

Air-core inductive current sensor for fast transients measurements in distribution networks

Kütt, Lauri; Järvi, Jaan; Kilter, Jako; Shafiq, Muhammad; Lehtonen, Matti PQ2012 : 8th International Conference : 2012 Electric Power Quality and Supply Reliability : June 11-13, 2012, Tartu, Estonia : conference proceedings 2012 / p. 249-252 : ill https://www.researchgate.net/publication/261507011_Air-core_inductive_current_sensor_for_fast_transients_measurements_in_distribution_networks

Air-core sensors operation modes for partial discharge detection and on-line diagnostics in medium voltage networks

Kütt, Lauri; Shafiq, Muhammad; **Mölder, Heigo; Järvi, Jaan;** Lehtonen, Matti Scientific Journal of Riga Technical University. Electrical, control and communication engineering 2013 / p. 5-12 : ill

Characteristic pulse pattern features of different types of partial discharge sources in power cables

Kiitam, Ivar; Shafiq, Muhammad; Taklaja, Paul; Parker, Martin; Palu, Ivo; Kütt, Lauri IEEE Power Engineering Society Conference and Exposition in Africa, PowerAfrica, IEEE PES/IAS PowerAfrica, Nairobi, Kenya, 23-27 Aug 2021 : proceedings 2021 / 5 p. : ill <https://doi.org/10.1109/PowerAfrica52236.2021.9543366>

Characterization of corona and internal partial discharge under increasing electrical stress using time domain analysis

Shafiq, Muhammad; **Kiitam, Ivar; Taklaja, Paul;** Hussain, Amjad; **Kütt, Lauri;** Kauhaniemi, Kimmo 2020 IEEE Electrical Insulation Conference : EIC 2020 2020 / vol. 217-220 <https://doi.org/10.1109/EIC47619.2020.9158701>

Comparison of machine learning algorithms for classification of partial discharge signals in medium voltage components

Kumar, Hareesh; **Shafiq, Muhammad;** Hussain, Ghulam Amjad; Kauhaniemi, Kimmo 2021 IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe), 8-21 October, 2021 : proceedings 2021 / 6 p <https://doi.org/10.1109/ISGTEurope52324.2021.9639923>

Comparison of operating modes of air-core inductive sensors for partial discharge on-line diagnostics in medium voltage networks

Kütt, Lauri; Shafiq, Muhammad; Lehtonen, Matti; **Mölder, Heigo; Järvi, Jaan** Digest book and electronic proceedings : 54th International Scientific Conference of Riga Technical University : Section of Power and Electrical Engineering 2013 / p. 29.1-29.6 : ill <https://research.aalto.fi/en/publications/comparison-of-operating-modes-of-air-core-inductive-sensors-for-p>

A Comprehensive Study of Partial Discharge Based Extrinsic Aging in Nomex Insulation Films : Modeling, Simulation and Measurement

Choudhary, Maninder; Shafiq, Muhammad; Bhattarai, Abhinav; **Kiitam, Ivar; Taklaja, Paul; Palu, Ivo** Electric Power Systems Research 2025 / art. 111663 <https://doi.org/10.1016/j.epsr.2025.111663>

Denoising and extraction of partial discharge pulse characteristics using wavelet denoising and local maxima method

Choudhary, Maninder; Palu, Ivo; Kiitam, Ivar; Shafiq, Muhammad; **Taklaja, Paul;** Bhattarai, Abhinav 2024 IEEE International Conference on Power and Energy (PECon) 2024 / p. 221-225 <https://doi.org/10.1109/PECon62060.2024.10827085>

Design and applications of Rogowski coil sensors for power system measurements : a review

Shafiq, Muhammad; Stewart, Brian G.; Hussain, Ghulam Amjad; Hassan, Waqar; **Choudhary, Maninder; Palo, Ivo** Measurement : Journal of the International Measurement Confederation 2022 / art. 112014, 10 p. : ill <https://doi.org/10.1016/j.measurement.2022.112014> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Design of high-frequency transient current sensor for powerline on-line measurement

Kütt, Lauri; Järvi, Jaan; Kilter, Jako; Shafiq, Muhammad; Lehtonen, Matti Electrical and control technologies : proceedings of the 7th international conference on electrical and control technologies ECT-2012 2012 / p. 212-216 : ill <https://research.aalto.fi/publications/design-of-high-frequency-transient-current-sensor-for-powerline-o>

A detailed testing procedure of numerical differential protection relay for EHV auto transformer

Ehsan, Umer; Jawad, Muhammad; Javed, Umar; Zaidi, Khuram Shabih; Rehman, Ateeq Ur; **Rassölkin, Anton;** Althobaiti, Maha M.; Hamam, Habib; **Shafiq, Muhammad** Energies 2021 / art. 8447 <https://doi.org/10.3390/en14248447> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Diagnostics analysis of partial discharge events of the power cables at various voltage levels using ramping behavior analysis method

Mishra, Sambeet; **Singh, Praveen Prakash; Kiitam, Ivar; Shafiq, Muhammad; Palu, Ivo;** Bordin, Chiara Electric power systems research 2024 / art. 109988 <https://doi.org/10.1016/j.epsr.2023.109988> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Directional calibration of rogowski coil for localization of partial discharges in smart distribution networks

Shafiq, Muhammad; **Kütt, Lauri;** Isa, M.; Hashmi, M.; Lehtonen, Matti International review of electrical engineering 2012 / p. 5881-5890 https://www.researchgate.net/publication/262703688_Directional_Calibration_of_Rogowski_Coil_for_Localization_of_Partial_Discharges_in_Smart_Distribution_Networks

High-frequency current sensor for power network on-line measurements

Kütt, Lauri; Järvi, Jaan; Vaimann, Toomas; Shafiq, Muhammad; Lehtonen, Matti; Kilter, Jako Proceedings of the 13th International Scientific Conference Electric Power Engineering 2012 : EPE 2012 : Brno. Vol. 1 2012 / p. 367-371 : ill https://www.researchgate.net/publication/262674502_High-Frequency_Current_Sensor_for_Power_Network_On-line_Measurements

Identification and location of PD defects in medium voltage underground power cables using high frequency current transformer

Shafiq, Muhammad; **Kiitam, Ivar; Taklaja, Paul; Kütt, Lauri**; Kauhaniemi, Kimmo; **Palu, Ivo** IEEE Access 2019 / art. 8771171, p. 103608 - 103618 : ill <https://doi.org/10.1109/ACCESS.2019.2930704> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Improved quantification of partial discharges for reliable diagnostics of multipath connections in MV substations

Shafiq, Muhammad; Kiitam, Ivar; Isa, Muzamir; **Taklaja, Paul; Palu, Ivo; Kütt, Lauri** 2021 IEEE 62nd International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON) 2021 / 6 p <https://doi.org/10.1109/RTUCON53541.2021.9711585>

Insulation fault diagnosis for MV cables under smart grid operation

Shafiq, Muhammad 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 2021 / p. 13-14 : ill https://www.ester.ee/record=b5457278*est

Investigating the progression of insulation degradation in power cable based on partial discharge measurements

Hassan, Waqar; **Shafiq, Muhammad**; Hussain, Ghulam Amjad; **Choudhary, Maninder; Palu, Ivo** Electric power systems research 2023 / art. 109452 <https://doi.org/10.1016/j.epsr.2023.109452> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Investigation and field measurements for demand side management control technique of smart air conditioners located at residential, commercial, and industrial sites

Masood, Bilal; Guobing, Song; Nebhen, Jamel; Rehman, Ateeq Ur; **Iqbal, Muhammad Naveed**; Rasheed, Iftikhar; Bajaj, Mohit; Shafiq, Muhammad; Hamam, Habib Energies 2022 / art. 2482, 23 p. : ill <https://doi.org/10.3390/en15072482> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Investigation of partial discharge characteristics in XLPE cable insulation under increasing electrical stress

Choudhary, Maninder; Shafiq, Muhammad; **Kiitam, Ivar; Palu, Ivo**; Hassan, Waqar; **Singh, Praveen Prakash** Engineering failure analysis 2024 / art. 108006 <https://doi.org/10.1016/j.engfailanal.2024.108006> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Magnetic current sensor stray components in high frequency operation and their effects

Kütt, Lauri; Järvi, Jaan; Mölder, Heigo; Kilter, Jako; Shafiq, Muhammad Conference proceedings : 2012 11th International Conference on Environment and Electrical Engineering : Venice, Italy, 18-25 May 2012 2012 / p. 617-620 : ill <https://ieeexplore.ieee.org/abstract/document/6221451>

Magnetic sensor coil shape geometry and bandwidth assessment

Kütt, Lauri; Shafiq, Muhammad 7th International Conference-workshop Compatibility and Power Electronics : CPE 2011 : Tallinn, Estonia, June 3, 2011 : student forum 2011 / p. 58-61 : ill

Online partial discharge diagnostics in medium voltage branched cable networks

Shafiq, Muhammad; Lehtonen, Matti; Isa, M.; **Kütt, Lauri** Proceedings of 2013 Fourth International Conference on Power Engineering, Energy and Electrical Drives (POWERENG) : Istanbul, Turkey, 13-17 May 2013 2013 / p. 246-251 : ill <https://ieeexplore.ieee.org/abstract/document/6635614>

Parameters identification and modeling of high-frequency current transducer for partial discharge measurements

Shafiq, Muhammad; **Kütt, Lauri**; Lehtonen, Matti; Nieminen, Tatu; Hashmi, Murtaza IEEE sensors journal 2013 / p. 1081-1091 : ill <https://doi.org/10.1109/JSEN.2012.2227712> https://www.academia.edu/101513170/Parameters_Identification_and_Modeling_of_High_Frequency_Current_Transducer_for_Partial_Discharge_Measurements [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Partial discharge pulse shape analysis for progression of insulation degradation in medium voltage cable

Choudhary, Maninder; Shafiq, Muhammad; Kiitam, Ivar; Palu, Ivo; Hassan, Waqar 2023 International Electrical Engineering Congress (iEECON) 2023 / p. 332-336 <https://doi.org/10.1109/IEECON56657.2023.10126589>

Performance comparison of PD data acquisition techniques for condition monitoring of medium voltage cables

Shafiq, Muhammad; **Kiitam, Ivar**; Kauhaniemi, Kimmo; Taklaja, Paul; **Kütt, Lauri; Palu, Ivo** Energies 2020 / art. 4272, 14 p. : ill <https://doi.org/10.3390/en13164272> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Performance evaluation of additive manufacturing based test samples for studies of defects in electrical insulation

Shafiq, Muhammad; Taklaja, Paul; Kiitam, Ivar; Tiismus, Hans; Palu, Ivo; Kütt, Lauri 2021 International Conference on Electrical, Computer and Energy Technologies (ICECET) 2021 / 6 <https://doi.org/10.1109/ICECET52533.2021.9698476>

Performance evaluation of PD monitoring technique integrated into medium voltage cable network for smart condition assessment

Shafiq, Muhammad; Lehtonen, Matti; Hussain, Ghulam A.; **Kütt, Lauri** PQ2014 : the 9th International 2014 Electric Power Quality and Supply Reliability Conference (PQ) : June 11-13, 2014, Rakvere, Estonia : proceedings 2014 / p. 351-357 : ill

Precision and accuracy of pulse propagation velocity measurement in power cables

Kiitam, Ivar; Shafiq, Muhammad; Choudhary, Maninder; Parker, Martin; Palu, Ivo; Taklaja, Paul Energies 2023 / art. 2702

<https://doi.org/10.3390/en16062702> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A review of aging models for electrical insulation in power cables

Choudhary, Maninder; Shafiq, Muhammad; Kiitam, Ivar; Hussain, Amjad; Palu, Ivo; Taklaja, Paul Energies 2022 / Art. nr. 3408

<https://doi.org/10.3390/en15093408> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Rogowski coil : an efficient current measurement sensor for power system applications

Shafiq, Muhammad 21st International Symposium "Topical problems in the field of electrical and power engineering. Doctoral

school of energy and geotechnology. III" : Pärnu, Estonia, June 15-18, 2022 2022 / p. 7-8 : ill https://www.ester.ee/record=b5504019*est

Sensor resonance and its influence on the measurement results of fast transients

Kütt, Lauri; Shafiq, Muhammad; Lehtonen, Matti; Mölder, Heigo; Järvik, Jaan Proceedings of the International Conference on Power Systems Transients (IPST2013) in Vancouver, Canada July 18-20, 2013 2013 / [7] p.: ill

https://www.ipstconf.org/papers/Proc_IPST2013/13IPST134.pdf

Study of partial discharge characteristics in medium voltage cable insulation with internal defect

Choudhary, Maninder; Palu, Ivo; Kiitam, Ivar; Shafiq, Muhammad; Taklaja, Paul 2024 IEEE International Conference on High

Voltage Engineering and Applications (ICHVE) 2024 / 4 p <https://doi.org/10.1109/ICHVE61955.2024.10676188>

Study of the behaviour of partial discharges for proactive diagnostics in medium voltage cables

Shafiq, Muhammad; Kiitam, Ivar; Taklaja, Paul; Parker, Martin; Palu, Ivo; Kütt, Lauri 2021 IEEE PES/IAS PowerAfrica,

PowerAfrica 2021 2021 / p. 1-5 <https://doi.org/10.1109/PowerAfrica52236.2021.9543233>

Study on the progression of surface partial discharge in power cables

Choudhary, Maninder; Shafiq, Muhammad; Kiitam, Ivar; Palu, Ivo; Taklaja, Paul 2022 IEEE 63th International Scientific

Conference on Power and Electrical Engineering of Riga Technical University (RTUCON): conference proceedings 2022 / 6 p

<https://doi.org/10.1109/RTUCON56726.2022.9978804>