

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; Shams Ghahfarokhi, Payam 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](#)

Additive Manufacturing and Performance of E-Type Transformer Core

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

Additively manufactured advanced thermal management solutions for electrical machines = Kihltisandusmeetodil valmistatud täiustatud jahutuslahendused elektrimasinatele

Sarap, Martin 2025 https://www.ester.ee/record=b5755150*est <https://digikogu.taltech.ee/et/Item/e8fe803d-bbda-41c5-b78d-3aef7b1fd504> <https://doi.org/10.23658/taltech.54/2025>

Analysis of advanced passive heatsinks for electrical machines enabled by additive manufacturing

Sarap, Martin; Kallaste, Ants; Shams Ghahfarokhi, Payam; Vaimann, Toomas 2023 IEEE Workshop on Electrical Machines Design, Control and Diagnosis (WEMDCD) : proceedings 2023 / 6 p. : ill <https://doi.org/10.1109/WEMDCD55819.2023.10110940>

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>

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](#)

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

Shams Ghahfarokhi, Payam; 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](#)

Design of an additively manufactured polymer composite electrical machine

Sarap, Martin; Kallaste, Ants; Naseer, Muhammad Usman; Tiismus, Hans; Rjabtšikov, 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>

Determination of core losses using an inverse modeling technique

Osemwinyen, Osaruyi; Hemeida, Ahmed; Shams Ghahfarokhi, Payam; 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

Shams Ghahfarokhi, Payam; 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

Shams Ghahfarokhi, Payam; 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

Shams Ghahfarokhi, Payam; 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

Determining the thermal conductivity of additively manufactured metal specimens

Sarap, Martin; Kallaste, Ants; Shams Ghahfarokhi, Payam; Tiismus, Hans; Vaimann, Toomas 2022 29th International Workshop on Electric Drives: Advances in Power Electronics for Electric Drives (IWED) 2022 / 4 p <https://doi.org/10.1109/IWED54598.2022.9722591>

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 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

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>

Estimation of harmonic emission of electric vehicles and their impact on low voltage residential network

Iqbal, Muhammad Naveed; Kütt, Lauri; Daniel, Kamran; Asad, Bilal; Shams Ghahfarokhi, Payam Sustainability 2021 / art. 8551 <https://doi.org/10.3390/su13158551> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Experimental determination of equivalent circuit parameters for a synchronous generator

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

Experimental investigation of high viscosity on oil spray cooling system with hairpin winding

Shams Ghahfarokhi, Payam; Kallaste, Ants; Podgornovs, Andrejs; Cardoso, Antonio J. Marques; Vaimann, Toomas; Sarap, Martin; Rjabtšikov, Viktor 2023 IEEE 14th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED) 2023 / p. 234-238 <https://doi.org/10.1109/SDEMPED54949.2023.10271484>

Forecasting of energy consumption and production using recurrent neural networks

Shabbir, Noman; Kütt, Lauri; Jawad, Muhammad; Iqbal, Muhammad Naveed; Shams Ghahfarokhi, Payam Advances in electrical and electronic engineering 2020 / p. 190-197 <https://doi.org/10.15598/aece.v18i3.3597> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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

Shams Ghahfarokhi, Payam; 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 metrics at WOS](#) [Article at WOS](#)

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

Shams Ghahfarokhi, Payam; 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>

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.csite.2018.05.007> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Integrating smart energy management system with internet of things and cloud computing for efficient demand side management in smart grids

Saleem, M. Usman; Shakir, Mustafa; Usman, M. Rehan; Bajwa, M. Hamza Tahir; Shabbir, Noman; Shams Ghahfarokhi, Payam;

Daniel, Kamran Energies 2023 / art. 4835 : ill <https://doi.org/10.3390/en16124835> [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](#)

Natural convection from flat side's of coil system

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

Oil spray cooling system in electrical machine

Shams Ghahfarokhi, Payam 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. 11-12 : ill
https://www.ester.ee/record=b5457278*est

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

Shams Ghahfarokhi, Payam; 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>

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](#)

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>

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

Shams Ghahfarokhi, Payam; 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.2019.8818271>

Review of thermal analysis of permanent magnet assisted synchronous reluctance machines

Shams Ghahfarokhi, Payam; 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>

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; Shams Ghahfarokhi, Payam 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](#)

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

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 a SynRM using a thermal network and a hybrid model

Shams Ghahfarokhi, Payam; Belahcen, Anouar; Kallaste, Ants; Vaimann, Toomas; Gevorgov, Levon; Rassõlkin, Anton

2018 XIII International Conference on Electrical Machines (ICEM 2018) : Alexandroupoli, Greece, 3-6 September 2018 / p. 2682-2688 : ill <https://doi.org/10.1109/ICELMACH.2018.8507002>

Thermal analysis of electromagnetic levitation coil [Electronic resource]

Shams Ghahfarokhi, Payam; 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

Shams Ghahfarokhi, Payam; 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 management of a SynRM for traction application

Shams Ghahfarokhi, Payam 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. 109-110 : ill https://www.ester.ee/record=b5183874*est

Thermal model of a synchronous reluctance motor

Shams Ghahfarokhi, Payam; 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

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

Asad, Bilal; Vaimann, Toomas; Belahcen, Anouar; Kallaste, Ants; Rassõlkin, Anton; Shams Ghahfarokhi, Payam Advances in machine fault diagnosis 2022 / p. 43-59 <https://doi.org/10.3390/app11062806>

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](#)