İstanbul Aydın University

ENGINEERING FACULTY

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Istanbul Aydın University

Engineering Faculty

LATEST ACADEMIC PAPERS

Articles Published in Internationally Indexed Peer-Reviewed Journals (SCI, SCIE, ESCI, and Scopus)

Baykal, A., Caliskan, S., Almessiere, M. A., Shirsath, S. E., Fulari, A. V., Amir, M., ... & Gungunes, H. (2026). Effect of Ag substitution on magnetic and dielectric properties of Mn0. 5Zn0. 5Fe2O4 nanospinel ferrites: Mossbauer study. Materials Chemistry and Physics, 132479.

Slimani, Y., Ünal, B., Baykal, A., & Thakur, A. (2026). Crystal structure, morphology, magnetic, electrical, and dielectric characterization of amphoteric Yb2O3-modified lead-free BaTiO3 perovskite. Micro and Nanostructures, 208709.

Baykal, A., Ünal, B., Almessiere, M. A., Slimani, Y., & Türk, Z. (2026). Electrical transport and dielectric relaxation in hard/soft [SrSe0. 1Fe11. 9O19] x/[Ni0. 5Co0. 5Fe2O4] y (x= 1/2, 2/3, 1/1, 3/2 and 2/1) nanocomposites: Composition-dependent AC/DC conductivity and modulus analysis. Nano-Structures & Nano-Objects, 46, 101629.

Baykal, A., Ünal, B., Almessiere, M. A., Korkmaz, A. D., & Shirsath, S. E. (2026). Investigation of hopping conduction and dielectric relaxation in Pt-substituted CuZnCoNi spinel ferrites for high-frequency applications. Nano-Structures & Nano-Objects, 46, 101626.

Sener, E. N., Idman, E., & Yildirim, O. (2026). Seasonality-Aware Time Series Modeling for Monthly Solar PV Power Forecasting: A Comparative Study. AIJFR-Advanced International Journal for Research, 7(1).

Nazlı, H., & Yıldırım, O. (2026). Adaptive Fuzzy Network Denoising for Enhanced Thin Ice Visualization in Cross-Polarized Sentinel-1 SAR. International Journal of Electrical and Electronics Research, 14(1), 38-55.

Salehi, S. M., Aliha, M. R. M., Choupani, N., Pietras, D., & Sadowski, T. (2026). The influence of different percentages of recycled asphalt pavement (RAP) material on basic modes low temperature fracture toughness (KIc, KIIc and KIIIc) of asphalt mixtures using ENDB test. Engineering Solid Mechanics, 14(2), 137–150

Aliha, M. R. M., & Choupani, N. (2026). Numerical analyses for calculation of mixed-mode I/II stress intensity factors (SIFs) in edge cracked doughnut-shaped specimens subjected to diametral compression and diametral tension loads. Engineering Solid Mechanics, 14(2), 151–160.

Karabuga, A., Yuksel, B., Aydin, D., Utlu, Z., & Riffat, S. (2026). Thermodynamic approaches for integrating power generation and thermochemical energy storage with a novel solar-ORC system. Thermal Science and Engineering Progress, 104609.

B Cotel, E., M. Koken, and A. M. Ger. "Numerical model of breaking-up phenomena of buoyant jets in two-layer shear stratified cross-flow validated with experimental data." Physics of Fluids 38.2 (2026).

Mirzaei, N., Mahmoodirad, A., Niroomand, S., & Nowzari, R. (2026). A sustainable intuitionistic fuzzy Z-number multi-objective model for optimizing electric vehicle charging infrastructure in the European side of Istanbul. Sustainable Cities and Society, 107391.

Heydari, A., Mirzaei, N., Pamucar, D., Niroomand, S., & Nowzari, R. (2026). A Feature Selection Approach Based on Information Theory with Application to the International Monetary Fund and World Bank Economic Datasets. International Journal of Information Technology & Decision Making, 25(01), 369-392.

Kilinc, H. C., Apak, S., Citakoglu, H., Sammen, S. S., & Yurtsever, A. (2026). Hydrological time series prediction using neural architecture search-enhanced dual-stage attention-based Bi-LSTM. Hydrological Sciences Journal, 1-19.

Ince, I. F., Baydargil, H. B., Yıldırım, M. E., & Bulut, F. (2026). QStab: A Lightweight Video Stabilization Algorithm Robust to High-Frequency Perturbations. Knowledge-Based Systems, 115549.

Z.M.K. Al-Mayali, M. Ziada, Mechanical and microstructural properties of synthetic fiber reinforced geopolymers exposed to acidic environments and freeze-thaw cycles in seawater, J. Ceram. Process. Res. 27 (2026) 150–162.

Puche, A. M., Krzeminski, P., Erceg, A., Oral, H. V. , Gungormusler, M., Skoulou, V., ... & Berglez, T. (2026). Employing Industrial Symbiosis to Promote Sustainable Industrial Activities as a Transformational Change Tool, Environmental Sciences Europe, Springer

Dehghanian, K. (2026). A circular management model for sustainable and resilient geotechnical infrastructure. Discover Applied Sciences.

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Cakir, E., Sahin, M., & Bekiroglu, H. (2026). Enrichment with industrial waste whey protein and exotic fruit flours as an innovative and functional ingredient in the production of low-fat functional mayonnaise. Quality Assurance and Safety of Crops & Foods, 18(1), 195-208.

Behgouy, P., & Uğurenver, A. (2026). Electricity energy consumption forecasting using LSTM and NAR. Sigma Journal of Engineering and Natural Sciences, 44(1), 153–161

Imran, M., Ibrahim, K., Zhiwen, P., Nan, L., Qahmash, A., Atteia, G., & Akram, T. (2026). Particle swarm optimized deep learning for jamming detection and throughput enhancement in cognitive radio networks. Scientific Reports.

Demir, A., Subaşı, S., Dehgan, H., Ramazanoğlu, D., Maraşlı, M., Aksu, M., ... & Subaşı, A. (2025). A novel lanthanum hexaboride-modified cementitious composites: evolution and microstructural architecture of LaB6-integrated GFRC systems with enhanced dielectric response. Materials Chemistry and Physics, 131855.

Cemaloğlu, M., & Özdemir, O. (2026). An extensive experimental and numerical study on the effect of size of specimens on the static and impact properties of mortars. Sigma Journal of Engineering and Natural Sciences.

Şimşek, S., & Güler, K. (2026). A green alternative: Engine performance and emission effect analysis of linalool-derived biodiesel with B_4C nanoparticles for sustainable fuel solutions. Fuel Processing Technology, 282, 108401.

Yolaçtı, A., Özcan, O., & Kaya, K. (2026). Passive control of shock wave turbulent boundary layer interaction via a wall jet. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 48(3), 191.

Ergin, M. E. (2026). Modeling heterogeneity in fault attribution of Pedestrian–Vehicle crashes using a Random parameter Binary Logit approach. Accident Analysis & Prevention, 231, 108507.

Sezer, C., Kaya, K., Tabatabaei Malazi, M., & Dalkılıç, A. S. (2026). A Numerical Investigation on the Effect of Size and Volume Fraction of Red Blood Cells in a Microchannel with Sudden Expansion. Micromachines, 17(3), 316.

Alipour Ghassabi, A., & Kiziltas Sendur, G. (2026). Using TPMS Scaffold Architectures to Modulate Bone Formation and Degradation: A Finite-Element Study. Journal of Engineering Mechanics, 152(2)

Articles Published in Nationally Indexed Peer-Reviewed Journals

Müftüoğlu, T. D. (2026). Multi-year performance evaluation of rooftop rainwater harvesting systems in semi-humid Mediterranean climates: A 25-year design matrix simulation for Kadirli District, Türkiye. Journal of Kadirli Faculty of Applied Sciences, 6(1), 35–59.

Müftüoğlu, T. D. (2026). Rainwater harvesting design and optimization in semi-arid Mediterranean climates: A technical review with focus on Türkiye. Journal of Kadirli Faculty of Applied Sciences, 6(1), 121–146.

Müftüoğlu, T. D. (2026). A soft computing framework for system identification and predictive modeling of rainwater harvesting from complex architectural geometries. Mugla Journal of Science and Technology.

Müftüoğlu, T. D. (2026). A comprehensive comparative analysis of machine learning models for daily precipitation forecasting using satellite-based meteorological data. Osmaniye Korkut Ata University Journal of the Institute of Science and Technology.

Papers presented at international scientific meetings and published in proceedings books

Shahrokhshahi, F., Mohammadi, F., & Sonmez, F. (2026). LogiCue: Targeted prompting for improved modal and conditional reasoning in large language models. Procedia Computer Science, 275, 484–492.

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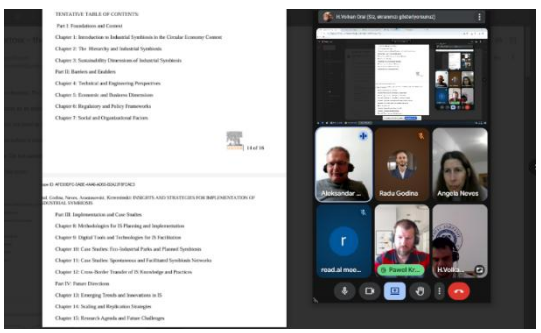
MEETING

In the meeting held with the participation of Saruhanlı Holding and representatives from Istanbul Aydın University — Dean of the Faculty of Engineering Prof. Dr. Hasan SAYGIN, Head of the Department of Mechanical Engineering Prof. Dr. Behiye YÜKSEL, Head of the Department of Electrical and Electronics Engineering Prof. Dr. Osman YILDIRIM, Prof. Dr. Erol AKATA, and Assist. Prof. Dr. Vedat ÖZTÜRK — opportunities for developing joint projects were discussed, and potential areas of collaboration aimed at strengthening university–industry cooperation were evaluated.

BOOK STUDY AND MEETING

Assoc. Prof. Dr. Hasan Volkan ORAL has reached an agreement with Elsevier Publishing for the book project entitled “Insights and Strategies for Implementation of Industrial Symbiosis.” He will serve as the chief editor of this work, leading an international editorial team consisting of academics from Portugal, Norway, and North Macedonia. The book project, which is expected to make significant contributions to current approaches and implementation strategies in the field of industrial symbiosis, was also discussed in a review meeting held with Elsevier. In addition, Assoc. Prof. Dr. ORAL attended the Circular AI project meeting on behalf of the Faculty of Engineering.



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CONFERENCE

Dr. Tevfik Denizhan MÜFTÜOĞLU from the Department of Civil Engineering (English) attended the 13th International New York Conference on Evolving Trends in Interdisciplinary Research & Practices, held in New York on 15–18 March 2026, in person. With his study titled "Decoding Rainfall Drivers: A SHAP-Supported Machine Learning Approach," Dr. MÜFTÜOĞLU demonstrated that machine learning should be regarded not merely as a popular trend, but as an effective engineering tool for analyzing complex variables in watershed hydrology, improving accuracy in peak discharge predictions, and supporting the design of hydraulic structures resilient to extreme weather events. In addition to participating in the conference program, he also visited Cornell, Columbia, Pace, and CUNY universities.

ACTIVITY

Research Assistant Sedat ARI from the Department of Software Engineering at Istanbul Aydın University met with students at the "Academy Days" event organized by Private Sultan Fatih Educational Institutions on 17 February 2026 and delivered an introductory seminar on the software engineering profession. During the event, the role of software engineering in today's technology, software development processes, and the competencies required for students planning a career in this field were discussed.

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WEBINAR

A webinar titled “Soil as a Seismic Isolator: The Earthquake Energy Damping Performance of Jet Grouting Applications” was held in collaboration with the Department of Civil Engineering at Istanbul Aydın University and the Disaster Education, Application and Research Center (AFAM).

ACTIVITIES

- The application for the DigUmanity project under Erasmus+ KA220 was completed through the partnership of Software Engineering at Istanbul Aydın University (Türkiye) with institutions from Germany, Serbia, and Italy.
- Prof. Dr. Ferdi SÖNMEZ served as a team leader in accreditation and self-evaluation studies at the IAU Faculty of Education, led consensus meetings within the scope of his membership in the European Union Innovation Commission, and carried out duties as a reviewer and commercial reviewer under TÜBİTAK. In addition, the Codeverse Club, founded and managed by students of the Department of Software Engineering under his advisorship, held the launch of the UNİDES project supported by the Ministry of Trade.
- Assoc. Prof. Dr. Hasan Volkan ORAL has been appointed by TÜBİTAK as a panelist and rapporteur in the calls for Türkiye–Greece bilateral cooperation projects.