approach for BRB detection and classification in inverter-driven induction motors employing sparse stacked autoencoder (SSAE) and lightGBM

Khan, Muhammad Amir; Asad, Bilal; Vaimann, Toomas; Kallaste, Ants Electronics (Switzerland) 2024 / art. 1292 <https://doi.org/10.3390/electronics13071292> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Improved 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>

Laser additively manufactured magnetic core design and process for electrical machine applications

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Lind, Liina; Virro, Indrek; Rassõlkin, Anton; Dedova, Tatjana Energies 2022 / art. 3665 <https://doi.org/10.3390/en15103665> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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.; Lehikoinen, 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>

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

Sundaria, Ravi; Lehikoinen, 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 order reduction of electrical machines with multiple inputs

Farzam Far, Mehrmaz; **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](#)

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](#)

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

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

Robust design optimization and emerging technologies for electrical machines: challenges and open problems

Orosz, Tamas; **Rassölkin, Anton; Kallaste, Ants;** Arsenio, Pedro; Panek, David; Kaska, Jan; Karban, Pavel Applied sciences 2020 / art. 6653, 33 p. : ill <https://doi.org/10.3390/app10196653> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

State of the art of additively manufactured electromagnetic materials for topology optimized electrical machines

Tiismus, Hans; Kallaste, Ants; Vaimann, Toomas; Rassölkin, Anton Additive manufacturing 2022 / art. 102778, 19 p. : ill
<https://doi.org/10.1016/j.addma.2022.102778> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

State-of-the-Art techniques for fault diagnosis in electrical machines: Advancements and future directions

Akbar, Siddique; Vaimann, Toomas; Asad, Bilal; Kallaste, Ants; Sardar, Muhammad Usman; Kudelina, Karolina Energies 2023 / Art. 6345 <https://doi.org/10.3390/en16176345> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Steady-state thermal modeling of salient pole synchronous generator

Shams Ghahfarokhi, Payam; Podgornovs, Andrejs; **Kallaste, Ants;** Cardoso, Antonio J. Marques; **Belahcen, Anouar; Vaimann, Toomas;** Kudrjavev, 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](#)

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

Shams Ghahfarokhi, Payam; Kallaste, Ants; Podgornovs, Andrejs; **Belahcen, Anouar; Vaimann, Toomas;** Kudrjavev, 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>

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

Sarap, Martin; Kallaste, Ants; Shams Ghahfarokhi, Payam; Tiismus, Hans; Vaimann, Toomas Machines 2022 / art. 251
<https://doi.org/10.3390/machines10040251> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)