DHAFER ALMAKHLES

ASSOCIATE PROFESSOR | SENIOR MEMBER, IEEE

FACULTY MEMBER **AUG 2016 - PRESENT**
COLLEGE OF ENGINEERING
PRINCE SULTAN UNIVERSITY

CHAIRMAN OF **AUG 2019 - PRESENT**
ELECTRICAL ENGINEERING DEPARTMENT
PRINCE SULTAN UNIVERSITY

SS

DIRECTOR OF **MAY 2017 - PRESENT**
SCIENCE AND TECHNOLOGY UNIT AND INTELLECTUAL PROPERTY OFFICE
PRINCE SULTAN UNIVERSITY

FOUNDER AND LEADER **JAN 2019 - PRESENT**
RENEWABLE ENERGY LABORATORY
PRINCE SULTAN UNIVERSITY

Education

University of Auckland - Ranked 1^{st} and Leading University in NZ **Jan. 2011 – Sep. 2015**
PhD in Electrical & Electronics Engineering *Auckland, New Zealand*
Thesis: Two-level Dynamic Quantizers for Feedback Control Systems

University of Auckland **Jun. 2009 – July 2010**
Master in Electrical & Electronics Engineering *Auckland, New Zealand*

King Fahd University of Petroleum and Minerals **Feb 2001 – Feb. 2006**
Bachelor in Electrical Engineering *Dhahran, Saudi Arabia*

Experience

Chairman-Prince Sultan University **Sep 2019 – Present**
Electrical Engineering Department *Riyadh, Saudi Arabia*

- Design, implement and attune departmental mission and objectives in line with institutional vision, mission, and values of PSU
- Establishes, reviews and/or periodically updates/revises departmental policies.
- Conduct periodic assessment and evaluation of department performance to improve curriculum, quality of instruction, enhance student achievements, etc.
- Author and submit Annual Departmental Reports cued to quality standards and program accreditation.
- Recruit and recommend qualified teaching staff and provides departmental orientation of new faculty members
- Provide a supportive academic environment for all faculty members by encouraging faculty to participate in professional development, produce research, and to participate in approved extracurricular activities inside and outside the campus.

- Communicate departmental programs and activities to students.
- Prepare annual departmental budget requests; administer departmental budgetary allocations; and run department in a cost-effectiveness manner.
- Offer academic advising and consultation to students
- Administer and maintain and/or build departmental facilities resources.
- Recruit, orient, supervise, and evaluate departmental staff; and establish, update and maintain department records systems, students (grades & consultations), courses offerings, academic data, course files, program specification, course specifications, course reports, field experience specification, field experience report, annual program report, etc.
- Provide professional leadership in the department; represent the department, college and institution in approved local and international conferences, workshops, seminars, meetings, events and actively participates in the same.
- Monitor and ensure compliance with standards for quality assurance, continuous improvement, and accreditation related to the program.

Director-Prince Sultan University **May 2017 – Present**
Science and Technology Unite and Intellectual Property Office *Riyadh, Saudi Arabia*

- Supervise the preparation of forms and advertisements for the initial submission of proposals and presenting temporal schedules for it.
- Work as contact point with the Secretariat of the Supervisory Committee of the KACST Sending suitable detailed research projects to the Secretariat of the Supervisory Committee of KACST.
- Follow up the accepted projects, to ensure that the goals are achieved and projects received on time.
- Set the plans, strategies, programs and scientific projects, and arranged the Priorities of approved projects programs for Prince Sultan University in the light of the directions and Priorities of the National Plan for Science and Technology
- Recognize the opportunities in the international conventions, then invested and developed it into projects and programs with a specific characteristics and goals.
- Developed policies that enable researchers to take advantage of the scientific and technical assistance, and research awards, training, consulting, and others, which offers by unions and organization and international scientific organizations.
- Arranged with other developing programs in the University, to ensuring intellectual property rights to the researchers, and the registration of patents, announcement of the prizes, and marketing of research results to the industrial Institutions... etc.. Supervision for organizing workshops, seminars, conferences ... etc.
- Prepare annual reports on the achievements, and the progress of work.

Teaching Assistant - University of Auckland **June 2012 – Nov. 2015**
Electrical and Computer Engineering Department *Auckland, New Zealand*

- Provided assistance in the classroom when conducting curriculum based group lessons.
- Planning and organizing laboratories for groups of 40+ undergraduate students.
- Closely adhere to laboratory plans; and kept students motivated, engaged and focused.
- Worked one-on-one with students with challenging behavior during the experiments
- Took over and ran the classroom for the teacher when teachers were absent for meetings, training, or sick days.
- Leading other teaching assistants in maintaining a positive, calm attitude and a soft voice, and encourage this attitude and voice in others working in the laboratory.
- Classroom logistics (i.e.: taking attendance, making copies, etc.)
- Participate in preparing and defining the project scope of work and its goals.
- Assist senior/master students in designing, modeling and simulation of the inductive power transfer (IPT) and capacities power transfer (CPT) Control Systems with more focus on the controller and power converter part and in the realization/implementation of the controller and PWM using, MATLAB/Simulink and C/VHDL for Microcontroller/FPGA design.
- Guide master students in writing their Master thesis and research papers.

Generation engineer (Control & Instrumentations) - Saudi Electricity CompanyDec. 2006 – April 2008
Quryyah Power Plant *Dhahran, Saudi Arabia*

- Designing, installing, and developing new control systems, e.g., Experion PKS C200 DCS by Honeywell, Mark VI by GE and PLC Allen Bradley.
- Testing, maintaining and modifying the existing smart sensors.
- Analysing data and presenting findings in written reports.
- Liaising with suppliers and contractors.

Educational Reform, Review, and Accreditation Experience

International Accreditation Monitor | Education & Training Evaluation Commission, National Center for Academic Accreditation & Evaluation (ETEC-NCAAA)

* Invited by ETEC to participate as an international accreditation monitor with ABET in reviewing FIVE Engineering programs accreditation at Taibah University, Madina, Saudi Arabia, Nov. 2021

Member | Accreditation External Review Panel | Education & Training Evaluation Commission, National Center for Academic Accreditation & Evaluation (ETEC-NCAAA)

* Reviewing the Master of Science Program of Electrical Engineering at King Saud University, Riyadh, Saudi Arabia, March 2021
* Reviewing the Electrical Engineering Program at University of Business and Technology, Jeddah, Saudi Arabia, February 2021
* Reviewing the Electrical Engineering Program at Jouf University, Al Jouf, Saudi Arabia, December 2020
* Reviewing the Electrical Engineering Program at Majma'ah University, Al Majma'ah, Saudi Arabia, November 2020
* Reviewing the Electrical Engineering Program at Qassim University, Unaizah, Saudi Arabia, May 2022
* Reviewing the Electrical Engineering Program at Qassim University, Qassim, Saudi Arabia, Oct 2022

Chair | Accreditation External Review Panel | Education & Training Evaluation Commission, National Center for Academic Accreditation & Evaluation (ETEC-NCAAA)

* Leading the review panel for reviewing the Electrical Engineering Program at Albaha University, Al Baha, Saudi Arabia, Feb 2022

Accreditation Consultant | Education & Training Evaluation Commission, National Center for Academic Accreditation & Evaluation (ETEC-NCAAA)

* Notations & Recommendations for Program – Eligibility Document Review: Electrical Engineering Program at University of Business and Technology, Jeddah, Saudi Arabia, Jan. 2021
* Notations & Recommendations for Program – Eligibility Document Review: PhD In Urban and Regional Planning Program at Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia, Jan 2021
* Notations & Recommendations for Program – Eligibility Document Review: BSc. In Urban and Regional Planning Program at Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia, Feb 2021,
* Notations & Recommendations for Program – Eligibility Document Review: BSc. In Networking Program at Jazan University, Jazan, Saudi Arabia, June 2021,
* Notations & Recommendations for Program – Eligibility Document Review: BSc. In Architecture Program at Albaha University, Albaha, Saudi Arabia, Dec 2021
* Notations & Recommendations for Program – Eligibility Document Review: BSc. In Electrical Engineering Program at Qassim University, Qassim, Saudi Arabia, April 2022
* Notations & Recommendations for Program – Eligibility Document Review: BSc. In Graphics Design at Dar Al Uloom University, Riyadh, Saudi Arabia, Nov 2021
* Notations & Recommendations for Program – Eligibility Document Review: Master Degree. In Architecture Program at King Saud University, Riyadh, Saudi Arabia, Nov 2021
* Notations & Recommendations for Program – Eligibility Document Review: BSc. In Architecture Program at Albaha University, Al Baha, Saudi Arabia, Jan. 2022

Member | Education & Training Evaluation Commission, National Center for Academic Accreditation & Evaluation (ETEC-NCAAA)October 2020

- Participated in writing the National Engineering Learning Outcomes to be aligned with the national qualification framework (NQF) descriptions of the learning outcomes at the bachelor's degree level and to provide an integrated system that accommodates a high level of quality, competitiveness, and international recognition of national qualifications.

Chair | Education & Training Evaluation Commission, National Center for Academic Accreditation & Evaluation (ETEC-NCAAA)October 2022

- Chaired a committee in writing the National Electrical Engineering, Knowledge Learning Units and Specialized Learning Outcomes.

Funded Projects

- The establishment of Renewable Energy Lab - Prince Sultan University (cost: 673,000 SAR)
- Wireless Power Transfer for Electrical Vehicle executed in Renewable Energy Lab - Prince Sultan University (29,000 SAR)
- An Examination of Learning Outcomes Performance using Advanced Analytical Model: A case study from engineering and business schools - Prince Sultan University (29,550 SAR)
- A new Multilevel inverter suits rooftop PV fed grid tied system (29,500 SAR)

Technical Skills

MATLAB/Simulink
FPGA Development Experience and knowledge of VHDL
Honeywell - Experion PKS C200
Instruments installation
Operating Systems: Windows
MS Visio and Office
Altera Design with Quartus and Modelsim
Typhoon Hardware-in-Loop
Lyx/Latex for scientific reports & Presentations
PLCs programming using Function blocks
Multisim Simulation-in-Loop
System identification and modelling

Editorial Board and Organized Special Issue/Session

- Member of the Editorial Board of the Journal of Advances in Applied & Computational Mathematics.
- Topic Associate Editor for Frontiers in Mechanical Engineering, 2/10/2016
- Topic Associate Editor for Machine Learning for Connected and Autonomous Mobility, Frontiers in Transportation Systems, 1/6/2020.
- Member of the International Advisory Board at 1st International Conference on Smart Energy and Advancement in Power Technologies (ICSEAPT 2021), 6th-8th September 2021, Organized by Department of Electrical Engineering National Institute of Technology, Jamshedpur, India.
- Member of Unmanned Systems Track Committee at the First International Conference of Smart Systems and Emerging Technologies (SMARTTECH)- 3-5 Nov. 2020, Organized by Prince Sultan University, Riyadh, Saudi Arabia.
- Member of the International Advisory Board at International conference on Power Electronics and Renewable Energy Applications (IEEE PEREA,2020, Kerala-Inddia).

- M. S. Bhaskar, U. Subramaniam, D. **Almakhles**, “Hybrid Power Converters and Control Strategies for Integration of Renewables”, Annual Conference of the IEEE Industrial Electronics Society (IECON 2021), Toronto, Canada
- Member of the International Advisory Committee, “7th International Conference on, ‥Electrical Energy Systems - ICEES 2021,” Sivasubramaniya Nadar College of Engineering, chennai, india, Sri, 11-13 Feb. 2021.
- M. S. Bhaskar, U. Subramaniam, D. **Almakhles**, V. K. Ramachandaramurthy “Hybrid Power Electronics Configurations for Renewable Energy Conversion/Storage Systems, and their Control Strategy, (SS09),” IEEE 46th Annual Conference of The IEEE Industrial Electronics Society (IEEE-IECON-2020), Singapore, October 18-21, 2020.
- M. S. Bhaskar, U. Subramaniam, D. **Almakhles**, Virtual Conference Recent trends on Renewable Energy, Smart Grid, and Electric Vehicle Charging Technologies, M. S. Bhaskar, U. Subramaniam, D. Almakhles, VIT, 2020.
- M. S. Bhaskar, U. Subramaniam, D. **Almakhles**, Call for Paper -Special Session, IEEE TENCON 2019, on DC-DC Converter Technologies’ -Advancement in Power Circuitry, Design, Modelling, and Control for DC Microgrid. IEEE 45th Annual Conference of The IEEE Industrial Electronics Society (IEEE-IECON-2019), India, October, 2019.

Publications

PHD THESIS

- **Dhafer** J **Almakhles**. *Two-Level Dynamic Quantizers for Feedback Control Systems*. PhD thesis, ResearchSpace@ Auckland, 2016.
  Link: https://researchspace.auckland.ac.nz/handle/2292/28924

PATENTS

- Sridhar VAVILPALLI, Umashankar SUBRAMANIAM, **Dhafer** Jaber **Almakhles**, BUCK - CHOPPER AND BI - DIRECTIONAL CHOPPER FOR MULTILEVEL CASCADED HBRIDGE INVERTERS, US Patent, 2021.
  Link: https://patents.google.com/patent/US20210211066A1/en

- Sagar Magajan, Umashankar SUBRAMANIAM, **Dhafer** Jaber **Almakhles**, Design, Control and Real-Time Simulations of Buck-Chopper and Bi-Directional Chopper based ESS, US Patent, 2021.
  Link: https://patents.google.com/patent/US20210265919A1/en

BOOKS

- **Book#1:** Nikita Gupta, Mahajan Sagar Bhaskar, Sanjeevikumar Padmanaban, and **Dhafer J. Almakhles**. In Jiwei Wen, *DC MICROGRIDS: Advances, Challenges, and Applications*, Energy, Wiley, 2021.
  Link: http://www.scrivenerpublishing.com/cart/title.php?id=645#desc
- **Book#2:** Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modeling, Academic Press, 2019.
  Link: https://www.elsevier.com/books/non-monotonic-approach-to-robust-h-control-of-multi-model-systems/wen/978-0-12-814868-6

Chapters

[1] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 1 - introduction. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 1–21. Academic Press, 2019.

[2] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 10 - robust hâ filtering of nonhomogeneous markovian jump delay systems via n-step ahead lyapunovâkrasovskii function approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 175–200. Academic Press, 2019.

[3] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 11 - conclusions and future work. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 201–203. Academic Press, 2019.

[4] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 2 - robust hâ state feedback controller design of discrete-time t-s fuzzy systems: A nonmonotonic approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to RobustH-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 23–41. Academic Press, 2019.

[5] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 3 - robust hâ filtering of t-s fuzzy systems: A nonmonotonic approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 43–60. Academic Press, 2019.

[6] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 4 - robust hâ output feedback control for t-s fuzzy systems: A nonmonotonic approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 61–73. Academic Press,2019.

[7] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 5 - stability and hâ control of discrete-time switched systems via one-step ahead lyapunov function approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 75–90. Academic Press, 2019.

[8] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 6 - stability, l2-gain and robust hâ control of switched systems via multistep ahead nonmonotonic approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 91–110. Academic Press, 2019.

[9] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 7 - robust hâ filtering for average dwell-time switched systems via a nonmonotonic function approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 111–130. Academic Press, 2019.

[10] Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 8 - dissipative dynamic output feedback control for switched systems via multistep lyapunov function approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic Approach to Robust H-infinity Control of Multi-model Systems*, Emerging Methodologies and Applications in Modelling, pages 131–147. Academic Press, 2019.

[11] **J**iwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**. Chapter 9 - robust hâ control of discrete-time nonhomogenous markovian jump systems via multistep ahead lyapunov function approach. In Jiwei Wen, Alireza Nasiri, Sing Kiong Nguang, and **Dhafer J. Almakhles**, editors, *Non-Monotonic*

Approach to Robust H-infinity Control of Multi-model Systems, Emerging Methodologies and Applications in Modelling, pages 149–174. Academic Press, 2019.

[12] **Dhafer Almakhles**, Akshya Swain, Nitish Patel Chapter 13 - Delta-sigma Modulator for Control System In Francisco Miranda, editors, *Control Theory: Perspectives, Applications and Developments*, Mathematical Analysis, Mathematics and Statistics, Academic Press, 2015.

[13] N. Rishikesh, P. Prem, M. Jagabar Sathik, and **Dhafer Almakhles**. Chapter 15 - a case study with power quality analysis on building integrated pv (bipv) system. In Ahmed F. Zobaa and Shady H.E. Abdel Aleem, editors, *Uncertainties in Modern Power Systems*, pages 541–562. Academic Press, 2021.

Journals

[1] Jagabar Sathik Ali, N. Sandeep, **Dhafer Almakhles**, and Udaykumar R. Yaragatti. A five-level boosting inverter for pv application. *IEEE Journal of Emerging and Selected Topics in Power Electronics*, pages 1–1, 2020.

[2] Jagabar Sathik Ali, D. N. J, L. A, Y. Yang, **Dhafer Almakhles** and F. Blaabjerg. Reliability Analysis of Power Components in Restructured DC/DC Converters, *IEEE Transactions on Device and Materials Reliability*, doi: 10.1109/TDMR.2021.3116941.

[3] Mansour, A.M.; Almutairi, A.; Alyami, S.; Obeidat, M.A.; **Almakhles, D.**; Sathik, J. A Unique Unified Wind Speed Approach to Decision-Making for Dispersed Locations. *Sustainability*, 2021, 13, 9340. https://doi.org/10.3390/su1316934.

[4] Jagabar Sathik Mohamed Ali, **Dhafer J. Almakhles**, S. A. Ahamed Ibrahim, Saeed Alyami, Sivakumar Selvam, and Mahajan Sagar Bhaskar. A generalized multilevel inverter topology with reduction of total standing voltage. *IEEE Access*, 8:168941–168950, 2020.

[5] **Dhafer Almakhles**. The complex adaptive delta-modulator in sliding mode theory. *Entropy*, 22(8), 2020.

[6] **Dhafer Almakhles**. Sliding mode control as binary-based quantizers. *Asian Journal of Control*, 22(3):1090–1098, 2020.

[7] **Dhafer Almakhles**. Two-level quantised control systems: sliding-mode approach. *International Journal of Control*, 93(3):680–688, 2020.

[8] **Dhafer Almakhles**, M Jagabar Sathik, S Sivakumar, Mahajan Sagar Bhasker, and N Sandeep. Switched capacitor based 13l inverter topology for high-frequency ac power distribution system. *IEEE Journal of Emerging and Selected Topics in Power Electronics*, pages 1–1, 2020.

[9] **Dhafer Almakhles**, Akshya K Swain, and Alireza Nasiri. The dynamic behaviour of data-driven δ-m and $\delta\sigma$-m in sliding mode control. *International Journal of Control*, 90(11):2406–2414, 2017.

[10] **Dhafer Almakhles**, Akshya K. Swain, Alireza Nasiri, and Nitish Patel. An adaptive two-level quantizer for networked control systems. *IEEE Transactions on Control Systems Technology*, 25(3):1084–1091, 2017.

[11] **Dhafer Almakhles**, Chathura Wanigasekara, Akshya Swain, Khaled Almustafa, and Umashankar Subramaniyan. Hybrid delta modulator: stability analysis using sliding mode theory. *Systems Science & Control Engineering*, 7(1):234–242, 2019.

[12] **Dhafer J. Almakhles**. Robust backstepping sliding mode control for a quadrotor trajectory tracking application. *IEEE Access*, 8:5515–5525, 2020.

[13] **Dhafer J. Almakhles**, Jagabar Sathik Mohamed Ali, Sanjeevikumar Padmanaban, Mahajan Sagar Bhaskar, Umashankar Subramaniam, and Rathinasamy Sakthivel. An original hybrid multilevel dc-ac converter using single-double source unit for medium voltage applications: Hardware implementation and investigation. *IEEE Access*, 8:71291–71301, 2020.

[14] **Dhafer J. Almakhles**, R. Sakthivel, Akshya Swain, Umashankar Subramaniam, and Khaled Almustafa. A generalized one-bit control system using a $\delta\sigma$-quantizer. *IEEE Access*, 7:117009–117018, 2019.

[15] **Dhafer J. Almakhles**, Akshya K. Swain, and Nitish D. Patel. Stability and performance analysis of bit-stream-based feedback control systems. *IEEE Transactions on Industrial Electronics*, 62(7):4319–4327, 2015.

[16] Saeed Alyami, Jagabar Sathik Mohamed Ali, **Dhafer Almakhles**, Abdulaziz Almutairi, and Mohammed Obeidat. Seven level t-type switched capacitor inverter topology for pv applications. *IEEE Access*, 9:85049–85059, 2021.

[17] M. S. Bhaskar, Nikita Gupta, Sivakumar Selvam, **Dhafer J. Almakhles**, P. Sanjeevikumar, Jagabar Sathik Mohamed Ali, and S. Umashankar. A new hybrid zeta-boost converter with active quad switched inductor for high voltage gain. *IEEE Access*, 9:20022–20034, 2021.

[18] Mahajan Sagar Bhaskar, **Dhafer Almakhles**, Sanjeevikumar Padmanaban, Dan M. Ionel, Frede Blaabjerg, Jiangbiao He, and A. Rakesh Kumar. Investigation of a transistor clamped t-type multilevel h-bridge inverter with inverted double reference single carrier pwm technique for renewable energy applications. *IEEE Access*, 8:161787–161804, 2020.

[19] Mahajan Sagar Bhaskar, **Dhafer J. Almakhles**, Sanjeevikumar Padmanaban, Frede Blaabjerg, Umashankar Subramaniam, and Dan M. Ionel. Analysis and investigation of hybrid dcâdc non-isolated and non-inverting nx interleaved multilevel boost converter (nx-imbc) for high voltage step-up applications: Hardware implementation. *IEEE Access*, 8:87309–87328, 2020.

[20] Mahajan Sagar Bhaskar, **Dhafer J. Almakhles**, Sanjeevikumar Padmanaban, Jens Bo Holm-Nielsen, A. Rakesh Kumar, and Samson O. Masebinu. Triple-mode active-passive parallel intermediate links converter with high voltage gain and flexibility in selection of duty cycles. *IEEE Access*, 8:134716–134727, 2020.

[21] Nirmal Mukundan C. M., Jayaprakash P., Umashankar Subramaniam, and **Dhafer J. Almakhles**. Trinary hybrid cascaded h-bridge multilevel inverter-based grid-connected solar power transfer system supporting critical load. *IEEE Systems Journal*, pages 1–10, 2020.

[22] Surya Varchasvi Devaraj, Manavaalan Gunasekaran, Elango Sundaram, Manikandan Venugopal, Sharmeela Chenniappan, **Dhafer J. Almakhles**, Umashankar Subramaniam, and Mahajan Sagar Bhaskar. Robust queen bee assisted genetic algorithm (qbga) optimized fractional order pid (fopid) controller for not necessarily minimum phase power converters. *IEEE Access*, 9:93331–93337, 2021.

[23] Hou Yuefeng **Dhafer J. Almakhles**, Akshya Swain. Using sigma-delta quantizer based pi for inductive power transfer systems. *International Journal of Power Electronics and Drive System (IJPEDS)*, 11(3):1449–1458, 2020.

[24] **J.** Divya Navamani, A. Lavanya, **Dhafer Almakhles**, and M. Jagabar Sathik. A review on segregation of various high gain converter configurations for distributed energy sources. *Alexandria Engineering Journal*, 2021.

[25] Nabanita Dutta, Kaliannan Palanisamy, Umashankar Subramaniam, Sanjeevikumar Padmanaban, Jens Bo Holm-Nielsen, Frede Blaabjerg, and **Dhafer** Jaber **Almakhles**. Identification of water hammering for centrifugal pump drive systems. *Applied Sciences*, 10(8), 2020.

[26] Rajvikram Madurai Elavarasan, Karthikeyan Velmurugan, Umashankar Subramaniam, A Rakesh Kumar, and **Dhafer Almakhles**. Experimental investigations conducted for the characteristic study of om29 phase change material and its incorporation in photovoltaic panel. *Energies*, 13(4), 2020.

[27] Teena George, P. Jayaprakash, Umashankar Subramaniam, and **Dhafer J. Almakhles**. Frame-angle controlled wavelet modulated inverter and self-recurrent wavelet neural network-based maximum power point tracking for wind energy conversion system. *IEEE Access*, 8:171373–171386, 2020.

[28] Maheswaran Gunasekaran, Vijayakumar Krishnasamy, Sivakumar Selvam, **Dhafer J. Almakhles**, and Norma Anglani. An adaptive resistance perturbation based mppt algorithm for photovoltaic applications. *IEEE Access*, 8:196890–196901, 2020.

[29] S. Harshavarthini, S. Selvi, R. Sakthivel, and **Dhafer J. Almakhles**. Non-fragile fault alarm-based hybrid control for the attitude quadrotor model with actuator saturation. *IEEE Transactions on Circuits and Systems II: Express Briefs*, 67(11):2647–2651, 2020.

[30] M Jagabar Sathik, Arpan Hota, N Sandeep, and **Dhafer Almakhles**. A single-stage common ground type transformerless five-level inverter topology. *IEEE Journal of Emerging and Selected Topics in Power Electronics*, pages 1–1, 2021.

[31] M. Jagabar Sathik, N. Sandeep, **Dhafer Almakhles**, and Frede Blaabjerg. Cross connected compact switched-capacitor multilevel inverter (c3-scmli) topology with reduced switch count. *IEEE Transactions on Circuits and Systems II: Express Briefs*, 67(12):3287–3291, 2020.

[32] M Jagabar Sathik, N Sandeep, **Dhafer Almakhles**, and Frede Blaabjerg. Improved âkâ type seven-level switched capacitor inverter topology with self-voltage balancing. *International Journal of Circuit Theory and Applications*, 48(10):1800–1819, 2020.

[33] Mohana Lakshmi Jayaramu, H. N. Suresh, Mahajan Sagar Bhaskar, **Dhafer Almakhles**, Sanjeevikumar Padmanaban, and Umashankar Subramaniam. Real-time implementation of extended kalman filter observer with improved speed estimation for sensorless control. *IEEE Access*, 9:50452–50465, 2021.

[34] Kuldeep Jayaswal, G. S. Sharma, M. S. Bhaskar, **Dhafer J. Almakhles**, Umashankar Subramaniam, and D. K. Palwalia. Global solar insolation estimation and investigation: A case study of various nations and cities. *IEEE Access*, 9:88069–88084, 2021.

[35] Subramani Jegadeesan, Maria Azees, N. Ramesh Babu, Umashankar Subramaniam, and **J. Dhafer Almakhles**. Epaw: Efficient privacy preserving anonymous mutual authentication scheme for wireless body area networks (wbans). *IEEE Access*, 8:48576–48586, 2020.

[36] A. Rakesh Kumar, Mahajan Sagar Bhaskar, Umashankar Subramaniam, **Dhafer Almakhles**, Sanjeevikumar Padmanaban, and Jens Bo-Holm Nielsen. An improved harmonics mitigation scheme for a modular multilevel converter. *IEEE Access*, 7:147244–147255, 2019.

[37] A. Rakesh Kumar, T. Deepa, Mahajan Sagar Bhaskar, Umashankar Subramaniam, **Dhafer Almakhles**, Sanjeevikumar Padmanaban, and Jens Bo-Holm Nielsen. Corrections to âan improved harmonics mitigation scheme for a modular multilevel converterâ [2019 147244-147255]. *IEEE Access*, 8:65351–65351, 2020.

[38] Nallapaneni Manoj Kumar, Umashankar Subramaniam, Mobi Mathew, A. Ajitha, and **Dhafer J. Almakhles**. Exergy analysis of thin-film solar pv module in ground-mount, floating and submerged installation methods. *Case Studies in Thermal Engineering*, 21:100686, 2020.

[39] Saminathan Mohanapriya, Charles Selvaraj Antony Crispin Sweety, Rathinasamy Sakthivel, and **Dhafer** Jaber **Almakhles**. Tracking and disturbance attenuation control for stochastic switched systems with input delay. *IET Control Theory & Applications*, 14(18):2847–2856, 2020.

[40] Saminathan Mohanapriya, Rathinasamy Sakthivel, and **Dhafer J. Almakhles**. Repetitive control design for vehicle lateral dynamics with state-delay. *IET Control Theory & Applications*, 14(12):1619–1627, 2020.

[41] Alireza Nasiri, Sing Kiong Nguang, Akshya Swain, and **Dhafer J. Almakhles**. Robust output feedback controller design of discrete-time takagiâsugeno fuzzy systems: a non-monotonic lyapunov approach. *IET Control Theory & Applications*, 10(5):545–553, 2016.

[42] Alireza Nasiri, Sing Kiong Nguang, Akshya Swain, and **Dhafer Almakhles**. Stabilisation of discrete-time polynomial fuzzy systems via a polynomial lyapunov approach. *International Journal of Systems Science*, 49(3):557–566, 2018.

[43] Alireza Nasiri, Sing Kiong Nguang, Akshya Swain, and **Dhafer Almakhles**. Passive actuator fault tolerant control for a class of mimo nonlinear systems with uncertainties. *International Journal of Control*, 92(3):693–704, 2019.

[44] Alireza Nasiri, Sing Kiong Nguang, Akshya Swain, and **Dhafer J. Almakhles**. Reducing conservatism in an h_∞ robust state-feedback control design of tâs fuzzy systems: A nonmonotonic approach. *IEEE Transactions on Fuzzy Systems*, 26(1):386–390, 2018.

[45] Moustafa M. Nasralla, Basiem Al-Shattarat, **Dhafer J. Almakhles**, Abdelhakim Abdelhadi, and Eman S. Abowardah. Futuristic trends and innovations for examining the performance of course learning outcomes using the rasch analytical model. *Electronics*, 10(6), 2021.

[46] Sudhakar Natarajan, Thanikanti Sudhakar Babu, Karthik Balasubramanian, Umashankar Subramaniam, and **Dhafer J. Almakhles**. A state-of-the-art review on conducted electromagnetic interference in non-isolated dc to dc converters. *IEEE Access*, 8:2564–2577, 2020.

[47] C. M. Nirmal Mukundan, P. Jayaprakash, Umashankar Subramaniam, and **Dhafer J. Almakhles**. Binary hybrid multilevel inverter-based grid integrated solar energy conversion system with damped sogi control. *IEEE Access*, 8:37214–37228, 2020.

[48] Prem Ponnusamy, Pandarinathan Sivaraman, **Dhafer J. Almakhles**, Sanjeevikumar Padmanaban, Zbigniew Leonowicz, Matheswaran Alagu, and Jagabar Sathik Mohamed Ali. A new multilevel inverter topology with reduced power components for domestic solar pv applications. *IEEE Access*, 8:187483–187497, 2020.

[49] P Prem, P Sivaraman, JS Sakthi Suriya Raj, M Jagabar Sathik, and **Dhafer Almakhles**. Fast charging converter and control algorithm for solar pv battery and electrical grid integrated electric vehicle charging station. *Automatika*, 61(4):614–625, 2020.

[50] Kannadasan Raju, Valsalal Prasad, Rajvikram Madurai Elavarasan, Umashankar Subramaniam, and **Dhafer J. Almakhles**. Development of high gradient zno arrester material for high voltage applications. *IEEE Access*, 8:115685–115693, 2020.

[51] Mahajan Sagar Bhaskar, Vigna K. Ramachandaramurthy, Sanjeevikumar Padmanaban, Frede Blaabjerg, Dan M. Ionel, Massimo Mitolo, and **Dhafer Almakhles**. Survey of dc-dc non-isolated topologies for unidirectional power flow in fuel cell vehicles. *IEEE Access*, 8:178130–178166, 2020.

[52] R. Sakthivel, S. Harshavarthini, **Dhafer J. Almakhles**, and R. Kavikumar. Design of uncertainty and disturbance estimator based tracking control for fuzzy switched systems. *IET Control Theory & Applications*, n/a(n/a).

[53] R. Sakthivel, S. Mohanapriya, and **Dhafer J. Almakhles**. Robust tracking and disturbance rejection performance for vehicle dynamics. *IEEE Access*, 7:118598–118607, 2019.

[54] R. Sakthivel, T. Satheesh, S. Harshavarthini, and **Dhafer J. Almakhles**. Design of resilient reliable control for uncertain periodic piecewise systems with time-varying delay and disturbances. *Journal of the Franklin Institute*, 357(17):12326–12345, 2020.

[55] Rathinasamy sakthivel, **Dhafer J. Almakhles**, and Ramalingam Sakthivel. Fault estimations and non-fragile control design for fractional-order multi-weighted complex dynamical networks. *IEEE Access*, 8:39513–39524, 2020.

[56] P. S. Sanjan, N. Gowtham, Mahajan Sagar Bhaskar, Umashankar Subramaniam, **Dhafer J. Almakhles**, Sanjeevikumar Padmanaban, and N. G. Yamini. Enhancement of power quality in domestic loads using harmonic filters. *IEEE Access*, 8:197730–197744, 2020.

[57] Sushmita Sarkar, M.S. Bhaskar, K. Uma Rao, Prema V, **Dhafer Almakhles**, and Umashankar Subramaniam. Solar pv network installation standards and cost estimation guidelines for smart cities. *Alexandria Engineering Journal*, 2021.

[58] M Jagabar Sathik, **Dhafer** J **Almakhles**, N Sandeep, and Marif Daula Siddique. Experimental validation of new self-voltage balanced 9l-anpc inverter for photovoltaic applications. *Scientific Reports*, 11(1):1–14, 2021.

[59] M Jagabar Sathik, N Sandeep, **Dhafer Almakhles**, Kaustubh Bhatnagar, Yongheng Yang, and Frede Blaabjerg. Seven-level boosting active neutral point clamped inverter using cross-connected switched capacitor cells. *IET Power Electronics*, 13(9):1919–1924, 2020.

[60] M. Jagabar Sathik, N. Sandeep, Marif Daula Siddique, **Dhafer Almakhles**, and Saad Mekhilef. Compactseven-level boost type inverter topology. *IEEE Transactions on Circuits and Systems II: Express Briefs*, 68(4):1358–1362, 2021.

[61] Marif Daula Siddique, Jagabar Sathik Mohamed Ali, Saad Mekhilef, Asif Mustafa, N. Sandeep, and **Dhafer Almakhles**. Reduced switch count based single source 7l boost inverter topology. *IEEE Transactions on Circuits and Systems II: Express Briefs*, 67(12):3252–3256, 2020.

[62] Marif Daula Siddique, Mahajan Sagar Bhaskar, Muhyaddin Rawa, Saad Mekhilef, Mudasir Ahmed Memon, Sanjeevikumar Padmanaban, **Dhafer** J **Almakhles**, and Umashankar Subramaniam. Single-phase hybrid multilevel inverter topology with low switching frequency modulation techniques for lower order harmonic elimination. *IET Power Electronics*, 13(17):4117–4127, 2020.

[63] Marif Daula Siddique, Atif Iqbal, Jagabar Sathik Mohamed Ali, Saad Mekhilef, and **Dhafer** J **Almakhles**. Design and implementation of a new unity gain nine-level active neutral point clamped multilevel inverter topology. *IET Power Electronics*, 13(14):3204–3208, 2020.

[64] Umashankar Subramaniam, Sagar Mahajan Bhaskar, **Dhafer J.Almakhles**, Sanjeevikumar Padmanaban, and Zbigniew Leonowicz. Investigations on emi mitigation techniques: Intent to reduce grid-tied pv inverter common mode current and voltage. *Energies*, 12(17), 2019.

[65] Umashankar Subramaniam, Swaminathan Ganesan, Mahajan Sagar Bhaskar, Sanjeevikumar Padmanaban, Frede Blaabjerg, and **Dhafer J. Almakhles**. Investigations of ac microgrid energy management systems using distributed energy resources and plug-in electric vehicles. *Energies*, 12(14), 2019.

[66] Umashankar Subramaniam, Sridhar Vavilapalli, Sanjeevikumar Padmanaban, Frede Blaabjerg, Jens Bo Holm-Nielsen, and **Dhafer Almakhles**. A hybrid pv-battery system for on-grid and off-grid applicationsâcontroller-in-loop simulation validation. *Energies*, 13(3), 2020.

[67] Akshya Swain, **Dhafer Almakhles**, Michael J Neath, and Alireza Nasiri. Robust hâ output feedback control of bidirectional inductive power transfer systems. *Archives of Control Sciences*, 27(1), 2017.

[68] Anantha Krishnan Venkatesan, Umashankar Subramaniam, Mahajan Sagar Bhaskar, O. V. Gnana Swathika, Sanjeevikumar Padmanaban, **Dhafer J. Almakhles**, and Massimo Mitolo. Small-signal stability analysis for microgrids under uncertainty using malann control technique. *IEEE Systems Journal*, pages 1–11, 2020.

[69] Chathura Wanigasekara, **Dhafer Almakhles**, Akshya Swain, and Sing Kiong Nguang. Delta-modulator-based quantised output feedback controller for linear networked control systems. *IEEE Access*, 8:175169–175179, 2020.

[70] Zhaojie Yang, Yi Fang, Yu Cheng, Pingping Chen, and **Dhafer J. Almakhles**. Protograph ldpc-coded bicm-id with irregular mapping: An emerging transmission technique for massive internet of things. *IEEE Transactions on Green Communications and Networking*, pages 1–1, 2021.

[71] Xie Zeng, Ali Thaeer Hammid, Nallapaneni Manoj Kumar, Umashankar Subramaniam, and **Dhafer J. Almakhles**. A grasshopper optimization algorithm for optimal short-term hydrothermal scheduling. *Energy Reports*, 7:314–323, 2021.

[72] P., S., Divya, N., Sathik, J., A., L., K., V. and **Dhafer J. Almakhles**. (2021), A comprehensive study on various dc–dc converter voltage-boosting topologies and their applications~, *Circuit World*, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/CW-12-2020-0338

[73] J. Divya Navamani, A. Geetha, **Dhafer Almakhles,** A. Lavanya and M. J. Sathik, ~Modified LUO High Gain DC-DC Converter with Minimal Capacitor Stress for Electric Vehicle Application,~ *IEEE Access*, doi: 10.1109/ACCESS.2021.3109273.

[74] S Rathinasamy, R Manikandan, **Dhafer Almakhles**, ~Anti-Windup Compensator-Based Control for Periodic Piecewise Delayed Systems with Input Saturations,~ of Dynamic Systems, Measurement, and Control, doi: https://doi.org/10.1115/1.4056106.

[75] Mahmoud F Elmorshedy, Habib Ur Rahman Habib, M Jagabar Sathik, Mosaad M Ali, **Dhafer Almakhles**, ~Improved Performance of Hybrid PV and Wind Generating System Connected to the Grid Using Finite-Set Model Predictive Control,~ Access, doi: 10.1109/ACCESS.2022.3214996.

[76] **Dhafer Almakhles**, M Jagabar Sathik, J Divya Navamani, A Lavanya, MS Bhaskar, ~Single Switch Module Type DC-DC Converter with Reduction in Voltage Stress,~ *IEEE Access*, doi: 10.1109/ACCESS.2022.3212119.

[77] Mahmoud F Elmorshedy, Mohamed R Elkadeem, Kotb M Kotb, Ibrahim BM Taha, Mohamed K El-Nemr, AW Kandeal, Swellam W Sharshir, **Dhafer Almakhles**, Sherif M Imam, ~Single Switch Module Type DC-DC Converter with Reduction in Voltage Stress,~ *Sustainable Energy Technologies and Assessments*, https://doi.org/10.1016/j.seta.2022.102746.

[78] Amr Marey, Mahajan Sagar Bhaskar, **Dhafer Almakhles**, Hala Mostafa, ~Analytical Solution for Transient Reactive Elements for DC-DC Converter Circuits,~ *Electronics*, https://doi.org/10.3390/electronics11193121.

[79] S Harshavarthini, R Sakthivel, T Satheesh, **Dhafer Almakhles**, ~Observer-based tracking control design for periodic piecewise time-varying systems,~ *Journal of the Franklin Institute*, https://doi.org/10.1016/j.jfranklin.2022.08.001.

[80] Divya J Navamani, Jagabar M Sathik, A Lavanya, **Dhafer Almakhles**, Ziad M Ali, Shady HE Aleem ~Reliability Prediction and Assessment Models for Power Components: A Comparative Analysis,~ *Archives of Computational Methods in Engineering*, https://doi.org/10.1007/s11831-022-09806-8

[81] Mohamed AliJagabar Sathik, Marif Daula Siddique, N Sandeep, Arpan Hota, **Dhafer Almakhles**, Saad Mekhilef, Udaykumar R Yaragatti, ~Compact Quadratic Boost Switched-Capacitor Inverter,~ *IEEE Transactions on Industry Applications*, https://doi.org/10.1109/TIA.2022.3172235

[82] Mustafa Alrayah Hassan, Chun-Lien Su, Josep Pou, Giorgio Sulligoi, **Dhafer Almakhles**, Daniele Bosich, Josep M Guerrero, Shipboard Microgrids with Constant Power Loads: A Review of Advanced Nonlinear Control Strategies and Stabilization Techniques,- *IEEE Transactions on Smart Grid*, https://doi.org/10.1109/TSG.2022.3168267

[83] **Dhafer Almakhles**, Chathura Wanigasekara; Akshya Swain, Modulator Based Quantised State-Feedback Control of Networked Linear Systems,- *IEEE Access*, https://doi.org/10.1109/ACCESS.2022.3172431

[84] S Yuvaraja, R Narayanamoorthi, Jagabar Sathik Mohamed Ali, **Dhafer Almakhles**, Comprehensive Review of the On-Road Wireless Charging System for E-Mobility Applications,- *FRONTIERS IN ENERGY RESEARCH*, https://doi.org/10.3389/fenrg.2022.926270

[85] **Dhafer Almakhles**, M Jagabar Sathik -phase transformerless nine-level inverter with voltage boosting ability for PV fed AC microgrid applications,- *Scientific Reports*, https://doi.org/10.1038/s41598-022-16057-x

[86] Ihab Jamal; Mahmoud F. Elmorshedy; Sherif M. Dabour; Essam M. Rashad; Wei Xu; **Dhafer Almakhles**, Comprehensive Review of Grid-Connected PV Systems Based on Impedance Source Inverter,- *IEEE Access*, vol. 10, pp. 89101-89123, 2022, doi: 10.1109/ACCESS.2022.3200681.

Conferences

[1] Suresh Kumar Sudabattula, Velamuri Suresh, Umashankar Subramaniam, **Dhafer Almakhles**, Sanjeevikumar Padmanaban, Zbigniew Leonowicz, and Atif Iqbal. Optimal allocation of multiple distributed generators and shunt capacitors in distribution system using flower pollination algorithm. In *2019 IEEE International Conference on Environment and Electrical Engineering and 2019 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I CPS Europe)*, pages 1–5, 2019.

[2] Arezki Fekik, Hakim Denoun, Ahmad Taher Azar, Khaled Mohamad Almustafa, **Dhafer Almakhles,** Mustapha Zaouia, Mohamed Lamine Hamidaand Nacira Yassa A Self Tuning Fuzzy Fractional Order PI Controller for Speed Control of DC Motor In *2019 International Conference on Control, Automation and Diagnosis (ICCAD)*, Grenoble, France, pages 1–5, 2019.

[3] Akshya Swain, **Dhafer Almakhles**, Yuefeng Hou, Nitish Patel, and Udaya Madawala. A sigma-delta modulator based pi controller for bidirectional inductive power transfer systems. In *2016 IEEE 2nd Annual Southern Power Electronics Conference (SPEC)*, pages 1–6, 2016.

[4] Akshya Swain, **Dhafer Almakhles**, Michael J Neath, and Alireza Nasiri. Robust control of wireless power transfer system. In *2017 13th IEEE International Conference on Control Automation (ICCA)*, pages 1060–1065, 2017.

[5] Harshal D. Vaidya, Mahajan Sagar Bhaskar, Nikita Gupta, P. Sanjeevikumar, **Dhafer Almakhles**, S. Umashankar, and Zbigniew Leonowicz. Single-phase series compensator circuit for mitigating voltage sag or swell in the power system networks - methodology and modelling. In *2020 IEEE International Conference on Environment and Electrical Engineering and 2020 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I CPS Europe)*, pages 1–5, 2020.

[6] Chathura Wanigasekara, **Dhafer Almakhles**, Akshya Swain, and Sing Kiong Nguang. Delta-modulator-based quantised output feedback controller for linear networked control systems. *IEEE Access*, 8:175169–175179, 2020.

[7] Chathura Wanigasekara, **Dhafer Almakhles**, Akshya Swain, Sing Kiong Nguang, Umashankar Subramaniyan, and Sanjeevikumar Padmanaban. Performance of neural network based controllers and ÎÎ£-based pid controllers for networked control systems: A comparative investigation. In *2019 IEEE International Conference on Environment and Electrical Engineering and 2019 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I CPS Europe)*, pages 1–6, 2019.

[8] Chathura Wanigasekara, **Dhafer Almakhles**, Lv Zhou, Akshya Swain, Umashankar Subramaniyan, and Sanjeevikumar Padmanaban. Design of âÎ£ based pid controller for wind energy systems. In *2019 IEEE International Conference on Environment and Electrical Engineering and 2019 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I CPS Europe)*, pages 1–6, 2019.

[9] Chathura Wanigasekara, Akshya Swain, **Dhafer Almakhles**, and Lv Zhou. Design of dynamic fuzzy q-learning controller for networked wind energy conversion systems. In *2020 IEEE International Conference on Environment and Electrical Engineering and 2020 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I CPS Europe)*, pages 1–6, 2020. **Dhafer Al-Makhles**, Nitish Patel, and Akshya Swain. Bit-stream control system: Stability and experimental application. In *2013 International Conference on Applied Electronics*, pages 1–6, 2013.

[10] **Dhafer Al-Makhles**, Nitish Patel, and Akshya Swain. Conventional and hybrid bit-stream in real-time system. In *2013 Proceedings of the 11th Workshop on Intelligent Solutions in Embedded Systems (WISES)*, pages 1–6, 2013.

[11] **Dhafer Al-Makhles**, Nitish Patel, and Akshya Swain. A two-loop linear control utilizing ÎÎ£ modulator. In *2013 Proceedings of the 11th Workshop on Intelligent Solutions in Embedded Systems (WISES)*, pages 1–6, 2013.

[12] **Dhafer Al-Makhles**, Akshya Swain, and Nitish Patel. Delta-sigma based bit-stream controller for a d.c. motor. In *TENCON 2012 IEEE Region 10 Conference*, pages 1–5, 2012.

[13] **Dhafer Al-Makhles**, Akshya K Swain, and Nitish Patel. Adaptive quantizer for networked control system. In *2014 European Control Conference (ECC)*, pages 1404–1409, 2014.

[14] **Dhafer Almakhles**, Nathan Pyle, Hossein Mehrabi, Akshya Swain, and A. Patrick Hu. Single-bit modulator based controller for capacitive power transfer system. In *2016 IEEE 2nd Annual Southern Power Electronics Conference (SPEC)*, pages 1–6, 2016.

[15] Shankar V.K. Arun, Umashankar Subramaniam, Sanjeevikumar Padmanaban, Mahajan Sagar Bhaskar, and **Dhafer Almakhles**. Investigation for performances comparison pi, adaptive pi, fuzzy speed control induction motor for centrifugal pumping application. In *2019 IEEE 13th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG)*, pages 1–6, 2019.

[16] Nikita Gupta, **Dhafer Almakhles**, Mahajan Sagar Bhaskar, P. Sanjeevikumar, Jens Bo Holm-Nielsen, and Massimo Mitolo. Novel hybrid high gain converter: Combination of cuk and buck-boost structures with switched inductor for dc microgrid. In *2020 2nd Global Power, Energy and Communication Conference (GPECOM)*, pages 47–52, 2020.

[17] Nikita Gupta, Mahajan Sagar Bhaskar, **Dhafer Almakhles**, P. Sanjeevikumar, Frede Blaabjerg, and Zbigniew Leonowicz. Two-tier converter: A new structure of high gain dc-dc converter with reduced voltage stress. In *2020 IEEE International Conference on Environment and Electrical Engineering and 2020 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I CPS Europe)*, pages 1–6, 2020.

[18] Nikita Gupta, Mahajan Sagar Bhaskar, **Dhafer Almakhles**, P. Sanjeevikumar, Umashankar Subramaniam, Zbigniew Leonowicz, and Massimo Mitolo. Novel non-isolated quad-switched inductor double-switch converter for dc microgrid application. In *2020 IEEE International Conference on Environment and Electrical Engineering and 2020 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I CPS Europe)*, pages 1–6, 2020.

[19] Nikita Gupta, Nil Patel, Mahajan Sagar Bhaskar, Sanjeevikumar Padmanaban, **Dhafer Almakhles**, and Umashankar Subramaniam. 3nx dc-dc converter: Interleaved topology to enhance voltage transfer gain. In *2020 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, pages 1–6, 2020.

+20 Articles (Under review in various Journals)

Awards and Honors

- Scholarship for Master's degree (2008-2010) - the University of Auckland, Auckland, New Zealand, by The Higher Education Ministry of Saudi Arabia.
- Scholarship for Doctor of Philosophy degree (2011-2016) - the University of Auckland, Auckland, New Zealand, by The Higher Education Ministry of Saudi Arabia.
- Responsible for coordinating the NCAAA accreditation process for the Communications and Networks Engineering program along with the initial ABET Accreditation of Electrical Engineering program at Prince Sultan University.

- Top 10% Reviewers, on Publons, in Engineering field in the world (2018).
- 2nd top reviewer, on Publons, for Prince Sultan University, Saudi Arabia (2018).
- Excellence in Research by Prince Sultan University – 2016/2017, 2017/2018 and 2018/2019.
- Achieved the Academic Outstanding Performance Awards by Saudi Cultural Mission for 2009 and 2010.
- Invited by King Abdullah University of Science and Technology (KAUST) to Participate in Winter Enrichment Programs for both 2015 and 2016.
- Invited by Ministry of Education- Saudi Arabia to participate in International Exhibition & Conference on Higher Education– 2011.
- Served as a review panelist to closely read, analyze and evaluate several research proposals submitted to King Abdulaziz City for Science and Technology (KACST).
- Best presentation award for the paper entitled "Primary-Switched-Inductance Single-Ended Converter for E-Vehicles Applications" at the IEEE 3rd Global Power, Energy and Communication Conference (IEEE GPECOM2021).
- Received IEEE Best Paper Award at IEEE GPECOM2020, 2nd Global Power, Energy and Communication Conference (IEEE GPECOM2020) for the paper entitled "Novel Hybrid High Gain Converter: Combination of Cuk and Buck-Boost Structures with Switched Inductor doe DC Microgrid".
- Served as a reviewer for many top journals and reputable conferences including:

IEEE Transaction on Control of Network Systems	IEEE Sensors Journal
IEEE Transactions on Systems, Man and Cybernetics	IET Power Electronics
IEEE Transactions on Control Systems Technology	International Journal of Control
IEEE Transactions on Industrial Electronics	IEEE American Control Conference
IEEE Transactions on Circuits and Systems: Brief Express II	Control Engineering Practice
Journal of Systems Science and Complexity	IEEE Transactions on Fuzzy Systems
IEEE Conference on Decision and Control	IEEE Control Systems Letters
International Journal of Systems Science	IEEE European Control Conference

Membership Organizations

- Senior member of IEEE, 2020- present,
- IEEE Member 2015-2020
- Member of IEEE Control Systems Society, 2015 – Present
- Member of IEEE Industrial Electronics Society, 2015 – Present
- Member of IEEE Power & Energy Society, 2020 – Present
- Member of Saudi Engineering association, 2016/2017

Committees

- Member of the Research and Incentive Committee, PSU (2021/2022-present)
- Member of the Research Ethics Committee, PSU (2020/2021-present)
- Member of the Institutional Personnel Affairs Committee, PSU (2017/2018)
- Member of the Academic Advising Committee, PSU (2018/2019)
- Chair of Teaching Award Committee – College of Engineering, PSU (2018/2019)
- Member of Formation of the University Ranking 2030 Steering Committee, (2020/2021)
- Participated in a community service event for planting 40 plants - Thumama Road, 17 January 2019
- Served in a MATLAB Programming Contest and Workshop, IEEE Students branch, 26/12/02016
- Communications and Networks Department representative, and organizer for a visit to the main branch of STC training center for the senior students, 16 January 2019
- Volunteer Reviewer, Undergraduate Research Forum, (2017/2018) - (2018/2019)
- Communications and Networks department representative, host a number of junior schools and set up a set of experimental, 5-7 November 2017

- Member of Examination Control Committee, Institutional level (2016/2017)
- Chair of standard#6 of the national accreditation (NCAAA), program level. (2016/2017)
- Member of standard# 2, 3, and 4 of the national accreditation (NCAAA), program level. (2016/2017) - (2017/2018)
- Chair of recruitment committee, program level (2017/2018 – Present)

Councils

- Engineering College Council, (2018/2019- present)
- Department of Communications and Networks Council (2016/2017 – Present)
- Advisory Board Council for College of Engineering, PSU, Coordinator, (2019/2020 – Present)