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ENGINEERING FACULTY

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LATEST ACADEMIC PUBLICATIONS

Articles published in internationally indexed peer-reviewed journals (SCI-SCIE-ESCI and Scopus)

Choupani, N., A. R. Torun, and A. Çetin. "Mixed-Mode Fracture Performance of 3d-Printed Carbon Fiber Onyx Composites." Article, Rapid Prototyping Journal (2026): 1-10.

G. Kouchaki, H., M. R. M. Aliha, L. Marsavina, E. Linul, N. Choupani, M. M. Mirsayar, and T. Sadowski. "Mixed-Mode Tensile and in-Plane Shear Fracture Analysis for Pur Foams Using Two Sub-Sized Short Bend Beam Configurations." Article, Theoretical and Applied Fracture Mechanics 141 (2026)

Mehri Khansari, N., M. Mazaheri, and N. Choupani. "Predictive Assessment of Progressive Damage in Mechanically Fastened Glass–Epoxy Composites." Article, Polymer Composites (2026).

Naeimayi, M., N. Choupani, M. R. Ayatollahi, and A. R. Torabi. "Blunt Notch Root Fracture Assessment in Additively Manufactured Abs Specimens with Symmetrical Cross-Ply Printing Configuration: Experiments Versus Theories." Article, Theoretical and Applied Fracture Mechanics 145 (2026)

Raeisi, R., Rezaie, F., Aliha, M. R. M., Mohammadi, M. H., Choupani, N., Pietras, D., & Sadowski, T. (2026). Strength attributes and mixed-mode I/III cracking resistance of preplaced aggregate concrete reinforced with industrial and waste tire steel fibers. Construction and Building Materials, 538, 147262.

Aslan, Z., Aydoğan, M. S., Kadioğlu, Y. K., & Yiğit, Ö. (2026). Triassic volcanism in the Afyon Zone (NW Türkiye): evidence from U–Pb zircon ages, Sr–Nd isotopes, and geochemistry of an enriched mantle source. Mineralogy and Petrology, 1-21.

Slimani, Y., Ünal, B., & Baykal, A. (2026). Comprehensive Investigation of the Role of Inner Transition Metal Co-Doping in Modulating the Dielectric and Electrical Properties of Titania. Journal of the Indian Chemical Society, 102900.

Dehghanian, K., & Oral, H. V. (2026). Sustainable approaches for soil stabilization: geotechnical and life-cycle perspectives. Asian Journal of Civil Engineering, 1-15.

Dalkilic, H. Y., Kilinc, H. C., Yurtsever, A., Katipoğlu, O. M., & Yeşilyurt, S. N. (2026). Contrastive self-supervised learning for streamflow forecasting: a multi-station comparison with supervised models. Ain Shams Engineering Journal, 17(9), 104341.



Dehghanian K, Muftuoglu TD, Oral HV. Geotechnical considerations for climate-adaptive buildings and nature-based solutions: implementing sustainable solutions. In: Brears RC, editor. The Palgrave Handbook of Nature-Based Solutions. Palgrave Studies in Sustainable Futures. Cham: Palgrave Macmillan; 2026. p. 1–31.

Muhammed Davud, Faruk Bulut, SSC-NRNet: Adaptive Skip Compression for statistical, structural, and composite MRI noise reduction in a cGAN-based framework, , Biomedical Signal Processing and Control, Volume 126, Part A, 15 October 2026, 110868.

Behgouy, P. & Uğurenver, A. (2026). Robust power management in smart microgrids using an optimized LSTM-based predictive controller. International Journal of Electrical Power & Energy Systems, 179, 112034.

Nakipoğlu A, Cemaloğlu M, Döndüren MS. Effect of fine tire rubbers on the compressive strength of concrete with respect to the geometry of the test specimen. J Struct Eng Appl Mech 2026;9(2):688-1–688-12.

Müftüoğlu, T. D. (2026). Physics-constrained machine-learning surrogates for the colebrook friction factor: monotonic gradient boosting, uncertainty quantification, and open benchmarking. Scientific Reports.

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, 12(1),26-40.

Namiq HE, Ozturk BA. An artificial intelligence-based Industry 4.0 communication system using blockchain for healthcare for applications. In: Nguyen GN, Swaroop A, Shukla P, editors. Proceedings of Fifth International Conference on Computing and Communication Networks (ICCCN 2025). Lecture Notes in Networks and Systems, vol. 1836. Cham: Springer; 2026

Koman, H., & Niğdelioğlu, A. (2026). Enhanced Earthquake Performance of Existing RC Buildings Through Hybrid CFRP and Damper Retrofitting. Buildings, 16(14),2825.

Karabuga A., Inan Barutcu E., Morozova S., Utlu Z., 2026. ANN evaluation of thermodynamic efficiency, economic and environmental analysis of the geothermal-based electricity and hydrogen production system: A case study. Energy. 360:141505.

Karabuga A., 2026. A Comprehensive 4E Assessment of Geothermal-Assisted Hydrogen Production via an ORC–PEM Integrated System: Comparative Evaluation of Conventional and Low-GWP Working Fluids. International Journal of Energy Studies.



Deliktaş, D., & Doğan, M. (2026). A decision-supported bi-objective genetic algorithm for hybrid flow shop scheduling with learning effects. *Computers & Operations Research*, 107601.

Soori, M., & Azizi, A. (2026). Autonomous control systems using artificial intelligence, machine learning, and digital twins in Industry 4.0. *J. Complex Multiphys. Eng. Syst*, 1(3), 239-264.

Soori, M., & Arezoo, B. (2026). Machine learning and AI-driven digital twins in manufacturing of advanced metal alloys and compounds: A review. *Next Materials*, 13.

Papers presented at international scientific meetings and published in proceedings books

Al-Gburi Ş, Cemaloğlu M. Structural and economic performance of horizontal layered functionally graded reinforced concrete deep beams without shear reinforcement. In: 6th International Graduate Studies Congress; 2026. p. 356–358.

Text-Based Emotion Recognition Using ML, DL, and Transformers with Explainability and Stability Analysis, Mhd Wasim Raed, Asma Abubaker Bushaala, Ilham Huseyinov, Igor Kotenko and Elena Fedorchenko in the IITI 2026 (Intelligent Information Technologies for Industry): The 10th international scientific conference focusing on AI (Accepted)

Explainable Multimodal AI Framework for Early Detection and Clinical Monitoring of Alzheimer's Disease, Mhd Wasim Raed, Mustafa Mustafa, Ilham Huseyinov, Elena Fedorchenko and Ismael Warnants (Accepted)

Heidarnejad P., Karabuga A., Genceli H., Geothermal Energy–Based Hydrogen Production Via An Orc Using Mixed Refrigerants. 10th International Hydrogen Technologies Congress (IHTEC-2026)

Morozova S., Karabuga A., Global Hydrogen Emergence: A Review And Scenario Based Outlook. 10th International Hydrogen Technologies Congress (IHTEC-2026)



VISIT

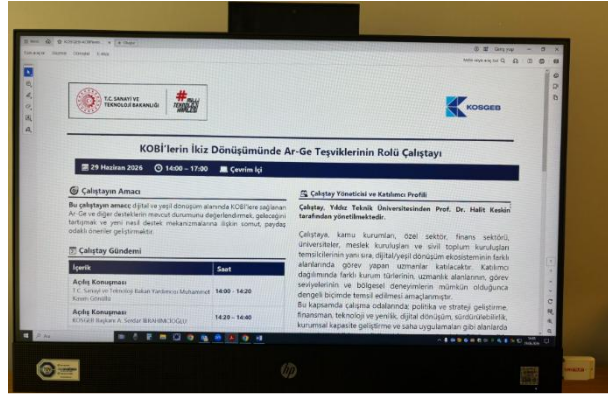
Istanbul Aydın University Faculty of Engineering Dean Prof. Dr. Hasan SAYGIN, Head of Software Engineering Department Prof. Dr. Ferdi SÖNMEZ, and Head of Computer Engineering Department Dr. Selçuk ŞENER visited IGA Istanbul Airport at the invitation of IGA Istanbul Airport CEO Selahattin BİLGİN and IGA Istanbul Airport CIO and IST Systems CEO Dr. Reha ÇETİN. During the meeting, information was obtained about IGA's digital transformation vision and innovation efforts; and opportunities for collaboration in the fields of university-industry cooperation, joint R&D projects, artificial intelligence, data science, and intelligent systems were evaluated. The visit aims to lay the groundwork for concrete projects that will strengthen the transfer of knowledge and technology between academia and industry.





WORKSHOP

The Dean of the Faculty of Engineering, Prof. Dr. Hasan SAYGIN, participated in the "Workshop on the Role of R&D Incentives in the Twin Transformation of SMEs," held online on June 29, 2026. Organized in coordination with the Ministry of Industry and Technology of the Republic of Turkey and KOSGEB (Small and Medium Enterprises Development Organization), the workshop evaluated the role of R&D incentives in the digital and green transformation processes of SMEs, existing support mechanisms, and new generation incentive models. Representatives from public institutions, universities, the private sector, and civil society organizations attended the event.



PROJECT ACCEPTANCE

The TÜBİTAK 2515-COST project entitled "From Waste to Resource: Development of an AI-Supported Industrial Symbiosis Platform for Sustainable Consumption Culture and Green Transformation in SMEs—Design and Implementation of an AHP-Based Decision Support System (WISE-TR)," for which Assoc. Prof. Dr. Hasan Volkan ORAL, a faculty member of the Department of Civil Engineering, serves as project advisor, has been accepted.





UNIVERSITY PREFERENCE AND PROMOTION DAYS

Istanbul Aydın University Faculty of Engineering will be meeting with prospective students during its orientation and information days, which will take place between July 20th and August 14th. During this introductory process, information will be provided about the faculty's educational opportunities, academic programs, and career prospects. The modern laboratories, which allow students to put their theoretical knowledge into practice, will also be showcased. With its well-equipped laboratories and application-oriented education approach, the Faculty of Engineering continues to train the engineers of the future with a strong academic foundation.



LIVE BROADCAST

Assist. Prof. Dr. Arif KARABUĞA, a faculty member of the Department of Mechanical Engineering, Faculty of Engineering, participated in the live broadcast titled “Protecting the Environment and the Economy through Renewable Energy,” aired on TRT Radio 1. The program addressed the contributions of renewable energy resources to environmental sustainability and economic development. Evaluations were also provided on energy efficiency, environmental awareness, and sustainable energy policies.





SCIENTIFIC ACTIVITY AND TEACHING

Associate Professor Dr. Hasan Volkan ORAL from the Department of Civil Engineering served as a project reviewer for two days within the scope of the Water 4All projects.

Associate Professor Dr. Hasan Volkan ORAL, a faculty member of the Department of Civil Engineering, taught a course titled "Circular Approaches in Waste Management: The benefits of nature-based solutions to combat against the impacts of climate change" within the scope of the WWSS26 Summer School.



CAREER INTRODUCTION DAY

Atakan ÖZTUNCER, a research assistant in the Department of Mechanical Engineering, participated in the Career Guidance Day organized by Çatalca Municipality and provided students with information about the mechanical engineering profession.





ACTIVITIES

- On behalf of our University, participation was provided in the Zero Waste Forum, organized by the Zero Waste Foundation at Istanbul Atatürk Airport on 5–7 June 2026. Prof. Dr. Zafer ASLAN, a faculty member of the Department of Computer Engineering, attended the event together with Prof. Dr. Meltem N. VELİOĞLU, Assoc. Prof. Dr. Sinem B. GÜLAŞ, and Dr. Utku B. ŞİMŞEK.
- The 3rd International Conference on Sustainable Water Management in a Changing Climate — ICCW 2026 will be held on 20–25 November 2026 at Riphah International University in Islamabad, Pakistan. Preparations are ongoing for the conference, which will be jointly organized by Istanbul Aydın University and Riphah International University.