

Mouloud Aoudia

Department of Industrial Engineering

College of Engineering, Northern Border University, Arar, Saudi Arabia |
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Industrial Engineering academic and program leader with experience in academic leadership, quality assurance, academic accreditation, curriculum development, strategic planning, and graduate studies administration in Saudi Arabia and Algeria. Combines university teaching, accreditation leadership, research, and scholarly service with prior industry experience in manufacturing, project engineering, and investment studies.

Education

Ph.D. in Industrial Engineering / January 2010

National Polytechnic School (Algiers, Algeria), in cooperation with University Paris 12 (Paris, France)

Thesis contribution: Developed an LCC-based decision-support approach for strategic maintenance management, enabling the prioritization of maintenance improvement actions and more rational budget planning.

M.S. in Economics and Applied Statistics / April 1999

National School of Statistics and Applied Economics (formerly National Institute of Planning and Statistics), Algiers, Algeria

Thesis contribution: Developed a systemic decision-support framework for coordinating SME networks by integrating statistical diagnosis, public-support cost evaluation, forecasting, and bi-objective optimization.

B.S. in Industrial Engineering / July 1995

National Polytechnic School, Algiers, Algeria

Thesis contribution: Developed an inventory-driven production-planning model for SONACOME that identified the optimal product mix to maximize the cost-weighted use of existing stock, making inventory availability the starting point for production decisions.

Academic Appointments and Leadership

Academic and Leadership Roles at Northern Border University

University Level (Northern Border University)

- Consultant to the University Vice President of Graduate Studies and Scientific Research for Quality and Academic Accreditation (March 2021–July 2024)
- Consultant, Deanship of Graduate Studies (January 2016–July 2023)

College Level (College of Engineering, Northern Border University)

- Consultant to the Dean of the College of Engineering (January 2023–March 2025)
- Consultant to the Dean of the College of Engineering for Quality and Academic Accreditation (September 2022–March 2025)

Department Level (Industrial Engineering Department, College of Engineering, Northern Border University)

- Program Director, B.Sc. in Industrial Engineering (2017–Present)
- Head, Industrial Engineering Department, College of Engineering, Northern Border University, Arar, Saudi Arabia (2017–2018)
- Assistant Professor, Industrial Engineering Department, College of Engineering, Northern Border University, Arar, Saudi Arabia (August 2012–Present)
 - Selected courses taught: Risk Analysis and Management (master's level); Safety Compliance and Regulation (master's level); Master's Thesis Supervision; Capstone Design Projects I and II; Industrial Systems Simulation; Project Management; Reliability Engineering; Decision Analysis; Operations Research I and II; Supply Chain Management; Lean Manufacturing; Safety Engineering; Industrial Quality Control; Engineering Ethics;

Engineering Economy; Engineering Management; Introduction to Engineering Design; Probability and Statistics; Introduction to Industrial Engineering.

- Provides academic and professional guidance to students in course selection, career planning, and skills development.
- Contributes to curriculum review and continuous improvement to align the program with industry needs and accreditation standards.
- Uses a student-centered teaching approach emphasizing practical applications, real-world problem solving, and critical thinking.

Previous Academic Appointments

- Assistant Professor, National School of Statistics and Applied Economics, Algiers, Algeria (September 2011–August 2012)
- Assistant Professor, Industrial Engineering Department, King Khalid University, Abha, Saudi Arabia (September 2010–August 2011)
- Assistant Professor, Department of Management, University Kasdi Merbah, Ouargla, Algeria (January 2010–August 2010)
- Lecturer, Department of Management, University Kasdi Merbah, Ouargla, Algeria (September 2003–December 2009)
- Lecturer, National School of Statistics and Applied Economics, Algiers, Algeria (October 2000–August 2003)

Industrial Experience

- Manager, Plastic Fiber Algeria SARL, Algiers, Algeria (2000–2003)
- Studies Manager, Investment Promotion Support & Monitoring Agency, Algiers, Algeria (1998–2000)
- Project Engineer, National Company of Non-Ferrous Mining Products & Useful Substances, Algiers, Algeria (1997–1998)

Quality Assurance and Academic Accreditation Leadership

University Level (Northern Border University)

- Member, Permanent Committee for the Standard 3: "Teaching and Learning" (2025/2026–Present)
- Member, Quality and Development Unit, Vice Presidency for Academic Affairs (2025/2026–Present)
- Member, Council of the Deanship of Quality & Academic Accreditation (2022–2023)
- Coordinator with NCAAA for international accreditation at NBU (2023–2025)
- Member, Permanent Committee of Reviewers (2022–2024)
- Member, Permanent Internal Audit Committee for Academic Programs (2019–2022)
- Member, Permanent Committee for Auditing Engineering and Computing Academic Programs (2023–2024)
- Member, Committee for Meeting Condition No. 2 (ETEC/NCAAA) (2023–2024)
- Member, Standard 3: "Teaching and Learning" Committee (NCAAA Project) (2019/2020–2020/2021)
- Member, Sub-Standard 3: "Graduate Programs" Committee (NCAAA Project) (2019/2020–2020/2021)
- Member, Standard 7: "Scientific Research" Committee (NCAAA Project) (2019/2020–2020/2021)
- Member, Committee for Establishing University Policies for Evaluating Learning Outcomes (2020/2021–2021/2022)

College Level (College of Engineering, Northern Border University)

- Vice Chair, Quality and Development Committee (2025–Present)
- Director, Quality Assurance and Academic Accreditation Unit (2014–2025)
- Chair, Accreditation Coordinating Committee (2014–2025)
- Coordinator, NCAAA Accreditation of College Programs (2021–2025)
- Coordinator, ABET Accreditation of College Programs (2014–2025)

Department Level (Industrial Engineering Department, College of Engineering, Northern Border University)

- Vice Chair, Quality and Development Committee (2025–Present)

- Coordinator, Academic Accreditation Committee (2014–2025)
- Chair, NCAAA Self-Study Report Committee (2022/2023–2023/2024)
- Chair, ABET Self-Study Report Committee (2014/2015–2015/2016 & 2022/2023)
- Lead Author, ABET and NCAAA Self-Study Reports: Drafted, organized, and finalized report content; led data collection and analysis; and integrated input from faculty and administration to meet accreditation requirements (2014–2025).
- Coordinator for Key Performance Indicators (KPIs), Program Learning Outcomes (PLOs) assessment, stakeholder surveys (students, faculty, alumni, and employers), and Annual Program Reports preparation and submission (2014–2025).
- Member, Program Advisory Board: Contributed to strategic planning, curriculum alignment, and continuous improvement initiatives based on stakeholder feedback (2014–2025).
- Lead, Periodic Review of B.Sc. in Industrial Engineering Curriculum: Led the full revision of the undergraduate curriculum to align with industry trends, stakeholder feedback, and accreditation standards (2014/2015–2022/2023).
- Lead, Development of the M.Sc. in Safety Engineering and Risk Management Program: Directed the planning, curriculum design, and documentation required for approval and launch of the graduate program (2023/2024).

Curriculum Development and Strategic Educational Initiatives

University Level (Northern Border University)

- Member, Permanent Committee for Academic Plans and Programs (2017–2024; 2025–Present)
- Member, Committee for Developing the Manual of Learning and Teaching Strategies (2019/2020–2020/2021)
- Member, Committee for Restructuring Academic Programs (2020/2021–2021/2022)
- Member, Committee for Feasibility Studies for New Programs (2020/2021–2021/2022)
- Member, Committee for Interdisciplinary Program Models (2021/2022–2022/2023)
- Member, Committee for Mining and Related Fields Programs (2021/2022–2022/2023)
- Member, Committee for Programs in Excellence Areas (2021/2022–2022/2023)
- Member, Committee for Developing the University Guide for Designing, Developing, and Reviewing Programs (2020/2021–2021/2022)
- Assessment & Evaluation Committee of the Preparatory Year Program (2014–2015)

College Level (College of Engineering, Northern Border University)

- Member, Curriculum Committee (2014–Present)
- Coordinator, Mining Engineering Program Establishment Committee (Aug 2021–Present)
- Member, Mining Diploma Establishment Committee (August 2021 – September 2022)

Department Level (Industrial Engineering Department, College of Engineering, Northern Border University)

- Member, Curriculum Committee (2019–Present)
- Chair, Curriculum Committee (2014–2018)

Strategic Planning and Governance

University Level (Northern Border University)

- Member, Standing Committee for Achieving the Objectives of the University Leadership Initiative (2024/2025–Present)
- Member, Permanent Committee for University Governance (2022–2023)
- Member, Permanent Committee for Monitoring Strategic Initiatives (2020–2023)
- Member, Higher Permanent Committee for Vision 2030 Realization (2018–2019)
- Member, Permanent Committee for Vision 2030 Realization (2018–2019)
- Deputy Director, Office of Vision 2030 Realization (2018–2019)
- Member, Committee for Restructuring Scientific Departments of the College of Business Administration at Northern Border University (2022/2023)
- Member, Committee for the Feasibility Study for Establishing a Mining College (2021/2022–2022/2023)

College Level (College of Engineering, Northern Border University)

- Coordinator, College Committee for Achieving the University's Strategic Goals in Mining (2022–2025)
- Coordinator, Strategic Planning & Initiatives Committee (2021–2025)
- Coordinator, Operational Plan Committee (2019–2025)

Department Level (Industrial Engineering Department, College of Engineering, Northern Border University)

- Chair, Operational Plan Committee (2019–2025)

Research and Graduate Studies Service

University Level (Northern Border University)

- Member, Permanent Committee of Graduate Studies (2022–2024)
- Member, Graduate Studies Council (2016/2017–2022)
- Member, Committee for Reviewing Executive Regulations of Graduate Studies (2021/2022)
- Member, Committee for Developing Procedures for Scientific Publishing and Authorship (2017–2018)
- Member, Committee for Developing Master's Degree Programs (2020/2021–2022/2023)
- Member, Committee for Establishing High-Demand Diploma and Master's Programs (2020–2022)
- Member, Graduate Studies Development Committee (2020–2022)
- Member, Committee for Developing the Innovation and Research Strategic Plan (2019/2020–2020/2021)

Department Level (Industrial Engineering Department, College of Engineering, Northern Border University)

- Coordinator, Committee for Establishing the Master of Science in Safety Engineering and Risk Management Program (2023/2024–2024/2025)

Additional University Service

University Level (Northern Border University)

- Member, University's Academic Integrity Policy Committee (2023)

College Level (College of Engineering, Northern Border University)

- Chair, Laboratories Committee (2023–Present)

Department Level (Industrial Engineering Department, College of Engineering, Northern Border University)

- Member, Community Service Committee (2014–Present)
- Member, Academic Advising and Career Guidance Committee (2014–Present)
- Member, Alumni Committee (2014–Present)
- Member, Faculty and Staff Affairs Committee (2014–Present)

Publications

Journal Articles (43)

1. Aoudia, M. (2026). Reduction of Interface-Induced Order Degradation via a Conditional Hybrid Neural-IMEX Framework. *Mathematics*, 14(11), 1948. <https://doi.org/10.3390/math14111948>
2. Aoudia, M. (2026). Defect-Targeted Correction of BDF2 at Isolated Temporal Interfaces: A Local Analysis. *Mathematics*, 14(11), 1866. <https://doi.org/10.3390/math14111866>
3. Aoudia, M., Safra, I., Salawu, S. O., Ghazi, H. M., Khaydarov, I., Liaqat, S., Farkhad, D. R., & Abbas, M. (2026). Applications of Nimonic 80A/HFE-7100-Based Nanofluid in Industrial Systems: An Examination of Cattaneo-Christov Flux and LTNE Effects Using an Artificial Neural Network. *Journal of Thermal Analysis and Calorimetry*, Accepted for publication.
4. Aoudia, M. (2026). Optimal-Order Switching-Aware Time Integration for Switched Process Models Governed by Semilinear Parabolic Equations. *University of Ha'il Journal of Science*, Accepted for publication.
5. Aoudia, M., Niazi, S., Khan, I., Farkhad, D. R., Abdullaeva, B., Bayram, M., & Abbas, M. (2026). Optimization-Ready Modeling of Heat and Mass Transfer in Graphene Oxide/Carboxymethyl Cellulose-Water-Based Nanofluid with Heat Exchangers and Membrane-Based Desalination. *Discover Nano*, Accepted for publication.

6. Abbas, M., Alam, M. M., Aoudia, M., Benabdallah, F., Akgül, A., & Hassani, M. K. (2026). Artificial Neural Network Analysis for Oxytactic Microbes in Hybrid Nanofluid with Chemical Reaction and Thermal Radiation. *Discover Nano*, 21, 180.
<https://doi.org/10.1186/s11671-026-04519-4>
7. Abbas, M., Aoudia, M., Benabdallah, F., Khashi'ie, N. S., Inc, M., & Abas, S. S. B. (2026). Design-Oriented Modeling of $Ti_6Al_4V+TiO_2$ /Carboxymethyl Cellulose-Water-Based Hybrid Nanofluid: Backpropagation Bayesian Regularization Neural Network Technique. *Journal of Engineering Research*.
<https://doi.org/10.1016/j.jer.2026.04.010>
8. Aoudia, M., Benabdallah, F., Khan, M. S., & Abbas, M. (2026). Enhancing Heat and Mass Transfer in Hybrid Nanofluid with Gyrotactic Microbes and Local Thermal Non-Equilibrium Effects Using an Artificial Neural Network. *Discover Nano*, 21, 69.
<https://doi.org/10.1186/s11671-026-04471-3>
9. Tang, X., Sun, X., Salih, S. Q., Shaban, M., Samad, S., Almadhor, A., Alhomayani, F. M., Kamolova, N., Aoudia, M., & Alkhalaf, S. (2025). Improving energy absorption capacity in a thermal energy storage system for domestic heating applications using an integrated machine learning/numerical approach. *Applied Thermal Engineering*, 279, 127758.
<https://doi.org/10.1016/j.applthermaleng.2025.127758>
10. Aich, W., Hassan, H. I., Taher, W. M., Alwan, M., Mushtaq, H., Aoudia, M., Imen Safra, & Kolsi, L. (2025). Impact of Aging-Induced Hemodynamic Variations on Rupture Risk in Terminal MCA Aneurysms: A Computational Study. *International Journal of Modern Physics C*, 2550122.
<https://doi.org/10.1142/S0129183125501220>
11. Anjum, M. W., Saqib, S. U., Shih, Y. T., Hassan, I. U., Jaghdam, I. H., Aoudia, M., & Kolsi, L. (2025). Application of Kolmogorov-Arnold Network (KAN) for Solitary-Peakon Investigation of Lax Model. *Case Studies in Thermal Engineering*, 106537.
<https://doi.org/10.1016/j.csite.2025.106537>
12. Rashad, A. M., Abdulrazzaq, T., Kolsi, L., Mansour, M. A., Aoudia, M., Salah, T., & Togun, H. (2025). Entropy Generation Due to MHD Natural Convection in a Square Enclosure with Heater Corners in a Saturated Porous Medium Using Cu/Water Nanofluid Containing an Insulated Obstacle. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 47(8), 373.
<https://doi.org/10.1007/s40430-025-05672-0>
13. Hnaïen, N., Neffati, S., Abdullah, N., Hassen, W., Aoudia, M., & Kolsi, L. (2025). Optimizing heat transfer in turbulent impinging jets array: A computational fluid dynamics investigation and machine learning approach for predicting the average Nusselt number. *Physics of Fluids*, 37(5).
<https://doi.org/10.1063/5.0275241>
14. Aoudia, M., Abbas, M., Alazman, I., & Khan, I. (2025). Thermo-Solutal Convective Flow of Nanofluid with Marangoni Convection: An Artificial Neural Network Study Considering Thermophoresis and Thermal Radiation Effects in Systems. *Journal of Radiation Research and Applied Sciences*,
<https://doi.org/10.1016/j.jrras.2025.101612>
15. Li, Y., Shaban, M., Salih, S. Q., Almadhor, A., Aoudia, M., Abdullaeva, B., Alkhalaf, S., Albalawi, H., Mahariq, I., & Alalawi, A. (2025). P2P trading and energy storage technologies for mitigating balancing challenges of RESs integration into multi-energy power systems: A new paradigm for DER integration. *Journal of Energy Storage*, 124, 116848.
<https://doi.org/10.1016/j.est.2025.116848>
16. Yuan, R., Shi, F., Abed, A. M., Shaban, M., Samad, S., Almadhor, A., Abdullaeva, B., Aoudia, M., Alkhalaf, S., & Babiker, S. G. (2025). Numerical thermodynamic-economic study and machine learning-based optimization of an innovative biogas-driven integrated power plant combined with sustainable liquid CO₂ and liquid H₂ production-storage processes. *Case Studies in Thermal Engineering*, 69, 106043.
<https://doi.org/10.1016/j.csite.2025.106043>
17. Galal, A. M., Aoudia, M., Abbas, A., Khidhir, D. M., Ching, D. L. C., Abbas, M., Noor, F.M.N., Bakouri, M., & Khan, I. (2025). Modeling and design considerations for heat and mass transfer with diamond-cobalt oxide/ethylene glycol booger hybrid nanofluid in industrial systems. *Journal of Radiation Research and Applied Sciences*, 18(2), 101441.
<https://doi.org/10.1016/j.jrras.2025.101441>

18. Aoudia, M., Benabdallah, F., Abbas, A., Khidhir, D. M., Ching, D. L. C., Memon, A. A., Abbas, M., Khan, I., Liaqat, S., & Galal, A. M. (2025). Numerical Investigation of Thermal Radiation Effects on Chemically Reactive Flow of Microbes in Hybrid Nanofluid over a Rotating Disk. *Journal of Radiation Research and Applied Sciences*, 18(2), 101435.
<https://doi.org/10.1016/j.jrras.2025.101435>
19. Rahmouni, M. H., Salhi, M. S., Touti, E., Allagui, H., Aoudia, M., & Barr, M. (2025). Embedded deep learning models for multilingual speech recognition. *Computers and Electrical Engineering*, 123, 110271.
<https://doi.org/10.1016/j.compeleceng.2025.110271>
20. Saand, A. S., Jamali, M. I., Koondhar, M. A., Kaloi, G. S., Albasha, L., Aoudia, M., & Touti, E. (2025). A Comparative Review: Floating Photovoltaic, Agrivoltaics, and Ground-Mounted PV Systems. *IEEE Access*, 13, 45853–45873.
<https://doi.org/10.1109/ACCESS.2025.3547438>
21. ur Rehman, W., Koondhar, M. A., Afridi, S. K., Albasha, L., Smaili, I. H., Touti, E., Aoudia, M., Zahrouni, W., Mahariq, I. & Ahmed, M. M. R. (2025). The Role of 5G Network in Revolutionizing Agriculture for Sustainable Development: A Comprehensive Review. *Energy Nexus*, 100368.
<https://doi.org/10.1016/j.nexus.2025.100368>
22. Suleman, M., Mehmood, A., Khan, S. U., Adnan, Abdullah, N., Aoudia, M., Maatki, C., & Kolsi, L. (2025). Advanced finite element simulations for brain tumor hyperthermia using polycrystalline Fe₃O₄ superparticles with optimized thermal radiation control. *Journal of Radiation Research and Applied Sciences*, 18(4), 101916.
<https://doi.org/10.1016/j.jrras.2025.101916>
23. Aoudia, M., Abbas, M., Benabdallah, F., Alazman, I., Alqahtani, N. A., Khan, I., Faqihi, A. A., & Liaqat, S. (2025). Radiation effects on gyrotactic microbes in tetra-hybrid nanofluid: Enhancing mass and heat transfer processes in microfluidic and bio-convective systems. *Journal of Radiation Research and Applied Sciences*, 18(4), 101921.
<https://doi.org/10.1016/j.jrras.2025.101921>
24. Abbasi, A. Z., Jaghdam, I. H., Aoudia, M., Maatki, C., Hassen, W., & Kolsi, L. (2025). Hybrid GA-SQP Neural Network Framework for Solving English-Language Learning. *Scientific Reports*, 15, 36450.
<https://doi.org/10.1038/s41598-025-20540-6>
25. Aoudia, M., Abbas, M., Marzouki, R., Norberdiyeva, M., Bayram, M., Akgül, A., Faqihi, A. A., & Mahariq, I. (2025). Tribological Thermal-Solutal Analysis of Oxytactic and Gyrotactic Microorganisms in Ternary Hybrid Nanofluid with Local Thermal Non-Equilibrium Effects. *Journal of Thermal Analysis and Calorimetry*, 150, 16701–16717.
<https://doi.org/10.1007/s10973-025-14734-3>
26. Aoudia, M., Elhag, A. B., Abbas, M., Benabdallah, F., Yuldashev, F., Akgül, A., Bayram, M., & Liaqat, S. (2025). Enhanced Thermal Analysis of CNTs+TiO₂/Water-Based Tri-Hybrid Nanofluid with Gyrotactic Microbes and Hall Current: Applications in Enzyme Biosensors and Bacteria-Powered Micromixers. *Journal of Thermal Analysis and Calorimetry*, 150, 22105–22118.
<https://doi.org/10.1007/s10973-025-14937-8>
27. Chebaane, S., Obalalu, A. M., Abbas, A., Anwar, F., Adnan, Aoudia, M., Alshammari, B. M., Bouzidi, M., & Kolsi, L. (2024). EMHD Flow and Heat Transport in Cross-Ternary Nanofluid with Gyrotactic Microorganisms: A Case Study on Thermophoretic Particle Deposition. *Case Studies in Thermal Engineering*, 64, 105531.
<https://doi.org/10.1016/j.csite.2024.105531>
28. Bilal, M., Gana, S., Muhammad, T., Aoudia, M., Kolsi, L., & Ahmad, Z. (2024). Numerical investigation of tangent hyperbolic stagnation point flow over a stretching cylinder subject to solutal and thermal stratified conditions. *Journal of Thermal Analysis and Calorimetry*.
<https://doi.org/10.1007/s10973-024-13631-5>
29. Basha, C. H. H., Rafikiran, S., Touti, E., Graba, B. B., Aoudia, M., & Zeng, J. (2024). A Universal-Source DC–DC Boost Converter for PEMFC-Fed EV Systems with Optimization-Based MPPT Controller. *International Transactions on Electrical Energy Systems*.
<https://doi.org/10.1155/2024/5520331>
30. Younis, R. A., Touti, E., Aoudia, M., Zahrouni, W., Omar, A. I., & Elmetwaly, A. H. (2024). Innovative hybrid energy storage systems with sustainable integration of green hydrogen and energy management solutions for standalone PV microgrids based on reduced fractional gradient descent algorithm. *Results in Engineering*.
<https://doi.org/10.1016/j.rineng.2024.103229>

31. Ali, T., Asad, M., Touti, E., Graba, B. B., Aoudia, M., Abbas, G., Alnuman, H., & Nureldeen, W. (2024). Terminal voltage and load frequency control in a real four-area multi-source interconnected power system with nonlinearities via OOB algorithm. *IEEE Access*. <https://doi.org/10.1109/ACCESS.2024.3453755>
32. Riasat, S., Naqvi, S. A. H., Khan, N., Ahmad, Z., Muhammad, T., Alwuthaynani, M., Aoudia, M., & Kolsi, L. (2024). Energy efficiency and thermal stress analysis of hexahedron and tetrahedron nanoparticles in annular fin with ternary nanofluid. *The European Physical Journal Plus*. <https://doi.org/10.1140/EPJP/S13360-024-05446-Y>
33. Aghaei, H., Larki, H. A., Taqizadeh, M., Aoudia, M., Aich, W., & Kolsi, L. (2024). Multi-objective modeling and optimization of dissimilar laser welding by integrating an artificial intelligence predictive model with NSGA-II algorithm. *Materials Today Communications*. <https://doi.org/10.1016/j.mtcomm.2024.109765>
34. Koondhar, M. A., Afridi, S. K., Saand, A. S., Khatr, A. R., Albasha, L., Alaas, Z. M., Graba, B. B., Touti, E., Aoudia, M., & Ahmed, M. M. R. (2024). Eco-friendly energy from flowing water: A review of floating waterwheel power generation. *IEEE Access*. <https://doi.org/10.1109/ACCESS.2024.3419019>
35. Touti, E., Rafikiran, S., Graba, B. B., Aoudia, M., & Senthilkumar, S. (2024). A comprehensive performance analysis of advanced hybrid MPPT controllers for fuel cell systems. *Scientific Reports*. <https://doi.org/10.1038/s41598-024-63074-z>
36. Touti, E., Rafikiran, S., Aoudia, M., Alrougy, I. M., Khan, B., & Ali, A. (2024). A New Single-Switch Universal Supply-Voltage DC–DC Converter for PV Systems with MGWM-AFLC MPPT Controller. *Scientific Reports*. <https://doi.org/10.1038/s41598-024-62171-3>
37. Afridi, S. K., Koondhar, M. A., Jamali, M. I., Alaas, Z. M., Alsharif, M. H., Kim, M. K., Mahariq, I., Touti, E., Aoudia, M., & Ahmed, M. M. R. (2024). Winds of progress: An in-depth exploration of offshore, floating, and onshore wind turbines as cornerstones for sustainable energy generation and environmental stewardship. *IEEE Access*. <https://doi.org/10.1109/ACCESS.2024.3397243>
38. Touti, E., Aoudia, M., Basha, C. H. H., Alrougy, I. M., & Oubelaid, A. (2024). A Novel Design and Analysis of an Adaptive Hybrid ANFIS MPPT Controller for PEMFC-Fed EV Systems. *International Transactions on Electrical Energy Systems*. <https://doi.org/10.1155/2024/5541124>
39. Iftikhar, H., Khan, N., Raza, M. A., Abbas, G., Khan, M., Aoudia, M., Touti, E., & Emara, A. (2024). Electricity theft detection in smart grid using machine learning. *Frontiers in Energy Research*. <https://doi.org/10.3389/fenrg.2024.1383090>
40. Aoudia, M. (2022). Appropriateness of International Accreditation Frameworks for Engineering Education in Saudi Academic Engineering Programs: A Comparative Study. *International Journal of Advanced and Applied Sciences*, 9(3), 126–136. <https://doi.org/10.21833/ijaas.2022.03.014>
41. Aoudia, M. (2015). Towards the design of a new framework for maintenance costing. *Contemporary Engineering Sciences*, 8(28), 1359–1371. <https://doi.org/10.12988/ces.2015.59264>
42. Aoudia, M., & Abu-Alqahsi, D. A. (2015). Curriculum redesign process for an industrial engineering program seeking ABET accreditation. *International Journal of Engineering Pedagogy*, 5(3), 44–51. <https://doi.org/10.3991/ijep.v5i3.4670>
43. Aoudia, M., Belmokhtar, O., & Zwingelstein, G. (2008). Economic impact of maintenance management ineffectiveness of an oil and gas company. *Journal of Quality in Maintenance Engineering*, 14(3), 306–318. <https://doi.org/10.1108/13552510810899454>

Conference Papers (3)

1. Aoudia, M., & Abu Al-Qahsi, D. A.-D. (2015). Development of a new curriculum for an industrial engineering program that meets the curriculum requirements of ABET and the institution. In *2015 IEEE Global Engineering Education Conference (EDUCON)* (pp. 1098–1102). <https://doi.org/10.1109/EDUCON.2015.7095965>
44. Aoudia, M., Marji, K., & AlQahsi, D. A. (2015). Assessment of Higher Education Quality Using a First-Year University Cohort. *Procedia - Social and Behavioral Sciences*, 191, 828–833.

<https://doi.org/10.1016/j.sbspro.2015.04.310>

2. Belmokhtar, O., & Aoudia, M. (2010, May). Conception et simulation d'un modèle basé sur le CCV pour l'amélioration de la fonction maintenance. Paper presented at the 8th International Conference on Modeling and Simulation-MOSIM'10, Hammamet, Tunisia.
3. Belmokhtar, O., Ouabdesselam, A., & Aoudia, M. (2004). Design of an Information System for Maintenance Management. In Proceedings of the 5th International Conference on Quality, Reliability, and Maintenance (QRM 2004) (pp. 329–334).

Honors and Awards

- Received a Certificate of Distinction from the President of Northern Border University, honoring outstanding research contributions as a distinguished university researcher (May 2025).
- Honored with a Certificate of Appreciation by the President of Northern Border University for significant contributions to the institutional accreditation process (May 2025).
- Awarded a Certificate of Thanks by the President of Northern Border University for key contributions to achieving full institutional accreditation and upgrading the university's accreditation status from conditional to full accreditation (May 2025).
- Received a Certificate of Gratitude from the President of Northern Border University in recognition of leadership and dedicated efforts as Program Director during the successful ABET re-accreditation of the Industrial Engineering Program (March 2025).
- Received a Certificate of Gratitude from the President of Northern Border University in January 2018, in recognition of significant contributions to the quality improvement of graduate studies within the university.
- Awarded a Certificate of Gratitude from the President of Northern Border University in December 2017 for exemplary efforts in preparing five Engineering Programs for the ABET Team Visit.
- Received a Certificate of Gratitude from the Dean of the College of Engineering in December 2017 for dedicated efforts in preparing five Engineering Programs for the ABET Team Visit.
- Awarded a Certificate of Gratitude from the Dean of the College of Engineering in recognition of contributions to the quality improvement of engineering education within the college for the academic year 2014/2015.
- Honored with the Best Faculty Award by the Dean of the College of Engineering for the academic year 2014/2015, recognizing outstanding performance and contributions.
- Granted a scholarship by the Algerian Government for doctoral research finalization in France, covering the years 2005–2008.

Professional Development

Academic Accreditation

- Reviewer, National Center for Academic Accreditation and Evaluation (NCAAA/ETEC) (2021–Present)
- Participated in ETEC/NCAAA review panels for the evaluation of academic programs in Saudi universities.
- Participated in the 2021/2022 project assessing quality at private universities and colleges.

Quality Assurance, Strategic Planning, and Academic Accreditation Workshops

- "Designing Academic Programs for Engineering Specializations" — National Center for Assessment, Measurement and Accreditation — 27 October 2024.
- "Formulating the Academic Program Mission and Objectives in Light of the University's Mission, Objectives, and Graduate Attributes" — Deanship of University Education Development, Northern Border University — 6 December 2022.
- "Strategic, Operational, and Executive Plans and Performance Indicators" — Research and Consulting Institute, King Abdulaziz University — 20–21 March 2022.
- "Academic Accreditation Reviewer" — Education and Training Evaluation Commission (Saudi Arabia) — 15–20 October 2020.
- "Key Performance Indicators (KPIs)" — Ministry of Education Headquarters (Riyadh, Saudi Arabia) — 18 April 2018.

- "Evaluating the Study Plan from an ABET Perspective" — Deanship of University Education Development, Northern Border University — 1 September 2015.
- "Advanced Program Assessment Workshop" — ABET Seminar (Atlanta, Georgia, USA) — 25 April 2015.
- "2015 ABET Symposium" — Atlanta, Georgia, USA — 23–24 April 2015.
- "Preparing the University for the Initial Self-Evaluation" — Deanship of Quality and Academic Accreditation, Northern Border University — 3 December 2013.
- "Report Writing" — Deanship of Quality and Academic Accreditation, Northern Border University — 18 November 2013.
- "Tools for Measuring the Quality of Programs and Courses and the Performance of Faculty Members" — Deanship of Quality and Academic Accreditation, Northern Border University — 11 November 2013.
- "Program and Course Reports" — Deanship of Quality and Academic Accreditation, Northern Border University — 30 September 2013.

Teaching, Learning, and Curriculum Design Workshops

- "Assessment Methods According to Learning Domains" — Deanship of University Education Development, Northern Border University — 15 December 2022.
- "Learning Outcomes Aligned with the National Qualifications Framework" — Deanship of University Education Development, Northern Border University — 8 December 2022.
- "Teaching Strategies According to Learning Domains" — Deanship of University Education Development, Northern Border University — 6 December 2022.
- "Formulating and Measuring Learning Outcomes for Academic Programs" — Deanship of University Education Development, Northern Border University — 22 May 2022.
- "Modern Teaching Strategies" — Deanship of University Education Development, Northern Border University — 13–14 February 2022.
- "Design and Development of Academic Programs and Curricula" — Deanship of University Education Development, Northern Border University — 13–14 February 2022.
- "Designing and Measuring Learning Outcomes for Academic Programs" — Deanship of University Education Development, Northern Border University — 28 October 2019.
- "Engineering Ethics" — Deanship of University Education Development, Northern Border University — 18 May 2015.
- "Support Tools for Preparing the Course File" — Deanship of University Education Development, Northern Border University — 7 May 2015.
- "How to Use the E-Learning System (Blackboard)" — Deanship of E-Learning and Distance Learning, Northern Border University — 27–29 April 2014.

Research, Innovation, and Technical Skills Workshops

- "Energy Efficiency in the Kingdom and the Importance of Rationalizing Its Consumption" — College of Engineering, Northern Border University — 24 September 2025.
- "Research and Development Initiatives and Their Impact on Improving the Quality, Efficiency, and Effectiveness of Scientific Research in Saudi Universities..." — Deanship of Scientific Research, King Khalid University — 27–28 March 2019.
- "Cybersecurity Fundamentals" — Deanship of University Education Development, Northern Border University — 13 September 2018.
- "Accelerated Deterioration of Concrete in the Arabian Gulf and Applications of Natural Pozzolan" — College of Engineering, Northern Border University — 19 December 2017.
- "Drafting Patents According to the Requirements of the Saudi Patent Office" — Northern Border University — 20 October 2015.
- "Industrial Engineering Tools for Improving Productivity" — College of Engineering, Northern Border University — 8 October 2015.
- "Search and Retrieval Using Digital Library Databases" — Deanship of Library Affairs, Northern Border University — 15 January 2015.

- "Introduction to the Saudi Digital Library (SDL) and Research Skills" — Deanship of Library Affairs, Northern Border University — 10 November 2013.
- "IEEE and ASKZAD Databases" — Northern Border University — 16 March 2013.

Professional Memberships, Certifications, and Scholarly Service

Professional Memberships and Certifications

- Certified COMFAR III Expert, United Nations Industrial Development Organization (UNIDO), Vienna (May 1999), specializing in project evaluation and financial analysis.
- Senior Member, Institute of Industrial and Systems Engineers (IISE), USA.
- Member, International Society for Engineering Pedagogy (IGIP), Austria.

Journal and Conference Peer Review Service

- International journals and conferences: Physics of Fluids, Results in Engineering, PLOS One, Journal of Industrial Engineering and Management, and IEEE EDUCON.

Editorial Board Appointments

Associate Editor and Reviewer

Official English Name	Institution / University
El-Bahith Review	University of Kasdi Merbah, Ouargla, Algeria
Algerian Review of Economic Development	University of Kasdi Merbah, Ouargla, Algeria
Creativity Journal	University of Ali Lounici (Blida 2), Blida, Algeria
Entreprise Review	University of Ibrahim Sultan Chibout (Algiers 3), Algiers, Algeria
Journal of Finance and Accounting Studies	University of Echahid Hamma Lakhdar, El Oued, Algeria
Journal of Research and Scientific Studies	University of Yahia Farès, Medea, Algeria

Associate Editor

Official English Name	Institution / University
Journal of Economics and Applied Statistics	National Higher School of Statistics and Applied Economics, Algeria
Journal of Quantitative Economics Studies	University of Kasdi Merbah, Ouargla, Algeria
The Economic and Human Development Magazine	University of Ali Lounici (Blida 2), Blida, Algeria
Journal of Economic Studies and Research in Renewable Energy	University of El Hadj Lakhdar (Batna 1), Batna, Algeria
Economic Development Review	University of Echahid Hamma Lakhdar, El Oued, Algeria
Algerian Journal of Economics and Management	University of Mohamed Ben Ahmed (Oran 2), Oran, Algeria
Journal of Economic Integration	University of Ahmed Draya, Adrar, Algeria
Journal of Economic Additions	University of Ghardaia, Ghardaia, Algeria

Official English Name	Institution / University
Journal of Management and Economic Sciences Prospects	University of M'sila, M'sila, Algeria
Algerian Journal of Public Finance	University of Abou Bekr Belkaid, Tlemcen, Algeria
Beam Journal of Economic Studies	Al-Wancharissi University Center, Tissemsilt, Algeria
Journal of Economic Studies	University of Ziane Achour, Djelfa, Algeria
Djadid El-iktissad	National Association of Algerian Economists, Algeria
Namaa Economy and Trade Journal	University of Mohammed Seddik Ben Yahia, Jijel, Algeria
Review of Economic Papers	University of Mohammed Seddik Ben Yahia, Jijel, Algeria
Fiscal Studies Review	University of Ali Lounici (Blida 2), Blida, Algeria
El-Hikma Journal of Economic Studies	El-Hikma Center for Research and Studies, Algeria
Economic Research Journal	University of Ali Lounici (Blida 2), Blida, Algeria
Economics & Management Journal	University of Ahmed Draya, Adrar, Algeria
Algerian Business Performance Review	University of Kasdi Merbah, Ouargla, Algeria
The International Journal of the Manager	Higher School of Management and Digital Economy, Kolea, Algeria
Algerian Journal of Political Economy	University of Echahid Hamma Lakhdar, El Oued, Algeria
Malek Bennabi Journal of Research and Studies	University of Ibn Khaldoun, Tiaret, Algeria
Journal of Economics and International Trade	University of Ibn Khaldoun, Tiaret, Algeria
Algerian Journal of Economics and Business Studies	University of Ferhat Abbas (Setif 1), Setif, Algeria
The International Journal of Economics and Business Strategies	University of Ibrahim Sultan Chibout (Algiers 3), Algiers, Algeria

Reviewer Only

- Revue d'Economie et de Management — University of Abou Bekr Belkaid, Tlemcen, Algeria
- The Teacher's Forum — École Normale Supérieure of Assia Djebbar, Constantine, Algeria
- Journal of Human & Social Sciences — University of Abdelhamid Mehri (Constantine 2), Constantine, Algeria
- The International Journal of Humanistic Studies — University of Abbas Lagrou, Khenchela, Algeria