



BAU

BAHÇEŞEHİR
UNIVERSITY

SDG 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE



2023–2024

BAU AT A GLANCE

Since its foundation in 1998, the vision of BAU has been to be a global university known for its contribution to scientific, technological, and cultural knowledge through innovative education models and research approaches that reflect international standards as well as service to society. Currently, BAU Global Network comprises of 6 universities (Istanbul, Washington D.C., Berlin, Cyprus, Batumi, Plymouth), 5 liaison offices (BAU Global Azerbaijan, Jordan, Uzbekistan, Mongolia, Pakistan) and 5 language schools.

As one of the leading universities in Türkiye, BAU aims primarily to improve the living standards of the local and global society by integrating the sustainable development goals into its corporate processes and culture, educational programs, academic research practices and stakeholder collaborations. BAU with its staff members, students and alumni is a big academic community who are raised as good global citizens committed to each other and the world around them and always act with the utmost sense of ethics and social responsibility.

BAU WITH NUMBERS

- 7 campuses in Istanbul
- 10 faculties, 1 conservatory, 2 vocational schools
- 54 BA programs, 187 MA programs, 30 PhD. programs
- 28 research and application centers
- 149 labs, workshops/studios, incubation centers
- 229 Erasmus partner universities, 96 world exchange partners
- 854 full-time faculty members, 449 administrative staff members
- 19.287 undergraduate students, 3.500 graduate students, 478 doctora degree students
- 81 student clubs
- 238 externally funded projects between 2023-2024
- 410 industry partnerships & projects between 2023-2024

BAU IN THE TIMES HIGHER EDUCATION

BAU participates in the Times Higher Education (THE) Impact Rankings since 2019. According to the current rankings, BAU belongs to the 801-1000 band in the World University Rankings, 59th in the Impact Rankings and the 173th in the Young University Rankings 2024. Also, BAU is ranked among the top 5 universities in Türkiye.

The university continuously increases its standing in categories related to the UN Sustainable Development Goals. As of 2025, BAU holds the following standings in the THE Impact Rankings;

- 7 th in Quality Education
- 50 th in Peace, Justice and Strong Institutions
- 2nd in Gender Equality
- Ranks between 101-200 in Reducing Inequalities
- Ranks between 201-300 in Industry, Innovation and Infrastructure
- Ranks between 401-600 in Sustainable Cities and Communities

The University takes the above-mentioned rankings as evaluation criteria for progress regarding its adherence and contribution to the UN Sustainable Development Goals and will continue to report its advancement in the rankings on a yearly basis.

SDG 9 AT BAHÇEŞEHİR UNIVERSITY: AN INTEGRATED ECOSYSTEM FOR INDUSTRY, INNOVATION, AND INFRASTRUCTURE

A. INSTITUTIONAL COMMITMENT AND GOVERNANCE FOR SDG 9

Bahçeşehir University demonstrates a strong and structured commitment to Sustainable Development Goal 9 (Industry, Innovation and Infrastructure) through its institutional strategies, policies, and governance mechanisms. This commitment is anchored in the university's official policy framework and reinforced by a culture of research integrity, transparency, and sustainable growth.

1. Strategic and Policy Framework

The University's Research and Development Policy establishes the foundation for advancing excellence in science, innovation, and technology transfer. It outlines clear objectives for fostering interdisciplinary collaboration, strengthening research infrastructures, and translating academic knowledge into societal and industrial impact—core pillars of SDG 9.

Aligned with this policy, the Bahçeşehir University Strategic Plan 2024–2030 defines the institutional roadmap for research and innovation under two key objectives:

- A2 – Excellence in Research and Development, which ensures that BAU's research organization and operations function effectively to generate global impact, and
- A6 – Financial Sustainability, which supports continuous investment in infrastructure and innovation capacity.

These strategic priorities also advance SDG 4 (Quality Education) by promoting research-based learning, and SDG 17 (Partnerships for the Goals) through multi-stakeholder collaboration.

2. Research Integrity and Operational Governance

Beyond its research policy, Bahçeşehir University maintains a comprehensive set of guidelines ensuring that all research activities are conducted ethically, transparently, and responsibly. These include the Ethics Policy, Research Misconduct Policy, Conflict of Interest Policy, Anti-Fraud, Bribery and Corruption Policy, Financial Procedures Policy, Incoming Funds Management Policy, Travel and Expense Policy, Risk Management Policy, and Health and Safety Policy.

Together, these frameworks safeguard accountability and good governance across all innovation and industry-engagement processes, reinforcing BAU's adherence to the principles of integrity, openness, and innovation that underpin SDG 9.

3. Institutional Structures Supporting Innovation and Industry Engagement

Within the research governance structure, the Directorate of Research Policies, Technology Transfer and Entrepreneurship (BAUTTO)—serving institutionally as the Dean of Research—acts as the principal driver of innovation management at Bahçeşehir University. Guided by its motto of delivering services at private-sector speed, BAUTTO transforms research outputs into societal and economic value through:

- managing intellectual-property rights and commercialization processes,
- facilitating university–industry collaboration and contract-based R&D,
- supporting access to national and international funding programs, and
- promoting entrepreneurship and innovation across academic departments.

BAUTTO also oversees implementation of the Bahçeşehir University Intellectual and Industrial Property Rights and Commercialization Directive and the Public and Private Sector Consultancy Services Directive, ensuring that knowledge transfer activities are legally, ethically, and strategically aligned with both national priorities and the UN SDGs.

Through these coordinated mechanisms, BAUTTO functions as the institutional bridge linking academic research, industry partners, and public institutions thereby contributing directly to the development of resilient infrastructure, sustainable industrialization, and innovation-driven economic growth.

4. Internal Funding and Sustainability Mechanism

Complementing its governance framework, Bahçeşehir University maintains an internal research-funding policy through the Scientific Research Projects Directive (BAUBAP). BAUBAP provides institutional resources to strengthen innovation capacity, prototype development, patent applications, and commercialization activities. As such, it represents the university's dedicated mechanism for sustaining SDG 9-aligned innovation from idea to market readiness, while simultaneously supporting SDG 8 (Decent Work and Economic Growth) by fostering new employment and entrepreneurship opportunities.

B. BAU INNOVATION ECOSYSTEM AND INSTITUTIONAL MECHANISMS

Bahçeşehir University sustains an integrated innovation ecosystem that bridges academia, industry, and society, translating research outcomes into tangible technological and economic value. This ecosystem comprises a series of interconnected units and programs that collectively strengthen the University's contribution to SDG 9 (Industry, Innovation and Infrastructure).

1. Directorate of Research Policies, Technology Transfer and Entrepreneurship (BAUTTO)

Operating under the Dean of Research, the Directorate of Research Policies, Technology Transfer and Entrepreneurship (BAUTTO) serves as the central coordination body for the University's research and innovation ecosystem. BAUTTO enables the conversion of academic outputs into commercial, social, and environmental impact by:

- managing intellectual-property portfolios, patenting, and licensing,
- facilitating industry partnerships, co-funded R&D, and consultancy agreements,
- promoting participation in TÜBİTAK, Horizon Europe, and other international funding programs, and
- mentoring entrepreneurial faculty and students toward venture creation.

With its agile structure and private-sector efficiency ethos, BAUTTO plays a pivotal role in ensuring that innovation processes—from idea generation to commercialization—are sustainable, ethical, and aligned with global priorities.

This structure contributes not only to SDG 9 but also to SDG 17 (Partnerships for the Goals) through its extensive industry and public-sector collaborations.

2. BAU Hub – Incubation and Entrepreneurship Center

The BAU Hub Incubation and Entrepreneurship Center acts as a catalyst for early-stage innovation and start-up growth. It provides an end-to-end incubation model that supports idea validation, prototype development, and business scaling through:

- mentorship programs led by academics and industry experts,
- acceleration modules and networking events with investors,
- Demo Days, hackathons, and innovation challenge series, and
- continuous access to BAU's research and technical resources.

BAU Hub hosts more than 70 active start-ups and has facilitated the growth of ventures in fields such as AI, health technologies, fintech, and creative industries. By promoting entrepreneurial mindsets and sustainable innovation, BAU Hub directly supports SDG 9 and SDG 8 (Decent Work and Economic Growth) through job creation, start-up investment, and technological advancement.

3. BUG Lab TEKMER – Technology Development Centre for the Gaming and Creative Industries

Established with the support of the Small and Medium Enterprises Development Organization (KOSGEB) – a national public agency under the Ministry of Industry and Technology of the Republic of Türkiye – BUG Lab TEKMER functions as a certified Technology Development Centre (TEKMER) dedicated to advancing the creative and digital-gaming industries.

As part of Bahçeşehir University's innovation ecosystem, BUG Lab TEKMER integrates the full education–production–commercialization cycle for digital creativity. It unites students, researchers, entrepreneurs, and established studios within a single structure that supports the entire innovation journey—from idea generation and prototyping to company formation and international growth.

- The centre builds upon BUG Lab's more than ten years of experience in game design and development, including Türkiye's first Bachelor's and Master's programmes in Digital Game Design.
- As a TEKMER-certified facility, BUG Lab provides a structured, two-tier incubation model tailored to different entrepreneurial maturity levels: a Pre-Incubation (Level 1) phase for idea and prototype development, and an Incubation (Level 2) phase for incorporated start-ups and growth-stage studios.
- The centre offers end-to-end support including mentorship, business development, investor access, legal and IP consultancy, workspace solutions, and professional networking opportunities.
- By connecting education with production, BUG Lab TEKMER enables a continuous talent pipeline for Türkiye's fast-growing game industry, while hosting both emerging start-ups and established studios that serve the broader gaming ecosystem.

Through this education-to-industry model, BUG Lab TEKMER enhances research–industry linkages, fosters technology commercialization, and strengthens the national infrastructure for creative digital production. Its contributions extend across multiple Sustainable Development Goals:

- SDG 9 (Industry, Innovation and Infrastructure) by developing resilient creative infrastructures and promoting inclusive industrialization in the digital-games sector.
- SDG 8 (Decent Work and Economic Growth) by generating employment and entrepreneurship opportunities in the creative economy.
- SDG 4 (Quality Education) by embedding practical, innovation-driven learning within academic curricula.
- SDG 12 (Responsible Consumption and Production) by encouraging sustainable, resource-efficient production processes in digital media and interactive technologies.

In summary, BUG Lab TEKMER represents a unique national model for university-led, government-supported innovation. It demonstrates how education, creativity, and technology can converge to build a sustainable and globally competitive ecosystem in line with SDG 9.

4. BAU Leuven International Innovation & Technology Liaison Office (Belgium)

The BAU Leuven Office, established on 23 May 2022, serves as Bahçeşehir University's strategic liaison point for research, innovation, and entrepreneurship in Europe. Located in Leuven, just 20 km from Brussels, the administrative heart of the European Union, the office enables direct participation in the EU's research, innovation, and technology networks, particularly Horizon Europe, EIT, and Eurostars frameworks.

Functioning as a non-promotional academic and strategic cooperation office, it focuses exclusively on international R&D collaborations, technology transfer partnerships, and the internationalization of innovation-driven Turkish enterprises. It does not operate as a recruitment or representation office but as an institutional bridge between Türkiye and Europe's high-tech ecosystem.

Strategic Objectives and Achievements

Through its proximity to KU Leuven—one of Europe's leading universities in research funding—the office has facilitated access to high-impact research collaborations, consortium memberships, and European R&D calls. Between 2022 and 2024, BAU researchers participated in multiple Horizon Europe proposals (such as CoolMind, Transilient, CIRCLE-ART, GRACE, and ENRICH-TT), with several reaching threshold or second-stage evaluation. These initiatives strengthen BAU's institutional capacity for international research funding and contribute to SDG 17 (Partnerships for the Goals).

The Leuven Office has also established cooperation channels with international research infrastructures such as IMEC and NERF, supporting the donation of advanced laboratory equipment to BAU and promoting researcher exchange under the framework of Türkiye's Higher Education Law (Article 2547, Additional 46).

Internationalization of Turkish Technology Firms

In alignment with BAU's internationalization policy and SDG 9's emphasis on sustainable industrial growth, the Leuven Office supports Turkish innovation-oriented enterprises in expanding into European markets.

Through the BAU Hub Belgium program, the office has:

- Assisted 10 Turkish ICT and engineering companies (including Hit Bilişim, Electra IC, and Aura Bilişim) in establishing their entities within the Flanders region of Belgium,
- Provided access to regional funding mechanisms, business acceleration services, and EU-based incubators such as Start it @KBC Global,
- Guided 9 early-stage entrepreneurs through a multi-country acceleration model across Belgium (Leuven), the Netherlands (Maastricht), and Germany (Aachen), where they engaged in company formation, investor meetings, and export-oriented strategic planning.

As a result, Turkish start-ups founded by BAU academics—such as Mol-E, Omnisense, and Auto Train Brain—have entered the European market, contributing to the internationalization of Türkiye's innovation output and strengthening the global visibility of its technology ecosystem.

Transition Toward UTPO

By 2025, the Leuven Office will evolve into the International Technology and Marketing Office (UTPO), supported by the Ministry of Trade of the Republic of Türkiye.

This transition formalizes its role under the national UTPO framework, enabling long-term government-backed operations to enhance export capacity, market integration, and cross-border technology commercialization.

The transformation reflects BAU's strategic vision to institutionalize international entrepreneurship and research collaborations under a sustainable, policy-aligned model.

The Leuven Office and its forthcoming UTPO structure exemplify Bahçeşehir University's dedication to advancing global partnerships and innovation ecosystems in line with the UN Sustainable Development Goals:

- SDG 9 (Industry, Innovation and Infrastructure): by fostering technology transfer and industrial partnerships across borders, strengthening resilient digital and R&D infrastructure.
- SDG 8 (Decent Work and Economic Growth): by creating employment and export opportunities for Turkish technology companies in European markets.
- SDG 17 (Partnerships for the Goals): by deepening international cooperation between academia, government, and industry.

Through the Leuven–Brussels axis, Bahçeşehir University demonstrates how national innovation ecosystems can achieve sustainable globalization, transforming research excellence into international economic and social impact.

5. BAUBAP – Internal Research and Innovation Funding Program

The Bahçeşehir University Scientific Research Projects Program (BAUBAP) serves as the university's core internal mechanism for supporting research, development, and innovation.

Rooted in the University's commitment to SDG 9 (Industry, Innovation and Infrastructure), BAUBAP ensures a continuous institutional investment in scientific excellence, infrastructure capacity, and innovation-driven growth.

Managed under the Directorate of Research Policies, Technology Transfer and Entrepreneurship (BAUTTO), BAUBAP provides structured and competitive internal grants designed to advance both fundamental and applied research. It operates through specialized subprograms that respond to diverse institutional needs and stages of innovation:

- BAUBAP-NAP (Academic Research Support): Encourages high-quality, peer-reviewed scientific production and fosters interdisciplinary collaboration across faculties.
- BAUBAP-R&D Lab. (Applied Research and Prototyping): Funds laboratory-scale experimentation, prototype development, and proof-of-concept studies aimed at technology transfer and commercialization.
- BAUBAP-Entrepreneurship and Commercialization Support: Provides direct financial and mentoring support for researchers and students seeking to transform research results into start-ups, patents, and market-ready innovations.
- BAUBAP-SOS (Social Responsibility and Community Impact): Supports research and innovation projects with measurable social benefit, particularly in health, environment, and education.

Each program is evaluated through transparent criteria emphasizing scientific merit, innovation potential, and sustainability impact. Funded projects are systematically aligned with Türkiye's national R&D priorities and the University's 2024-2030 Strategic Plan objectives A2: Excellence in Research and Development and A6: Financial Sustainability.

BAUBAP's impact extends beyond internal capacity building—it catalyzes university-industry collaboration, strengthens research infrastructure, and enables the creation of new intellectual property and commercialization pathways. The program has directly supported projects that led to national and international patent applications, Horizon Europe participation, and technology-based start-up formation under the BAU Hub ecosystem.

Through this comprehensive model, BAUBAP contributes to multiple Sustainable Development Goals:

- SDG 9 (Industry, Innovation and Infrastructure): by investing in R&D capacity and innovation infrastructure.
- SDG 4 (Quality Education): by funding student-led and faculty-supervised research that integrates learning with discovery.
- SDG 8 (Decent Work and Economic Growth): by supporting technology-based entrepreneurship and employment generation.
- SDG 17 (Partnerships for the Goals): by leveraging internal resources to complement international and industry-funded projects.

In essence, BAUBAP exemplifies Bahçeşehir University's long-term strategy to build a resilient, self-sustaining innovation ecosystem—one that transforms institutional knowledge into economic, societal, and global impact consistent with the vision of SDG 9.

C. ACTIONS AND ACHIEVEMENTS SUPPORTING SDG 9

Bahçeşehir University actively advances SDG 9 (Industry, Innovation and Infrastructure) through a wide range of initiatives that promote innovation-driven learning, technology transfer, and entrepreneurship.

The University not only generates research but also transforms it into visible, community-facing actions that strengthen industrial capacity, digital infrastructure, and innovation ecosystems both locally and globally.

These actions demonstrate BAU's operational commitment to connecting education, research, and industry, in line with the principles of sustainable development and inclusive growth.

Activities are implemented through interdisciplinary collaboration across all contributing units of Bahçeşehir University, encompassing faculties, research centers, and entrepreneurship platforms such as BAUTTO, BAU Hub, BUG Lab TEKMER, and the BAU Leuven Office. Through the concerted efforts of these academic and administrative bodies, the University adopts a whole-of-institution approach to advancing national innovation priorities and the UN Sustainable Development Goals.

The following subsections group the University's key initiatives under two thematic clusters—reflecting their complementary roles in supporting SDG 9 outcomes.

1. INNOVATION & TECHNOLOGY EVENTS

This subsection covers flagship conferences, summits, and academic-industry collaborations that position Bahçeşehir University as a leading hub for innovation dialogue and technology dissemination. These events are collectively:

- bring together public institutions, technology firms, and academia to discuss innovation policy and industrial transformation,
- disseminate new knowledge on AI, automation, and creative technologies,
- foster interdisciplinary exchange between engineering, business, and design sectors, and
- enhance Türkiye's global visibility in science-based innovation.

Each event contributes to the SDG 9 targets of building resilient infrastructure and fostering inclusive and sustainable industrialization, while also advancing:

- SDG 4 (Quality Education) through learning opportunities and capacity building,
- SDG 8 (Decent Work and Economic Growth) by promoting technology-based entrepreneurship and employment, and
- SDG 17 (Partnerships for the Goals) through multi-stakeholder cooperation.

Bahçeşehir University Hosts the Future AI Summit 2024 (16-17 April 2024)



Bahçeşehir University (BAU) hosted the Future AI Summit 2024 on 16–17 April 2024 at its Future Campus in Istanbul, bringing together leaders from academia, industry, and public institutions to explore the transformative power of artificial intelligence across all sectors.

[illegible][illegible]

Bahçeşehir University Hosts the Future AI Summit 2024 (16–17 April 2024)

The event featured over 65 distinguished speakers, 70 entrepreneurs, and 50 international brands, welcoming more than 3,000 participants to more than 45 sessions and panels held under the main theme “Innovation and Disruption: The Future AI Paradigm.”

Throughout the two-day program, panels and workshops addressed a wide range of topics including AI and ethics, AI in education, agriculture and food systems, industrial automation, finance, creative industries, and law and governance. Participants examined how artificial intelligence is shaping innovation, productivity, and sustainable development in both public and private sectors.

Keynote speakers included Prof. Dr. Hasan Mandal, President of TÜBİTAK; and Enver Yücel, President of BAU Global. Their discussions emphasized the crucial role of universities in guiding policy, research, and education in the age of AI transformation.

In addition to global leaders, representatives from Microsoft, Intel, Huawei, IBM, and Adobe participated through experience zones, live demonstrations, and workshops, showcasing cutting-edge AI solutions in sectors ranging from health to logistics.

Panels such as “AI in Agriculture and Sustainable Food Systems,” “AI Governance and Global Regulations,” and “Generative AI in Creativity and Design” provided an inclusive, interdisciplinary perspective on the technological, ethical, and societal dimensions of AI.

The summit reaffirmed Bahçeşehir University’s role as a regional hub for innovation and technological collaboration, advancing the objectives of SDG 9 (Industry, Innovation, and Infrastructure) by promoting resilient digital infrastructures, research-driven industrial practices, and human-centered innovation ecosystems.

With its global reach and visionary approach, Future AI Summit 2024 not only strengthened academic and industrial cooperation but also demonstrated BAU’s commitment to ensuring that the integration of artificial intelligence serves the common good—building a sustainable, inclusive, and innovative future for all.

Event movie: https://www.youtube.com/watch?v=--9qXlgldDM&list=PLNOG7iad1e7Metuayk_-EOZefRuWAMGYM&index=7

Day 1: https://www.youtube.com/watch?v=Fje4pNvMW_E&list=PLNOG7iad1e7Metuayk_-EOZefRuWAMGY

Day 2: https://www.youtube.com/watch?v=swQKNALo2E4&list=PLNOG7iad1e7Metuayk_-EOZefRuWAMGYM&index=7

Bahçeşehir University and Huawei Sign MoU to Advance Artificial Intelligence and Next-Generation Technologies (25 September 2024)



Bahçeşehir University (BAU) and Huawei signed a Memorandum of Understanding (MoU) during the Huawei Connect 2024 event held in Shanghai, China, which gathered global leaders from academia, industry, and technology. The agreement marks the beginning of a strategic partnership focused on research and development in artificial intelligence (AI) and other emerging technologies.

Representing BAU, Serdar Şenel, Vice President of BAU Global, and Prof. Dr. A. Arif Ergin, Dean of the Faculty of Engineering and Natural Sciences, held high-level meetings during the event to discuss the integration of AI into education, digital transformation, and R&D collaboration. The discussions emphasized innovative educational models, the enhancement of technological infrastructure, and preparing students for the professions of the future.

The partnership aims to explore AI-driven personalized learning, data analytics, and automation systems to advance innovation in both the education and technology sectors. By combining Huawei's global experience in technological development with BAU's academic expertise, this collaboration seeks to create a foundation for sustainable technological advancement and AI-focused innovation on a global scale.

Through this collaboration, Bahçeşehir University continues to strengthen its role as a leading institution in technology-oriented research and education, contributing directly to inclusive industrial innovation and resilient digital infrastructure, in line with the objectives of Sustainable Development Goal 9.

<https://bauglobal.com/new/bau-10/>

<https://bau.edu.tr/news/17373-bau-%E2%80%93-huawei-strategic-solution-partnership-agreement-is-signed>

Bahçeşehir University and STM Collaborate to Develop Türkiye's First Fully Domestic CTD Probe System



In alignment with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU) and STM Defense Technologies Engineering and Trade Inc. have launched a groundbreaking partnership to produce Türkiye's first fully domestic "CTD Probe" system, designed to collect oceanographic data on the physical properties of seawater for both scientific and defense applications.

Supported by the Ministry of Industry and Technology under the Technology-Oriented Industry Move (HAMLE) Program, the project will eliminate foreign dependency in this critical field. Developed through collaboration between STM and BAU Innovation and Consulting Inc. (BAUMIND), the CTD Probe features 100% locally produced sensors for measuring conductivity, temperature, and depth, providing vital data for sonar systems and underwater research.

This initiative represents a major advancement in university-industry cooperation, strengthening Türkiye's capabilities in marine technologies, R&D, and strategic innovation. The system will not only enhance the operational performance of the Turkish Naval Forces but also contribute to civil oceanography and environmental studies, supporting the national vision for sustainable technological independence and innovation-led growth.

Bahçeşehir University and Elsevier Collaborate to Advance Research and Innovation in Türkiye (11 June 2024)



In line with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU), in collaboration with Elsevier, hosted the “Tomorrow Today in Research Türkiye” event on 11 June 2024, at BAU’s South Campus. The event gathered academics and university leaders from across Türkiye to explore strategies for enhancing the country’s research performance through data-driven technologies and global collaboration.

The discussions focused on Elsevier’s research management and analytics solutions—Pure and SciVal—highlighting their role in supporting academic institutions in research strategy development, performance monitoring, and impact assessment. Participants also examined the integration of AI-powered tools in research processes, showcasing how digital innovation is transforming academic productivity and global visibility.

By facilitating knowledge exchange and promoting technology-supported research ecosystems, the event strengthened cooperation between academia and industry, contributing to the advancement of sustainable innovation infrastructure and reinforcing Türkiye’s position in the global research landscape.

<https://tto.bau.edu.tr/bahcesehir-universitesi-elsevier-is-birligi-ile-tomorrow-today-in-research-turkiye-etkinligi-bau-guney-yerleskesinde-gerceklesti/>

Empowering Healthcare with Automated Analysis: A Global Networking Event Hosted by Bahçeşehir University (3-5 June 2024)

Networking Event:
Empowering Healthcare with Automated Analysis

The Event Will Cover Topics Addressing Surge in Medical Data Through Collaboration And Innovation:

- Challenges in Medical and Biomedical Data Analysis
- DNA Damage and Repair Analysis
- Genomic Instability
- Cellular Injury Assessment
- Plasma Membrane Recognition for Cancer Cell Segmentation
- Integration of Laboratory Data and Computational Methods
- Advanced Image Processing Techniques
- Mathematical Modeling of Neurochemical Variability
- Machine Learning Approaches in Biomedical Data Analysis
- Networking Meetings and Collaboration Opportunities
- Empowering Accurate Detection and Annotation
- Bridging the Gap between Domain-Specific Knowledge and Computational Methodologies
- In-Vivo Intravital Imaging
- Microscopy and Multi-Modal Image Analysis

Invited Speakers:

- C. Carlos Reyes-Aldasoro, City University of London
- Ata Akin, Acibadem University
- Lavdie Rada, Bahçeşehir University
- Cefi Karabağ, London Metropolitan University
- Eida Pacheco-Pantoja, Universidad Anahuac Mayab
- Mauricio Alberto Ortega-Ruiz, Universidad del Valle de
- Carlos Brito Loeza, University of Yucatan
- Deniz Eroglu, Kadirhas University
- Raif Eskicioğlu, Bahçeşehir University
- Ananda Ananda, Politeknik Caltech Riau

Dates: 3-4-5 June 2024
Location: BAU South Campus

Deadline for Registration (free of charge): 28 May 2024

REGISTER (Registration to the event is free of charge and only the valid UIC will be chosen by the coordinators of this workshop to be presented)

Logos of partner institutions: The Royal Society, Department for Business, Energy and Industrial Strategy (UK), London Metropolitan University, and Bahçeşehir University (BAU).

Bahçeşehir University (BAU) hosted the international networking event “Empowering Healthcare with Automated Analysis” between 3–5 June 2024 at its South Campus in Istanbul. Supported by The Royal Society, the Department for Business, Energy and Industrial Strategy (UK), and London Metropolitan University, the event brought together leading scientists, engineers, and healthcare professionals to explore how automation, data science, and machine learning are transforming the future of medical innovation.

The three-day program focused on emerging technologies in biomedical data analysis, neurochemical modeling, cancer cell segmentation, and AI-driven image processing, highlighting collaborative approaches to accelerate breakthroughs in healthcare diagnostics and research.

Prominent speakers included experts from Bahçeşehir University, City University of London, London Metropolitan University, Acibadem University, University of Yucatan, and Universidad del Valle, among others. Panel discussions addressed the importance of integrating engineering, data science, and medical research to enhance the accuracy and efficiency of clinical analysis.

By fostering international collaboration and supporting research at the intersection of technology and health sciences, this event exemplified Bahçeşehir University’s leadership in promoting innovation ecosystems that advance scientific progress and sustainable infrastructure. The initiative directly contributes to United Nations Sustainable Development Goal 9 (Industry, Innovation, and Infrastructure) by strengthening global research networks and encouraging the responsible use of technology for societal well-being.

Bahçeşehir University Hosts the 6th Aviation, Space, and Psychology Congress on Safety Management (7-8 December 2024)



In alignment with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU) hosted the 6th Aviation, Space, and Psychology Congress on 7-8 December 2024 at its South Campus, with the central theme of "Safety Management."

The congress brought together researchers, industry experts, and practitioners from fields such as aerospace engineering, psychology, and aviation management to discuss innovations in aviation safety systems, human factors in aerospace operations, and technological advancements supporting flight safety and infrastructure resilience.

Organized in collaboration with Pegasus Airlines, MNG Airlines, and professional platforms such as Havacılık ve Uzay Tıbbı Platformu, the event highlighted how interdisciplinary cooperation between engineering, psychology, and safety sciences contributes to building safer, smarter, and more sustainable aviation systems.

Through this initiative, Bahçeşehir University reaffirmed its role in advancing research, innovation, and industrial collaboration in high-technology sectors, strengthening its commitment to fostering innovation-driven infrastructure and sustainable industry development in line with the Sustainable Development Goals.

Bahçeşehir University Hosts Seminar on RWA Sector and 2025 Crypto Market Outlook (17 December 2024)



In alignment with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU) hosted a seminar titled “RWA Sector and 2025 Crypto Market Outlook” on 17 December 2024, organized by BAU Investment Club, BAU Financial Research and Application Center (BFRC), and the Dean of Students Office (DSO), in collaboration with Skipex.

The event featured Ata Potok, Chief Marketing Officer of Skipex, who delivered an in-depth session on the Real World Assets (RWA) sector, the future of digital assets, and the shifting dynamics of the global cryptocurrency markets. Participants explored how blockchain and fintech innovations are reshaping financial systems, enhancing transparency, and fostering new infrastructures for sustainable digital economies.

This event also supported the university’s vision of fostering innovation-driven entrepreneurship and preparing students for emerging industries in the digital economy.

Through this seminar, Bahçeşehir University emphasized its commitment to advancing technological literacy, financial innovation, and sustainable industry development, providing students and young professionals with insights into the evolving intersection of technology, finance, and infrastructure modernization.

BrandFest: The Future of Brand Stories Summit at Bahçeşehir University (7 May 2024)



Hosted at Bahçeşehir University's Beşiktaş South Campus, BrandFest: The Future of Brand Stories Summit brought together industry leaders, academics, and creative professionals to discuss the future of branding at the intersection of artificial intelligence, sustainability, creativity, and digital transformation.

The summit featured panel discussions, keynote sessions, and workshops exploring topics such as emerging marketing trends, sustainable branding strategies, circular economy practices, and corporate social responsibility. Speakers emphasized how innovative and technology-driven branding can contribute to sustainable economic development, responsible consumption and production, and inclusive business ecosystems.

Through its focus on education, professional development, and knowledge sharing, BrandFest supports SDG 4 (Quality Education) by empowering participants with lifelong learning opportunities; SDG 8 (Decent Work and Economic Growth) by promoting innovation and sustainable productivity in the creative economy; SDG 9 (Industry, Innovation and Infrastructure) by highlighting the role of digital transformation in modern industries; and SDG 12 (Responsible Consumption and Production) by encouraging sustainable and ethical business practices in marketing and brand management.

This annual event reflects Bahçeşehir University's dedication to fostering collaboration between academia and industry, cultivating human capital, and driving innovation that aligns with global sustainability goals.

BAU BRIDGE: Unlocking Opportunities – AI's Role in Business Success (June 2024)



Organized by Bahçeşehir University's Department of Business Administration, the BAU Bridge: Unlocking Opportunities – AI's Role in Business Success program explored how artificial intelligence can transform business operations and foster sustainable innovation. Designed as an applied certificate program, it equipped participants with the analytical tools and insights needed to use AI for data-driven decision-making, process optimization, and strategic innovation across diverse industries.

Through expert-led sessions and a real-world case study from Türkiye's aluminum sector, participants examined how AI supports digital transformation, enhances productivity, and drives competitiveness. The program contributed to SDG 9 (Industry, Innovation and Infrastructure) by promoting the integration of advanced technologies in business, encouraging innovation ecosystems, and reinforcing the role of digital infrastructure in achieving sustainable industrial growth.

Bahçeşehir University Explores M&A Transactions, Start-up Investments, and Competition Law

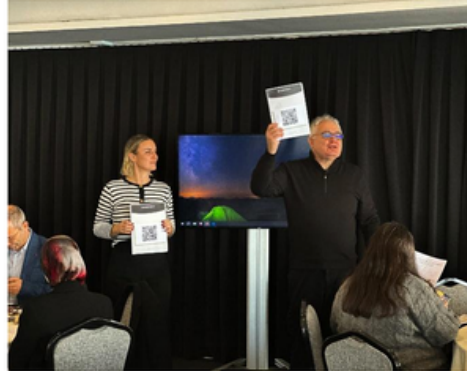


In support of SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU) Faculty of Law, through the Research Center for Law and Economics (BAU RHM), hosted an online seminar titled “M&A Transactions, Start-up Investments, and Competition Law” on 3 December 2024.

The event featured Attorney Baran Arıkan and Attorney I. Ünal Doğan, who discussed the evolving legal landscape surrounding mergers and acquisitions, venture capital investments, and competition regulations in the context of Turkey’s innovation-driven economy. Participants examined how legal frameworks and policy mechanisms play a vital role in fostering fair competition, entrepreneurial growth, and sustainable industrial ecosystems.

Through this seminar, Bahçeşehir University emphasized the significance of establishing robust legal and institutional infrastructures that support innovation, entrepreneurship, and industrial development – key enablers of sustainable and inclusive economic progress in alignment with the UN Sustainable Development Goals.

Bahçeşehir University Strengthens Research and Innovation Capacity through Strategic Collaboration: Research Roundtable Breakfast



In alignment with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU) continues to enhance its institutional research and innovation ecosystem through strategic initiatives led by the BAUTTTO.

A roundtable meeting was held with researchers and academic leaders to discuss strategies for improving research performance, increasing participation in TÜBİTAK and Horizon Europe projects, and fostering greater interdisciplinary cooperation. The discussions also focused on identifying priority research areas, strengthening industry partnerships, and developing mechanisms to accelerate knowledge transfer and innovation impact.

Through these coordinated efforts, Bahçeşehir University continues to reinforce its research infrastructure and innovation capacity, supporting sustainable technological development and contributing to the advancement of inclusive, resilient, and knowledge-based growth in accordance with the Sustainable Development Goals.

<https://tto.bau.edu.tr/bautto-olarak-bau-arastirmacilari-ile-bir-araya-geldik/>

Bahçeşehir University Connects Turkish IT Companies with Global Markets through Its International Technology Office



In support of SDG 9 (Industry, Innovation and Infrastructure) and Türkiye's digital transformation goals, Bahçeşehir University (BAU) is expanding its international innovation ecosystem through the establishment of the International Technology Marketing Office (UTPO) in Leuven, Belgium. The initiative aims to connect Turkish information technology and software companies with global markets, fostering international collaboration and technology-driven growth.

A special information session was held on December 19, featuring key speakers including Etem Derman (BAUTTO & BAUHUB Belgium Office Director), Nil Girgin Kalıp (Director of Research Policies, Technology Transfer and Entrepreneurship & Chair of BUG LAB TEKMER A.Ş.), and representatives from the Ministry of Trade, KPMG, and the Brussels Commercial Counsellor's Office. The discussions focused on internationalization strategies, EU market opportunities, and support mechanisms for technology firms.

Through UTP0, Bahçeşehir University continues to serve as a strategic bridge between academia and industry—empowering Turkish technology firms to access international networks, expand their innovation capacity, and contribute to sustainable economic growth on a global scale.

Bahçeşehir University Hosts SaaStanbul Growth: Innovation and Growth Strategies in the SaaS Industry



In alignment with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU) hosted SaaStanbul Growth, a major event bringing together leaders and innovators from the Software as a Service (SaaS) ecosystem.

Held on November 23, 2023, at BAU's Beşiktaş South Campus in collaboration with BAU Hub, the event gathered over 200 participants, featuring 17 speakers and 12 sponsors from across the technology and innovation landscape. Industry experts shared insights on growth marketing, global expansion strategies, customer engagement, and scalable innovation models in SaaS businesses.

The program also highlighted BAU Hub entrepreneurs, who presented their growth journeys and innovative solutions during dedicated sessions. Through these initiatives, Bahçeşehir University continues to foster digital innovation and entrepreneurship, empowering startups to enhance their competitiveness, adopt advanced cloud technologies, and drive sustainable business growth in global markets.

National Policy Forum on Artificial Intelligence and Technology in Hazelnut Farming



The National Policy Forum on Artificial Intelligence and Technology in Hazelnut Farming, held in Giresun in December 2024, was organized under the coordination of the Ministry of Agriculture and Forestry and the Giresun Governorship, with the support of Bahçeşehir University (BAU), Giresun University, the Eastern Black Sea Development Agency (DOKA), and several other public, academic, and private sector stakeholders.

The forum brought together government representatives, universities, research institutions, industry leaders, and farmer organizations to develop a national roadmap for integrating artificial intelligence (AI) and digital technologies into Türkiye's agricultural production systems, particularly in the hazelnut sector, which plays a strategic role in the country's economy. Bahçeşehir University contributed to the forum through its expertise in AI applications, sustainable food systems, and policy research, supporting the formulation of data-driven agricultural strategies, evidence-based policy recommendations, and innovation-oriented frameworks.

By connecting national and local institutions, the initiative promotes the digital transformation of agriculture and strengthens Türkiye's commitment to the UN Sustainable Development Goals (SDGs)—especially SDG 2 (Zero Hunger), SDG 1 (No Poverty), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 13 (Climate Action)—advancing inclusive, climate-smart, and technology-driven agricultural development.

2. CAPACITY-BUILDING AND ENTREPRENEURSHIP ACTIVITIES

This subsection highlights programs and workshops that nurture innovation literacy, digital skills, and entrepreneurship among students, researchers, and young professionals.

Through these activities, BAU empowers the next generation of innovators by:

- integrating practical technology training into educational environments,
- fostering gender equality and inclusion in innovation (linked to SDG 5),
- supporting early-stage start-ups through mentoring and access to incubation, and
- creating social and economic value through entrepreneurship.

Collectively, these actions illustrate how Bahçeşehir University's educational mission and innovation ecosystem converge to deliver measurable progress toward SDG 9 and its interlinked goals.

BAU Innovation Focus Open Training Program (7th Edition)



The 7th edition of the BAU Innovation Focus Program, organized by the BAU Hub Incubation Center in collaboration with the BAU Technology Transfer Office (TTO) was held during the 2024 Fall Semester.

This free and open-access educational program aimed to raise awareness and share knowledge on entrepreneurship, innovation, project development, patent application processes, incentives, and available supports. Through informative presentations and experience-sharing sessions, participants gained valuable insights into the entrepreneurial ecosystem and innovation landscape.

The program took place between November 12 and 19, 2024, and was conducted across two interactive sessions designed to inspire participants to take their first steps into the world of projects, startups, and innovation.

In addition to these thematic sessions, the program also featured entrepreneurship training modules focusing on:

- How to find and validate innovative ideas
- How to design and write effective project proposals
- Fundamentals of entrepreneurship and business modeling
- Accessing funding, incentives, and patent registration processes
- Case studies and experience sharing from successful BAU entrepreneurs and alumni

The BAU Innovation Focus Program provided an inclusive learning environment for students, young professionals, and aspiring entrepreneurs, helping them to develop their entrepreneurial mindset and creative problem-solving skills.

Conducted in an open and completely free format, the program once again reflected Bahçeşehir University's commitment to innovation, entrepreneurship, and lifelong learning.

Bahçeşehir University Hosts Sport-Tech Demo Day to Foster Innovation in Sports Technologies



Aligned with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU), in collaboration with BAU Hub and Alima Sport VC, hosted the Sport-Tech Demo Day—an event dedicated to supporting technological innovation and entrepreneurship in the sports industry. Moderated by Ahmet Argun from Lima Ventures, the panel featured distinguished speakers Can Öz, Ebru Köksal, CFA, and Koray Gültekin Bahar, who shared insights on the evolving relationship between sports and technology.

A total of 19 sport-tech startups showcased their ideas through 3-minute pitch presentations, competing before a professional jury. The top three ventures—Neo Auvra, Gameness, and Aivisiontech—were awarded scholarships, global acceleration program opportunities, and \$25,000 worth of Amazon Cloud services provided by BAU Hub.

Through initiatives like Sport-Tech Demo Day, Bahçeşehir University continues to strengthen innovation ecosystems, empowering entrepreneurs to develop digital solutions that enhance the sports industry's technological and economic infrastructure.

Bahçeşehir University Launches the Second Term of the Startup Investor Academy

**2023 STARTUP
INVESTOR
ACADEMY**
Startup Yatırımcısı
Olmanın Temelleri
Nelerdir?
23 / 11 / 2023

PROGRAM

1. Hafta:
Startup Yatırımcısı Olmanın 5N1K'sı

2. Hafta:
Startup Ekosistemini Anlamak

3. Hafta:
Dört Aşama: Fonlama, Keşif,
Ölçeklenme ve Çıkış

4. Hafta:
Yatırımın Yasal Yönü

5. Hafta:
Startup Ekosisteminde Trendler

6. Hafta:
Networking Etkinliği


PROGRAM KOORDİNATÖRÜ
**AHMET BERKER
ARGUN**
Kurucu Ortak
Alima Sport

Kayıt ve Sorularınız için:
Onur Aslan
0537 929 7373
onur@limaventures.com

In alignment with SDG 9 (Industry, Innovation and Infrastructure) and its mission to strengthen the entrepreneurship and innovation ecosystem, Bahçeşehir University (BAU), through BAU Hub, in collaboration with Lima Ventures, Alima Sport VC, and egirişim, launched the second term of the Startup Investor Academy.

The five-week program, coordinated by Ahmet Argun, Founder and Managing Partner of Lima Ventures, offers participants a comprehensive overview of startup financing, valuation, legal frameworks, due diligence, and emerging investment trends. The academy brings together aspiring investors with prominent figures from the startup ecosystem to provide both theoretical and practical insights into venture capital and angel investing.

The program culminates in a networking event that connects investors and entrepreneurs, fostering new collaborations and innovative funding opportunities. Through this initiative, BAU Hub continues to play a pivotal role in building Türkiye's investment literacy and promoting sustainable growth in the startup ecosystem.

Bahçeşehir University's BAU Hub Explores Strategic Communication for Startups



As part of its ongoing efforts to strengthen Türkiye's innovation and entrepreneurship ecosystem under SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU), through its BAU Hub Incubation Center, organized an online event titled "What Should Be the Purpose of Communication for Startups?"

Held on November 29, the session featured Atıl Ünal, CEO of Lagalugacılar, who shared key insights into the role of communication in startup growth. The discussion covered essential topics such as digital communication strategies, target audience engagement, content creation, performance metrics, and the effective use of social media platforms.

Through such events, BAU Hub continues to support entrepreneurs by equipping them with the strategic communication skills and digital competencies needed to scale their ventures, strengthen brand visibility, and achieve sustainable growth in competitive markets.

Bahçeşehir University Hosts "Introduction to Cloud Projects: Firebase 101" Workshop (19 December 2024)



As part of its commitment to promoting digital literacy and innovation under SDG 9 (Industry, Innovation, and Infrastructure), Bahçeşehir University's Google Developer Groups (GDG On Campus) organized the workshop "Introduction to Cloud Projects: Firebase 101" on 19 December 2024.

Led by Atakan Yiğit Çengeloğlu, founder of Klein Pixel, the session introduced students to cloud-based project development and the fundamentals of Google Firebase, enabling participants to explore real-world applications of cloud infrastructure in software design.

The workshop aimed to strengthen students' understanding of digital ecosystems, encourage hands-on learning in emerging technologies, and inspire innovation in software and data-driven industries. Through initiatives like this, Bahçeşehir University continues to empower young developers and contribute to building sustainable digital infrastructure for the future.

Bahçeşehir University Promotes Technological Skills with “C Programming for Microcontrollers” Training (13 December 2024)



In alignment with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU) organized a hands-on technical training titled “C Programming for Microcontrollers” on 13 December 2024, hosted by the IEEE Robotics and Automation Society, in collaboration with the IEEE BAU Student Branch and the Dean of Students Office (DSO).

The session was led by Samet Akçalar, Senior Embedded Software Engineer and Technical Trainer, who provided participants with in-depth knowledge of embedded systems, hardware programming, and microcontroller-based automation. Students gained valuable practical experience in designing and coding for real-world applications in robotics and industrial technology.

This workshop supported BAU’s ongoing commitment to empowering students with industry-relevant digital competencies, fostering innovation-driven learning, and preparing future engineers to contribute to the advancement of smart infrastructure, automation, and technological development.

Bahçeşehir University Hosts Circle Up 2024 Camp to Empower Youth in Sustainable Entrepreneurship



Supporting the UN Sustainable Development Goal 8 (Decent Work and Economic Growth), Bahçeşehir University (BAU) hosted the Circle Up 2024 Camp from September 2-4 at its North Campus, bringing together high school and university students to enhance their entrepreneurial skills and develop socially impactful business ideas.

Organized with the support of the BAU Hub Incubation Center, the camp offered participants intensive workshops, training sessions, and team-based projects focusing on social entrepreneurship and sustainable economic growth. Throughout the event, students worked with mentors and industry experts, gaining hands-on experience in project development, collaboration, and innovative problem-solving.

This year's theme, centered on "Decent Work and Economic Growth," encouraged young participants to design creative and viable solutions addressing economic sustainability. Over three days, teams refined their ideas using sociocratic decision-making methods and presented their projects before a jury comprising BAU faculty and entrepreneurship professionals.

Through initiatives like Circle Up, Bahçeşehir University continues to foster an entrepreneurial mindset among youth, empowering them to become agents of sustainable change and contributors to inclusive economic development.

Bahçeşehir University Promotes Sustainable Growth and Innovation through the Women Entrepreneurs Awards



Bahçeşehir University (BAU) annually celebrates International Women's Day with the BAU Women Entrepreneurs Awards, an event that honors the achievements of women graduates who have established successful ventures across diverse sectors. Organized by the BAU Alumni Center, the ceremony serves as a platform to highlight inspiring success stories, promote women's leadership in business, and encourage young female students to pursue their entrepreneurial ambitions.

Through this initiative, BAU brings together women entrepreneurs from various industries, creating a network that fosters collaboration, mentorship, and innovation. The event also aims to emphasize the role of women in shaping sustainable economic development and to strengthen the link between education, innovation, and entrepreneurship.

So far, 19 BAU alumnae entrepreneurs have been recognized for their accomplishments in areas such as robotics, biotechnology, law, design, communication, media, and tourism. Among them are Nilüfer Gürtekin Yalçinkaya (Lobby Agency), Hayriye Cansu Paksoy (UP Robotics), Sima Baktaş (GlobalB Law Firm), Kardelen Afroditi Adsal (Biotech ARGE), Elmas Nida Baykal Alkan (OMG Media), and Alev Durmuşoğlu (Doğumfotosu.com), all of whom exemplify the innovative and resilient spirit of BAU graduates. In addition, Fatma Altun, founder of Güney Köy, received special recognition for her contributions to ecological tourism and environmental sustainability.

By honoring women entrepreneurs who transform challenges into opportunities and lead impactful businesses, Bahçeşehir University reinforces its commitment to empowering women, advancing innovation, and promoting sustainable growth. The initiative directly supports the objectives of SDG 9 (Industry, Innovation, and Infrastructure) and SDG 5 (Gender Equality), reflecting the university's belief that women's leadership and creativity are essential drivers of a more inclusive and sustainable future.

Sustainability and New Technologies in Creative Industries: 3D Printing Open Workshop (11.10.2024)



Bahçeşehir University hosted the “3D Printing and Innovation” Open Workshop, which introduced participants to the fundamentals of 3D printing technology and its role in promoting sustainable production and design practices. Organized as part of the University’s broader commitment to public education, innovation, and sustainability awareness, the workshop welcomed both BAU students and members of the wider community.

Participants explored the entire process of 3D printing—from digital design and modeling to the creation of tangible prototypes—using environmentally conscious methods and sustainable materials. Alongside hands-on sessions, expert-led discussions examined the industrial, engineering, and creative applications of 3D printing, emphasizing its potential to reduce waste, optimize resource use, and support circular economy principles.

By combining theory, practice, and sustainability, the workshop fostered learning, skill development, and environmental responsibility among participants. It also highlighted how technological innovation can serve as a catalyst for sustainable development and the future workforce.

The “Sustainability and New Technologies in Creative Industries: 3D Printing Open Workshop” directly contributes to several Sustainable Development Goals through its focus on innovation, education, and responsible production. By providing participants with hands-on learning experiences in digital design and sustainable manufacturing, the workshop advances SDG 4 (Quality Education) by fostering technical literacy and lifelong learning. It supports SDG 8 (Decent Work and Economic Growth) through the development of future-oriented skills that enhance employability and innovation within the creative and industrial sectors.

In line with SDG 9 (Industry, Innovation and Infrastructure), the workshop demonstrates how emerging technologies such as 3D printing can drive sustainable industrial innovation, optimize resource use, and strengthen technological capacity. Moreover, by emphasizing the use of eco-friendly materials and circular design principles, it aligns with SDG 12 (Responsible Consumption and Production), promoting environmentally conscious production practices and the reduction of waste. Through this integrated approach, the event highlights how technology and sustainability can work together to shape a more responsible and innovative future.

BAU BRIDGE: Green Future: Opportunities from the Perspectives of Sustainable Finance, Social Entrepreneurship, and Innovation (11.05.2024)



The Department of International Finance at Bahçeşehir University organized a specialized International Finance Certificate Program under the title “Green Future: Opportunities from the Perspectives of Sustainable Finance, Social Entrepreneurship, and Innovation.”

Held on May 11, 2024, the event aimed to promote a deeper understanding of sustainability-oriented approaches within finance, entrepreneurship, and innovation. The sessions brought together students, academics, and industry professionals to discuss the evolving role of financial systems in achieving a more inclusive and environmentally responsible global economy.

The program featured three interactive sessions focusing on Sustainable Finance, Social Entrepreneurship, and Innovation, with expert contributions from Kalkınma Yatırım Bankası and faculty members of Bahçeşehir University’s International Finance Department. These sessions provided participants with both theoretical and practical insights into how sustainability principles can be embedded into financial decision-making, business models, and innovation ecosystems.

This initiative directly contributes to the United Nations Sustainable Development Goal 4 (Quality Education) by offering high-quality, inclusive, and forward-looking educational opportunities. The program empowered students to develop critical thinking skills and interdisciplinary perspectives essential for addressing global challenges through sustainable finance and social impact initiatives.

BAUGO: “Women and Technology: Discover Your Role and Enhance Your Potential”



Conducted by Prof. Dr. Ebru Canan-Sokullu, this training focused on exploring women’s role in the technology field and strengthening their participation in an increasingly digital world. It emphasized that while women today are shaping technology as innovators, leaders, and creators, gender inequality and stereotypes continue to limit equal access and representation.

Based on modules such as historical perspectives on equality in technology, gender and equal opportunity, international approaches, statistical insights, and women’s contribution to science and technology in Türkiye, the training encouraged participants to reflect on challenges and strategies for achieving equality in tech. By promoting awareness and empowering women to take active roles in technological innovation, Bahçeşehir University highlighted its commitment to inclusive and equitable progress in this field.

This initiative directly contributes to SDG 5: Gender Equality by addressing gender disparities in technology and supporting women’s empowerment, and it also aligns with SDG 4: Quality Education and SDG 9: Industry, Innovation and Infrastructure through its focus on inclusive participation and knowledge-based development.

<https://baugo.online/instructor/ebru-canan-sokullu>

3. RESEARCH VISIBILITY AND INNOVATION IMPACT INITIATIVES SUPPORTING SDG 9

Bahçeşehir University extends its commitment to SDG 9 (Industry, Innovation and Infrastructure) beyond research and project development to include the visibility and dissemination of knowledge through international collaboration, public engagement, and academic outreach.

The University recognizes that innovation achieves its fullest impact when scientific ideas and project outcomes are shared across borders and disciplines.

Within this scope, BAU researchers and experts actively participate in global events, conferences, and collaborative networks that promote the exchange of best practices and emerging technologies aligned with SDG 9.

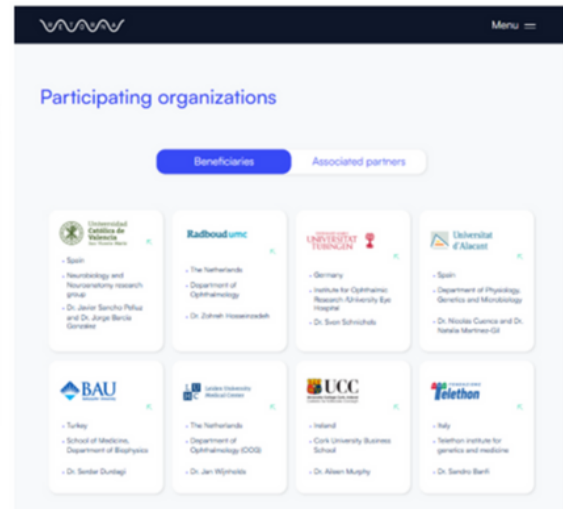
These activities not only enhance the institution's international research profile but also strengthen its role in shaping global discussions on sustainable industrialization, technological advancement, and data-driven policy development.

The initiatives presented under this section represent two complementary dimensions of visibility and impact:

1. **Research and Project Dissemination**, where BAU contributes to international platforms focused on measuring, monitoring, and improving innovation infrastructure; and
2. **Academic Outreach and Public Engagement**, where faculty and researchers deliver presentations, lectures, and conference papers that translate scientific knowledge into societal and industrial benefit.

Through these combined efforts, Bahçeşehir University ensures that its research and innovation outcomes extend beyond academic boundaries—informing policy, inspiring collaboration, and fostering a culture of shared progress in line with the vision of SDG 9 and the broader UN 2030 Agenda.

RETORNA Project: Advancing Biotechnological Innovation for Sustainable Health Solutions



The RETORNA Project, in which Bahçeşehir University represents Türkiye as a core partner, is an international EU-funded research initiative that pioneers RNA-based therapeutic technologies to restore sight and advance innovation in vision science. The project's core focus on scientific excellence, technological development, and biomedical infrastructure directly supports SDG 9 (Industry, Innovation and Infrastructure) and SDG 3 (Good Health and Well-Being) by linking frontier research to sustainable healthcare solutions.

Through its multidisciplinary design, RETORNA expands Europe's biotechnology innovation ecosystem by integrating research, education, and commercialization pathways. This alignment with SDG 8 (Decent Work and Economic Growth) is reflected in its emphasis on developing new biotechnological value chains, high-skill employment opportunities, and translational research capacities that strengthen both academic and industrial innovation infrastructure.

The consortium—comprising leading European institutions such as the Universidad Católica de Valencia (Spain), Radboud University Medical Center (Netherlands), University of Tübingen (Germany), Universitat d'Alacant (Spain), Leiden University Medical Center (Netherlands), University College Cork (Ireland), and the Telethon Institute of Genetics and Medicine (Italy)—demonstrates how cross-border partnerships advance global scientific collaboration and capacity-building.

Bahçeşehir University's School of Medicine, Department of Biophysics, led by Dr. Serdar Durdağı, plays a central role in the scientific coordination and computational modeling of RNA-based therapeutics, reinforcing Türkiye's integration into European research infrastructures.

By promoting biotechnology-driven solutions, building advanced R&D capacity, and fostering international scientific cooperation, RETORNA contributes simultaneously to:

- SDG 9 by strengthening scientific and industrial innovation infrastructure,
- SDG 3 through the development of health technologies that improve quality of life,
- SDG 8 by enabling knowledge-based economic growth and employment in biotechnology sectors, and
- SDG 17 (Partnerships for the Goals) by exemplifying how transnational collaboration accelerates sustainable technological progress.

<https://retorna.eu/about-retorna/>

STE²AM Project: Shaping the Future through Interdisciplinary and Entrepreneurial Education



The STE²AM Project, co-led by Bahçeşehir University (Türkiye) with partners from Italy, Lithuania, and Greece, redefines education at the intersection of Science, Technology, Engineering, Arts, Mathematics, and Entrepreneurship. Supported by the European Union's Erasmus+ Programme, the project advances interdisciplinary and innovation-based learning models that prepare students to address complex global challenges through creativity, analytical thinking, and entrepreneurial problem-solving.

By integrating technology and entrepreneurship into educational design, STE²AM directly supports SDG 9 (Industry, Innovation and Infrastructure) through the development of innovation-driven educational infrastructures and human capital for sustainable industries. The project's methodology strengthens the bridge between academia and the labor market, promoting innovation culture and equipping learners with the competencies necessary for research-intensive, technology-oriented professions.

Beyond its industrial and innovation focus, STE²AM also contributes to SDG 4 (Quality Education) by promoting inclusive, interdisciplinary, and future-oriented pedagogies; to SDG 8 (Decent Work and Economic Growth) by fostering entrepreneurial mindsets and employment-ready skills; and to SDG 17 (Partnerships for the Goals) through its strong emphasis on international collaboration and knowledge exchange among European universities.

Through comparative research, co-creation workshops, and policy dialogue, the STE²AM initiative not only enhances the quality and inclusivity of STEAM education, but also cultivates a sustainable learning ecosystem that empowers new generations of innovators to design solutions aligned with the principles of sustainable industrial development and innovation-led growth.

<https://www.ste2am.com/>

DIGICULTGAME Project: Innovative Tools to Digitize the East and West Cultural Heritage



Innovative Tools To Digitize The East And West Cultural Heritage: A Digital Game Design Methodology Guide		
Main Menu / CONSORTIUM		
CONSORTIUM		
APPLICANT ORGANISATION		
	Eskişehir Osmangazi Üniversitesi	E10014662
PARTNER ORGANISATIONS		
	Eskişehir Teknik Üniversitesi	E10020483
	Bahçeşehir Üniversitesi Foundation	E10199260
	Università degli Studi di Firenze	E10209099
	Universitat Politècnica de Catalunya	E10209385
	Azerbaijan Architecture and Construction University	E10140640
	NGO "NON-FORMAL EDUCATION FOR YOUTH"	E10025708
	EQUAL OPPORTUNITY AND SUSTAINABLE FUTURE ASSOCIATION	E10309673
ASSOCIATE PARTNERS		
	MUSEU D'ARQUEOLOGIA DE CATALUNYA, SPAIN	
	PENCUSE DIGITAL, TURKEY	

The DIGICULTGAME Project, with Bahçeşehir University (Türkiye) as a key partner alongside Universitat Politècnica de Catalunya (Spain), University of Florence (Italy), Eskişehir Osmangazi University (Türkiye), Azerbaijan University of Architecture and Construction (Azerbaijan) and other institutions, is an international research and innovation initiative that pioneers the digital transformation of cultural heritage through interactive game design.

By integrating digital technologies, data-driven methodologies, and applied design research, DIGICULTGAME develops innovative tools to preserve and transfer both tangible and intangible cultural assets to younger generations. Its e-learning platform, educational materials, and game-based learning models promote cultural awareness, creativity, and social inclusion through technology-enhanced education.

The project contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by advancing the digitalization of cultural and creative industries, strengthening innovation capacity, and promoting sustainable technological solutions for heritage preservation. It also supports SDG 4 (Quality Education) by integrating digital literacy and cultural education into learning environments, and SDG 11 (Sustainable Cities and Communities) by fostering inclusive cultural sustainability and safeguarding heritage through modern digital infrastructures.

Through collaborative research and international knowledge exchange, DIGICULTGAME exemplifies how universities and creative sectors can work together to build a sustainable innovation ecosystem, where education, culture, and technology converge to promote resilient, knowledge-based, and culturally connected communities.

<https://digicultgame.ogu.edu.tr/>

MIXAP Project: Developing Research-Based Innovative Pedagogical Practices through Mixed Reality in Education



Copyright 2025 MIXAP – LIUM

This website uses the [Link Sans](#) and [Baloo Paaji](#) open source fonts.

Design and website by [Atelier Joville](#).

The MIXAP Project (Mixed Reality in Education)—coordinated by Le Mans Université (France) in collaboration with the Technical University of Denmark (Denmark) and Bahçeşehir University (Türkiye)—advances innovation in educational technology by integrating Mixed Reality (MR) into teaching and learning environments. This international research and best-practice initiative aims to empower educators to design, implement, and evaluate immersive MR-based learning experiences that enhance engagement, inclusivity, and cognitive understanding.

Through its participatory co-design approach involving workshops, classroom pilots, and cross-country collaboration, MIXAP builds capacity among teachers to adopt emerging technologies within evidence-based pedagogical frameworks. Its practical outputs—including an open-access augmented reality authoring tool, digital learning resources, and a sustainable teacher community—demonstrate how innovative infrastructure can transform learning environments.

The project directly contributes to SDG 9 (Industry, Innovation and Infrastructure) by developing digital infrastructure for educational innovation, fostering human capacity for technological adaptation, and bridging the gap between research, technology, and classroom application. It also advances SDG 4 (Quality Education) through its focus on inclusive, accessible, and technology-enhanced learning, and SDG 17 (Partnerships for the Goals) through its model of collaborative international research and open knowledge exchange.

By aligning research, technology, and practice, MIXAP shapes the future of education as an innovation-driven ecosystem, strengthening both digital pedagogy and institutional readiness for the next generation of intelligent learning infrastructures.

<https://mixap-lium.univ-lemans.fr/team/>

AI in ADU Project: Artificial Intelligence in Adult Education and Self-Learning



The AI in ADU Project (Artificial Intelligence in Adult Education and Self-Learning)—with Bahçeşehir University (Türkiye) as a partner alongside Emphasys Centre (Cyprus), One World One Heart (Poland), PRISM Impresa Sociale (Italy), Bupnet GmbH (Germany), and KulturLife gGmbH (Germany)—is an EU Erasmus+-supported international research and best practice initiative that explores how artificial intelligence can enhance adult learning and lifelong education.

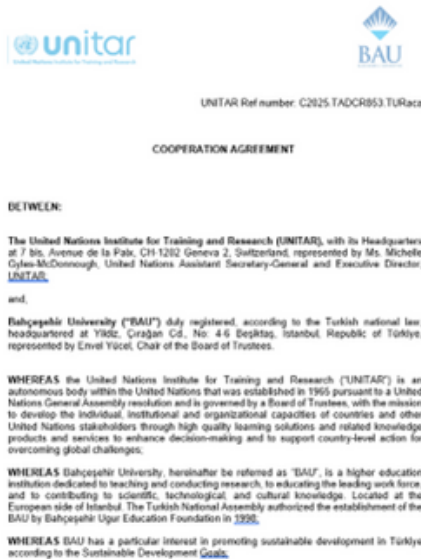
By conducting comparative research, focus groups, surveys, and AI platform analyses, the consortium identifies opportunities and challenges in integrating AI into learning processes, designing personalized, flexible, and data-driven education models. The project's practical outcomes include methodological guidelines, digital resources, and video-based training modules that enable educators and self-learners to effectively use AI tools for skill development and self-directed learning.

The initiative directly supports SDG 9 (Industry, Innovation and Infrastructure) by fostering technological innovation in education, strengthening digital learning infrastructures, and promoting the responsible adoption of emerging technologies in lifelong learning ecosystems. It also contributes to SDG 4 (Quality Education) by improving the accessibility and quality of adult education, and to SDG 17 (Partnerships for the Goals) through its strong emphasis on international cooperation and open-access knowledge sharing.

Through its evidence-based design and collaborative approach, AI in ADU exemplifies how artificial intelligence can serve as both a technological and social innovation tool—empowering individuals, enhancing institutional capacities, and building the foundation for inclusive, innovation-oriented, and sustainable educational ecosystems aligned with the goals of SDG 9.

<https://aiineducation.eu/>

BAU-UNITAR Collaboration through CIFAL Istanbul: Advancing SDG Policy Development and International Cooperation



As the institutional host of CIFAL Istanbul, Bahçeşehir University (BAU) collaborates with the United Nations Institute for Training and Research (UNITAR) to advance capacity development, policy innovation, and SDG-oriented governance in Türkiye, Eastern Europe, and the MENA region. Operating under the renewed 2023-2025 Cooperation Agreement, CIFAL Istanbul functions as a hub for research, policy dialogue, and leadership training, dedicated to strengthening institutional capacities for sustainable development.

Through workshops, seminars, e-learning programs, and collaborative research, CIFAL Istanbul supports policymakers, local authorities, and private sector representatives in designing data-driven, inclusive, and innovation-based policy frameworks. These programs directly contribute to SDG 9 (Industry, Innovation and Infrastructure) by enhancing the institutional infrastructure required for innovation-oriented governance, digital transformation, and sustainable economic development.

In addition, the initiative supports SDG 4 (Quality Education) through training and lifelong learning programs; SDG 8 (Decent Work and Economic Growth) by fostering innovation and entrepreneurship in public policy; SDG 11 (Sustainable Cities and Communities) by promoting resilient urban planning; SDG 13 (Climate Action) through capacity-building on climate adaptation strategies; SDG 16 (Peace, Justice and Strong Institutions) via improved governance mechanisms; and SDG 17 (Partnerships for the Goals) by facilitating global cooperation and intersectoral partnerships.

By positioning CIFAL Istanbul as a regional center of excellence for evidence-based policymaking and sustainable governance, Bahçeşehir University exemplifies how higher education institutions can leverage international partnerships and innovation-driven capacity-building to accelerate progress toward multiple Sustainable Development Goals simultaneously.

<https://unitar.org/about/offices-training-centres-around-world/cifal-istanbul>

Bahçeşehir University's AI-Driven Chip Design Project Receives EU Funding



In alignment with SDG 9 (Industry, Innovation and Infrastructure), Bahçeşehir University (BAU) has been selected as a key partner in the European Union's Horizon Europe Key Digital Technologies (KDT) 2023 initiative with its groundbreaking project, "RIBL – Remote Innovations in Boolean Logic." The project, supported by a total EU budget of €16 million, aims to revolutionize chip design through the integration of artificial intelligence and open-source technologies.

Led by Dr. Fatih Kahraman (BAU), Dr. Binnur Kurt, and Suna Akbayır (Artech International BVBA), the RIBL project combines AI-assisted design tools with RISC-V and open-source chip architecture to enhance efficiency and accessibility in integrated circuit design. This milestone positions BAU among Europe's strategic partners in semiconductor innovation and represents a major step forward for Türkiye's digital transformation.

In addition to research collaboration, BAU will contribute through specialized master's and doctoral programs in Digital IC Design and Verification, developing future experts in semiconductor technology. The initiative reinforces BAU's commitment to advancing technological innovation, education, and sustainable industrial growth, contributing directly to the goals of SDG 9.

<https://2mart.com.tr/teknoloji/bahcesehir-universitesinin-cip-tasariminda-yapay-zeka-kullanilmasi-49762.html>

<https://tto.bau.edu.tr/en/support-from-the-eu-for-bahcesehir-universitys-using-artificial-intelligence-in-chip-design-project/>

<https://www.dha.com.tr/teknoloji/bahcesehir-universitesinin-cip-tasariminda-yapay-zeka-kullanilmasi-projesine-abden-destek-2410384>

STExperiMents Project: Developing International Best Practices in STEM Education through Comparative Research and Collaboration



The STExperiMents Project, implemented in partnership with Bahçeşehir University (Türkiye), Charles University (Czech Republic), Johannes Kepler University (Austria), and the University of Jyväskylä (Finland), is an international research and innovation initiative designed to strengthen STEM and STEAM education through comparative analysis and collaborative development of innovative teaching practices. Supported under the European Union's research and education frameworks, the project responds to the rising demand for science, technology, and digital competencies in the European labor market.

By creating, testing, and refining both real and virtual STEM experiments, the project fosters an integrated model of technological innovation in education, equipping teachers with tools and methodologies to enhance hands-on science and technology learning. Its open-access digital toolkit—comprising experimental designs, evaluation guidelines, and pedagogical resources—serves as an international reference model for innovation in STEM education.

The initiative contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by building the knowledge infrastructure and technological capacity necessary for innovation-driven learning environments. It also advances SDG 4 (Quality Education) by promoting inclusive, high-quality, and research-based teaching approaches, and SDG 17 (Partnerships for the Goals) through cross-border collaboration and shared academic expertise.

Through its comparative research, pilot studies, and dissemination of best practices, STExperiMents exemplifies how universities can integrate industrial innovation principles into education, bridging the gap between technological development and human capital formation. The project ultimately supports a sustainable innovation ecosystem, preparing educators and learners to thrive in a rapidly evolving, technology-oriented society.

<https://stexperiments.pedf.cuni.cz/about-the-project/>

Software Talent and Employment Center Project: Building a Skilled and Sustainable Digital Workforce



Implemented through a strategic partnership between the Ministry of Industry and Technology of the Republic of Türkiye, Bahçeşehir University – Wissen Academy and supported by the Istanbul Development Agency (ISTKA), the Software Talent and Employment Center Project represents a comprehensive model that integrates advanced training, direct employment placement, and post-program monitoring within Türkiye's growing digital economy.

Launched in 2023 and continuing until 2026, the program provides 480 hours of intensive, free-of-charge training in key technology domains including Full Stack Programming, Network and Cyber Security, Data Science, Artificial Intelligence, and Game Development. Beyond technical training, the program's innovative design includes career mentorship, professional certification, and structured job placement mechanisms, ensuring that each participant transitions directly from education to employment.

Distinct from conventional education initiatives, the Center operates as a full employment ecosystem, maintaining long-term collaboration with technology companies to match graduates with workforce needs and to monitor employment sustainability. The program thus fosters a continuous feedback loop between academia and industry, improving curriculum relevance and labor market responsiveness.

By strengthening Türkiye's digital talent pipeline and connecting education to high-value employment, the initiative directly supports SDG 9 (Industry, Innovation and Infrastructure) through innovation capacity-building in the technology sector; SDG 4 (Quality Education) by providing accessible, high-quality technical education; and SDG 8 (Decent Work and Economic Growth) by facilitating youth employment and supporting sustainable economic transformation. Through its inclusive design targeting young unemployed graduates aged 18–35, the Software Talent and Employment Center exemplifies an impact-driven public-private partnership model that advances digital skills, employment resilience, and long-term innovation infrastructure development.

<https://www.dha.com.tr/egitim/bahcesehir-universitesi-nitelikli-genc-yazilimcilar-icin-istihdam-merkezi-kurdu-2381888>

<https://tto.bau.edu.tr/yazilim-yetenek-egitim-ve-istihdam-merkezi-lansmani-bahcesehir-universitesi-guney-yerleskesinde-gerceklesti/>

AI-Based Sustainable Agriculture Collaboration Between Türkiye and Malta: Designing an Integrated System Using Artificial Intelligence for Sustainable Resource Management



The AI-Based Sustainable Agriculture Project, jointly led by Assoc. Prof. Dr. Zeynep Tacer Caba from Bahçeşehir University (Türkiye) and Barbara Bracone, Director of Malta Wes Trade Ltd. (Malta), represents a bilateral innovation partnership supported under the TÜBİTAK-Malta Council for Science and Technology (MCST) Bilateral Cooperation Program. The initiative develops an AI-driven integrated system to address critical challenges in water, soil, and energy management for olive cultivation in Mediterranean rural regions.

By combining artificial intelligence, environmental science, and precision agriculture technologies, the project builds a scalable model for climate-smart and resource-efficient farming. Through comparative field research and data-driven modeling, the collaboration identifies best practices in both Türkiye and Malta, facilitating knowledge transfer and adaptation of sustainable agricultural methods across different agroecological contexts.

This initiative contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by strengthening the technological infrastructure of agricultural production and fostering innovation in sustainable agritech systems. It also advances SDG 2 (Zero Hunger) by promoting food security and sustainable agriculture, SDG 12 (Responsible Consumption and Production) through the efficient use of natural resources, and SDG 17 (Partnerships for the Goals) by fostering cross-border scientific collaboration and policy dialogue.

By integrating artificial intelligence into agriculture, the Türkiye-Malta collaboration exemplifies how data-driven innovation can transform traditional industries, enhance environmental resilience, and support sustainable rural development. The project positions Bahçeşehir University as a key contributor to AI-enabled green innovation, bridging research excellence with practical applications for a more sustainable and technologically empowered Mediterranean region.

TÜBİTAK ARDEB 3501 Project: AI-Supported Neurofeedback Biomarker Detection for Improving Reading Performance in Dyslexic Children



Conducted by Dr. Günet Eroğlu, Faculty Member at the Department of Computer Engineering, Bahçeşehir University, this TÜBİTAK ARDEB 3501 Career Development Project develops an AI-assisted neurofeedback system to enhance reading performance and learning outcomes in children with dyslexia. By integrating neuroscience, artificial intelligence, and educational technology, the project pioneers a data-driven approach to personalized cognitive training.

Through 14-channel quantitative EEG (QEEG) recordings collected via the Auto Train Brain mobile application, the research monitors and evaluates neurofeedback sessions among 7-10-year-old dyslexic children. The AI-based biomarker detection algorithm distinguishes typical and dyslexic brain activity patterns with over 95% accuracy, providing measurable evidence that neurofeedback can normalize brain activity and improve learning capacity.

The initiative contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by advancing neurotechnology and digital health innovation, strengthening research infrastructure in cognitive sciences, and fostering technology-driven therapeutic solutions. It also supports SDG 3 (Good Health and Well-Being) by promoting non-invasive and personalized interventions for neurodevelopmental conditions, and SDG 4 (Quality Education) by improving accessibility to evidence-based tools that support learning for children with reading difficulties.

By combining artificial intelligence with neuroscience, the project exemplifies how innovation in data science and digital infrastructure can address pressing educational and health challenges. It establishes a scalable, accessible model for personalized neurofeedback training, contributing to a sustainable ecosystem of research, technology, and social impact aligned with the objectives of SDG 9.

<https://www.guncelkadin.com.tr/disleksili-bireylere-umut-olacak-calisma-yayinlandi/>

<https://bau-hub.com/bau-hub-girisimi-auto-train-brain-8-2-milyon-usd-degerleme-uzerinden-yatirim-aldi/>

TÜBİTAK ARDEB 1001 Project: Identification of Novel Human Regulators of the Caspase-4 Inflammasome in Sepsis



Conducted by Asst. Prof. Dr. Elif Eren from the Department of Molecular Biology and Genetics, Faculty of Engineering and Natural Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 1001 (2023-2026) Project investigates the molecular regulation of the Caspase-4 inflammasome, a key innate immune complex that protects the human body against bacterial infections but may cause severe inflammation and tissue damage during sepsis.

The project aims to identify and characterize novel human regulatory proteins that suppress or modulate Caspase-4 activation. Using advanced molecular biology and immunology techniques—including gene cloning, immunoprecipitation, mass spectrometry, CRISPR/Cas9 gene editing, and bioinformatic analyses—the study maps the Caspase-4 interactome and explores how specific proteins influence inflammasome activity at the cellular level. The expected findings will provide valuable insights for the development of next-generation therapeutic strategies targeting inflammation-related diseases.

The initiative contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by enhancing biomedical research capacity and strengthening national innovation infrastructure in molecular and cellular biology. It also supports SDG 3 (Good Health and Well-Being) by advancing knowledge toward new treatments for sepsis and SDG 4 (Quality Education) through the active involvement of graduate and undergraduate researchers in high-impact experimental science.

By bridging biomedical innovation, data-driven discovery, and research training, this project exemplifies how frontier molecular biology research can drive sustainable scientific advancement. It strengthens Turkey's position in health-related biotechnology, contributing to the broader objectives of SDG 9 through innovation-led capacity building and knowledge generation.

<https://tto.bau.edu.tr/dr-ogretim-uyesi-elif-erenin-projesi-tubitak-3501-kariyer-gelistirme-programi-kapsaminda-destek-kazandi/>

TÜBİTAK ARDEB 3501 Project: Racks from the Viewpoint of Finite Group Theory



Conducted by Asst. Prof. Dr. Mert Çağlar from the Department of Mathematics, Faculty of Engineering and Natural Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 3501 Career Development Project (2023–2026) explores the algebraic, combinatorial, and geometric properties of mathematical structures assigned to finite groups, with a particular focus on racks and quandles.

Situated at the intersection of algebraic topology, combinatorics, and finite group theory, the project investigates the structure of specific subsets of finite groups through the lens of rack theory. Racks are algebraic objects equipped with a binary operation exhibiting self-distributivity, appearing in various contexts—most notably in knot theory, where they are used to define link invariants. This research aims to strengthen the theoretical connections between rack theory and group theory, contributing to the understanding of conjugation operators and subgroup structures in finite groups.

Through this interdisciplinary framework, the project examines conjugacy class racks and p -power order element racks, analyzing their combinatorial and topological characteristics. The subrack structures will be explored as partially ordered sets (posets) under inclusion, allowing their properties to be studied using the tools of algebraic topology, such as order complexes and homological invariants.

The project contributes to SDG 9 (Industry, Innovation and Infrastructure) by enhancing Turkey's research capacity in abstract algebra and mathematical sciences, fostering innovative theoretical frameworks with potential applications in cryptography, information theory, and computational topology. It also supports SDG 4 (Quality Education) through the integration of undergraduate and graduate research training, strengthening academic networks and fostering international collaboration in fundamental mathematics.

By advancing mathematical innovation and interdisciplinary knowledge production, this 2023–2026 project exemplifies how foundational research in group theory can generate sustainable scientific impact, aligning with the goals of SDG 9 through research excellence and knowledge-driven innovation.

<https://tto.bau.edu.tr/dr-ogr-uyesi-selcuk-kayacanin-projesi-3501-kariyer-gelistirme-programi-kapsaminda-destek-kazandi/>

TÜBİTAK-MCST Bilateral Project: SOLEATECH – AI-Based Sustainable Agriculture for Olive Cultivation

Co-led by Assoc. Prof. Dr. Zeynep Tacer Caba from the Faculty of Engineering and Natural Sciences, Bahçeşehir University (Türkiye), and Dr. Barbara Bracone from WES Trade Ltd. (Malta) in collaboration with the University of Malta, this bilateral R&D project (2023–2026) focuses on developing an AI-based preventive and decision-support model for sustainable olive cultivation in Mediterranean regions. Funded jointly under the TÜBİTAK–Malta Council for Science and Technology (MCST) cooperation program, the project exemplifies cross-border innovation in sustainable agriculture and green technologies.

The SOLEATECH Project aims to create a predictive Artificial Intelligence model capable of providing early warnings and guidance to farmers and agronomists for improving olive yield, optimizing irrigation, and managing soil conditions. By combining data from autonomous ground sensors with ontological, climatic, and historical datasets, the project seeks to uncover correlations that can inform timely interventions, reduce water waste, and enhance agricultural productivity.

The research integrates two complementary technological components:

- IRRIGOPTIMAL, developed by WES Trade, focuses on data-driven irrigation optimization, and
- BAU's Artificial Neural Network Predictive Model, which utilizes machine learning algorithms to analyze environmental and soil behavior patterns affecting olive tree health.

The project's methodology relies on operational pilot sites in both Malta and Türkiye, representing diverse Mediterranean agro-climatic conditions. The fusion of expertise from both countries—Malta's experience in water management and BAU's applied AI research—enables the design of a robust, scalable, and sustainable model that directly supports farmers in achieving eco-efficient and climate-smart agricultural practices.

The international collaboration between BAU, WES Trade, and the University of Malta also ensures long-term knowledge transfer and research continuity, supported by prior collaborations such as the ELAIWA Project. Data and models developed within SOLEATECH are intended to inform agricultural policy, enhance resilience in the olive oil value chain, and contribute to sustainable rural development across the Mediterranean region.

This project directly supports SDG 9 (Industry, Innovation and Infrastructure) by integrating artificial intelligence into agricultural innovation ecosystems, fostering cross-border research infrastructure, and strengthening industry-university partnerships. It also contributes to SDG 2 (Zero Hunger) and SDG 12 (Responsible Consumption and Production) by promoting sustainable food production, and SDG 17 (Partnerships for the Goals) through international scientific collaboration.

Through its 2023–2026 framework, SOLEATECH demonstrates how AI-driven preventive systems can transform traditional farming into data-informed, resilient, and sustainable agricultural practices, contributing both to technological innovation and environmental stewardship under the goals of SDG 9.

<https://plumtri.org/Project-SOLEATECH>

TÜBİTAK-MCST Bilateral Project: SOLEATECH – AI-Based Sustainable Agriculture for Olive Cultivation



Soleatech



The Malta Council for
Science & Technology



TÜBİTAK ARDEB 3501 Project: Emotional Labor and Gender in Academia



Led by Assoc. Prof. Dr. Ayşegül Akdemir from the Faculty of Economics, Administrative, and Social Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 3501 Career Development Project (2023–2026) investigates the relationship between emotional labor and gender within academic institutions, aiming to understand how gender roles influence emotional expectations, professional interactions, and well-being in higher education settings.

Emotional labor refers to the physical and cognitive efforts—such as gestures, facial expressions, and emotional regulation—that individuals employ to manage relationships and maintain social harmony in professional environments. Previous international studies have demonstrated that women are often expected to perform higher levels of emotional labor due to social assumptions that they are more empathetic or emotionally competent. However, despite academia’s relational nature, comprehensive studies focusing on the Turkish higher education context remain limited.

This project addresses that gap by examining both academics’ emotional labor practices and students’ expectations, adopting a dual perspective to reveal how gendered dynamics shape emotional engagement in academic life. Using case studies, focus group interviews with students, and semi-structured in-depth interviews with faculty, the study applies critical discourse analysis to explore how emotional labor intersects with gender, academic rank, and institutional culture.

The research contributes to SDG 9 (Industry, Innovation and Infrastructure) by advancing social science innovation and evidence-based institutional development, supporting the creation of more equitable, inclusive, and sustainable academic environments. It also contributes to SDG 5 (Gender Equality) by promoting gender-sensitive understanding of workplace practices, and to SDG 4 (Quality Education) by enhancing awareness of emotional well-being and equitable academic relations.

By offering a comprehensive analysis of emotional labor in academia, this 2023–2026 project will produce policy recommendations and awareness tools—including academic publications, a web platform, social media dissemination, and a stakeholder workshop—aimed at improving equality and well-being in higher education. Through its interdisciplinary and participatory approach, the project exemplifies how gender-focused social research can strengthen institutional innovation and contribute to the broader objectives of SDG 9.

<https://akaduygusalemek.wixsite.com/akaduygusalemek>

<https://tto.bau.edu.tr/doc-dr-aysegul-akdemirin-projesi-desteklenmeye-hak-kazandi/>

TÜBİTAK ARDEB 1001 Project: 3DNANOCOM – Modeling and 3D Printing of Acoustic Metamaterials



Led by Asst. Prof. Dr. Amir Navidfarin from the Faculty of Engineering and Natural Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 1001 Project (2023–2026) focuses on developing, modeling, and 3D printing mechanically enhanced acoustic metamaterials (AMMs) through the integration of 3D-structured hybrid carbon nanofillers into polylactic acid (PLA) nanocomposites. The research aims to establish both material-based and design-based innovation pathways for creating lightweight, multifunctional materials with advanced sound absorption and mechanical performance.

Recognizing that noise pollution is a growing global environmental challenge, the project addresses the limitation of conventional sound absorbers in controlling low-frequency waves (<500 Hz). Through simulation-driven design and additive manufacturing (FDM 3D printing), the project aims to create coiled and Helmholtz-type acoustic metamaterials capable of manipulating low-frequency acoustic waves with at least 30% improvement in mechanical and acoustic properties over standard polymers.

The research introduces a novel class of 3D hybrid CNT/GNP nanofillers, combining carbon nanotubes and graphene nanoplatelets to improve filler dispersion and interfacial bonding within the polymer matrix. This hybrid structure enhances energy dissipation via interfacial friction, resulting in superior damping behavior and durability. The hybrid nanocomposite filaments will be extruded using twin-screw technology and fabricated into AMMs through precision 3D printing, followed by mechanical and acoustic performance validation against computational models.

The project's results will advance nanocomposite design, acoustic engineering, and additive manufacturing, offering scalable applications in automotive, defense, aerospace, and consumer industries.

This research contributes to SDG 9 (Industry, Innovation and Infrastructure) by strengthening nanomaterials innovation and sustainable industrial design, while also supporting SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action) through the development of biodegradable, lightweight, and energy-efficient materials.

By merging materials science, computational modeling, and 3D manufacturing, this 2023–2026 project exemplifies sustainable engineering innovation, reinforcing Bahçeşehir University's role in advancing smart materials and green technology solutions under SDG 9.

<https://tto.bau.edu.tr/dr-ogr-uyesi-amir-navidfarin-projesi-tubitak-1001-programi-kapsaminda-destek-kazandi/>

TÜBİTAK ARDEB 1001 Project: Identification of Novel IL-17A Inhibitor Molecules from Molecular Databases for Multiple Sclerosis Therapy



Led by Assoc. Prof. Dr. Timuçin Avşar from the Department of Biophysics, School of Medicine, Bahçeşehir University, this TÜBİTAK ARDEB 1001 Project (2023–2025) focuses on the identification of new small-molecule inhibitors targeting IL-17A, a key proinflammatory cytokine involved in Multiple Sclerosis (MS) and other autoimmune disorders. The study combines *in silico* modeling, molecular docking, and structural biology with *in vitro* validation and animal model studies to develop more effective and safer therapeutic agents for MS.

Multiple Sclerosis is an inflammatory, demyelinating, and neurodegenerative disease of the central nervous system, characterized by immune-mediated myelin damage. The cytokine Interleukin-17A (IL-17A), primarily secreted by Th17 cells, CD8+ T cells, and natural killer cells, plays a pivotal role in sustaining chronic inflammation and neurodegeneration in MS. Although existing monoclonal antibodies such as brodalumab, secukinumab, and ixekizumab inhibit IL-17A or its receptor, their use is limited due to non-specific side effects and high dosages. This project aims to overcome these limitations by identifying novel IL-17A inhibitory compounds through computational drug repurposing and screening of approved drug and small-molecule libraries.

The research employs integrated computational and experimental workflows, including molecular dynamics, binding mode analysis, and cell-based assays, complemented by X-ray crystallography performed with the Turkish Light Source in collaboration with national partners. The biological activity of selected compounds will be evaluated in a cuprizone-induced MS mouse model, assessing their ability to suppress inflammation, prevent demyelination, and promote remyelination.

The project directly supports SDG 9 (Industry, Innovation and Infrastructure) by advancing biomedical innovation, computational modeling, and molecular design capabilities, while also contributing to SDG 3 (Good Health and Well-Being) by targeting novel therapeutic mechanisms for neuroinflammatory diseases. Additionally, through the training of two PhD and one MSc researchers, it strengthens SDG 4 (Quality Education) and builds interdisciplinary expertise bridging biophysics, pharmacology, and structural biology.

By integrating AI-assisted molecular screening with experimental pharmacology, this 2023–2025 project exemplifies BAU's contribution to research-driven innovation and sustainable health technologies, advancing the scientific and infrastructural objectives of SDG 9.

<https://tto.bau.edu.tr/doc-dr-timucin-avsarin-projesi-1001-bilimsel-ve-teknolojik-arastirma-projelerini-destekleme-programi-kapsaminda-destek-kazandi/>

TÜBİTAK ARDEB 3501 Project: Mechanisms of Host Innate Immune Response Regulation by SARS-CoV-2



Led by Asst. Prof. Dr. Elif Eren from the Department of Molecular Biology and Genetics, Faculty of Engineering and Natural Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 3501 (2023-2026) Career Development Project explores how the SARS-CoV-2 virus modulates the host innate immune system at the molecular level. Building upon over a decade of research on inflammasome complexes, the project aims to reveal the mechanisms by which viral proteins interact with and regulate inflammasome activity in epithelial cells, providing new insights into COVID-19 pathogenesis and immune regulation.

The study focuses on identifying the inflammasome type activated by the SARS-CoV-2 ORF6 protein and uncovering its molecular activation mechanism using advanced cellular and molecular biology methods, including CRISPR/Cas9 screening, immunoprecipitation, immunostaining, and mutagenesis in human lung epithelial cell models. Findings will contribute to understanding virus-host interactions and to developing targeted therapeutic approaches against COVID-19 and future viral infections.

The project contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by advancing biomedical research infrastructure, fostering innovation in molecular immunology, and supporting the training of early-career researchers in high-impact scientific fields. It also supports SDG 3 (Good Health and Well-Being) by addressing viral pathogenesis and inflammation, and SDG 4 (Quality Education) by involving graduate and undergraduate students in cutting-edge experimental and data-driven research.

By integrating biotechnology, molecular innovation, and research training, this initiative strengthens Turkey's scientific capacity to respond to global health crises through innovation-driven biomedical discovery, aligning with the goals of SDG 9.

<https://tto.bau.edu.tr/dr-ogretim-uyesi-elif-erenin-projesi-desteklenmeye-hak-kazandi/>

TÜBİTAK ARDEB 1001 Project: Development of Dynamic Pharmacophore Models for YB-1 Inhibitors



Led by Prof. Dr. Serdar Durdağı from the Faculty of Pharmacy, Bahçeşehir University, this TÜBİTAK ARDEB 1001 Project (2024–2026) focuses on developing and validating AI-assisted dynamic pharmacophore models to discover novel YB-1 (Y-box binding protein 1) inhibitors, contributing to the advancement of computational drug discovery and pharmaceutical innovation infrastructure in Türkiye.

YB-1 is a multifunctional protein implicated in cancer progression and drug resistance, making it a critical therapeutic target in precision oncology. The project integrates computational modeling, pharmacophore generation, and molecular dynamics simulations to define the structural and energetic principles governing YB-1 inhibition. This scientific approach addresses one of the key challenges in drug development – transforming complex biological data into actionable molecular models that accelerate target-based drug design.

Through in silico screening of large compound libraries, candidate molecules predicted to bind YB-1 will be prioritized for molecular docking and in vitro validation. The dynamic pharmacophore framework will then be optimized iteratively using machine learning and structural refinement, leading to the identification of high-affinity inhibitor scaffolds with improved selectivity and safety profiles.

The project's expected outcomes include a validated computational workflow for YB-1 inhibitor discovery, a curated database of drug-like molecules, and increased research capacity in AI-powered medicinal chemistry. Beyond scientific discovery, the initiative enhances the national ecosystem for preclinical innovation, laying the foundation for potential translational collaborations with industry and research hospitals.

This research directly supports SDG 9 (Industry, Innovation and Infrastructure) by strengthening Türkiye's innovation capacity in pharmaceutical R&D and promoting advanced computational infrastructure for drug discovery. It also aligns with SDG 3 (Good Health and Well-being) through its focus on novel therapeutics addressing complex diseases.

By merging computational chemistry, artificial intelligence, and molecular biology, this 2024–2026 project exemplifies sustainable innovation in biomedical research, reinforcing Bahçeşehir University's role in advancing AI-driven healthcare solutions under SDG 9.

<https://tto.bau.edu.tr/prof-dr-serdar-durdaginin-projesi-tubitak-1001-programi-kapsaminda-destek-kazandi/>

TÜBİTAK ARDEB 3501 Project: Augmented Reality Marketing – Sensory Simulation, Psychological Ownership, and Brand Outcomes



Led by Asst. Prof. Dr. Vahideh Arghashi from Faculty of Economics, Administrative and Social Sciences, Bahçeşehir University], this TÜBİTAK ARDEB 3501 Career Development Project (2024-2026) explores how augmented reality (AR) technologies transform consumer experience through sensory simulation and psychological ownership, ultimately shaping brand perception, engagement, and loyalty.

In the era of digital transformation and smart economies, augmented reality has emerged as a critical marketing innovation that bridges the gap between physical and digital experiences. This project investigates how immersive AR environments replicate multi-sensory cues—such as sight, sound, and spatial presence—to enhance consumers' sense of product ownership before purchase. By empirically modeling these mechanisms, the study provides a behavioral framework for understanding how AR-based marketing tools can drive sustainable brand growth and innovation.

The research combines experimental design, behavioral analysis, and computational modeling to measure the mediating role of sensory immersion and the moderating effect of individual psychological traits in AR marketing experiences. Using virtual simulation platforms, consumer responses will be evaluated through physiological and cognitive indicators, linking immersive exposure to tangible marketing performance outcomes.

Findings from this project are expected to expand theoretical and practical understanding of human-technology interaction in marketing contexts, offering data-driven strategies for brand differentiation and consumer relationship management. The project also supports the design of responsible digital ecosystems by highlighting ethical and psychological dimensions of extended reality technologies.

By fostering research at the intersection of digital technology, behavioral science, and marketing innovation, this project contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by advancing the creative industries' technological capacity and digital innovation literacy. It further aligns with SDG 8 (Decent Work and Economic Growth) and SDG 12 (Responsible Consumption and Production) through its focus on sustainable digital consumer engagement and data-informed marketing practices.

By merging augmented reality, consumer psychology, and data analytics, this 2024-2026 project exemplifies innovation in digital marketing research, reinforcing Bahçeşehir University's leadership in smart and sustainable business transformation under SDG 9.

<https://tto.bau.edu.tr/dr-ogr-uyesi-vadideh-arghashinin-projesi-tubitak-1002-programi-kapsaminda-destek-kazandi/>

TÜBİTAK ARDEB 1001 Project: AI-Cam – Model Optimization and Artificial Intelligence-Based Camera Design for Low-Power Edge Devices



Led by Asst. Prof. Dr. Hassan İmani from the Faculty of Engineering and Natural Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 1001 Project (2023-2026) focuses on the development of an innovative AI-based camera system optimized for low-power edge devices, aiming to enhance real-time image processing, energy efficiency, and data security in embedded systems.

The AI-Cam project addresses a critical technological challenge in artificial intelligence applications: how to achieve high computational performance and model accuracy within the limited power and memory constraints of edge hardware. The research integrates model compression, pruning, and quantization techniques with advanced hardware-software co-design methods to create AI models that can operate efficiently without relying on cloud-based resources.

The project's main objectives are to (1) design a modular and scalable AI camera architecture, (2) optimize neural network models for embedded processing, and (3) evaluate real-time performance in various computer vision tasks such as object detection, motion tracking, and environmental sensing. By implementing on-device inference, AI-Cam reduces latency, enhances data privacy, and minimizes energy consumption – critical factors for applications in smart cities, autonomous vehicles, and industrial automation.

Through cross-disciplinary collaboration among computer engineers, data scientists, and hardware designers, the research also contributes to the advancement of edge AI ecosystems and supports the development of next-generation IoT infrastructure in Türkiye. The project's outcomes include open-source tools, hardware prototypes, and training modules to foster innovation in applied AI engineering.

This initiative contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by strengthening Türkiye's capacity for sustainable digital infrastructure development and AI-driven industrial transformation. It also aligns with SDG 7 (Affordable and Clean Energy) through its emphasis on energy-efficient design, and SDG 11 (Sustainable Cities and Communities) via smart and connected technology solutions.

By uniting machine learning optimization, embedded systems, and hardware innovation, this 2023-2026 project exemplifies sustainable engineering research, reinforcing Bahçeşehir University's leadership in AI-based technological innovation and smart infrastructure under SDG 9.

<https://tto.bau.edu.tr/dr-hassan-imaninin-projesi-tubitak-3501-programi-kapsaminda-destek-kazandi/>

TÜBİTAK ARDEB 3501 Project: Climate Change Teaching Module - A Socioscientific Approach



Led by Asst. Prof. Dr. Nilay Öztürk from the Faculty of Educational Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 3501 Career Development Project (2023–2026) aims to develop and implement an innovative teaching module on climate change based on a socioscientific issues (SSI) framework. The project integrates environmental science, ethics, and social inquiry to enhance climate literacy and critical thinking among students, fostering sustainable and innovation-oriented learning environments.

Through the SSI approach, the project encourages learners to critically analyze complex real-world problems such as carbon emissions, sustainable energy management, and environmental justice by connecting scientific evidence with social responsibility and policy implications. This interdisciplinary model empowers students to engage in informed debate, evidence-based reasoning, and collaborative problem-solving – essential competencies for sustainable innovation.

The project employs mixed-method research, combining classroom implementations, focus group interviews, and qualitative discourse analysis to evaluate the module's impact on both teachers and students. The results will contribute to the design of effective, scalable educational tools and strategies for integrating sustainability topics into formal curricula. By equipping educators with evidence-based resources and pedagogical models, the initiative supports the development of a climate-aware education infrastructure, strengthening the link between science, innovation, and sustainability in academic settings.

This project contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by fostering innovation-driven educational systems and resilient institutional capacity. It also supports SDG 4 (Quality Education) through improved STEM pedagogy and SDG 13 (Climate Action) by promoting climate literacy and responsible citizenship.

By integrating education for sustainability, digital innovation, and social responsibility, this 2023–2026 project reinforces Bahçeşehir University's leadership in developing forward-looking educational models under SDG 9.

<https://tto.bau.edu.tr/dr-ogr-uyesi-nilay-ozturkun-projesi-3501-kariyer-gelistirme-programi-kapsaminda-destek-kazandi/>

TÜBİTAK ARDEB 1001 Project: Development of a Turkish Sign Language Dataset – AI-Based Recognition and Translation



Led by Asst. Prof. Dr. Arezoo Sadeghzadeh from the Faculty of Engineering and Natural Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 1001 Project (2023–2026) develops the first comprehensive, large-scale Turkish Sign Language (TSL) dataset and an AI-based recognition and translation system to advance inclusive communication technologies for the deaf and hard-of-hearing community.

The project addresses the absence of large, publicly available datasets for continuous TSL recognition and translation. By capturing multimodal data—including RGB, depth, and infrared recordings—from 35 fluent signers of diverse ages, genders, and professional backgrounds, it creates a robust benchmark for real-world applications. The dataset consists of four integrated components:

1. Fingerspelling data for alphabets and digits (static and dynamic);
2. Isolated signs covering frequent and visually similar TSL words;
3. Continuous sign sequences representing everyday and public-service communication;
4. Emotion-based sign data, enabling the development of emotion-aware SLR/SLT models.

Each video is annotated at word, sentence, and spoken-language levels, allowing advanced machine learning research across sign recognition, translation, and emotion analysis. The inclusion of bilingual data (TSL ↔ Greek Sign Language) also supports future cross-lingual sign translation.

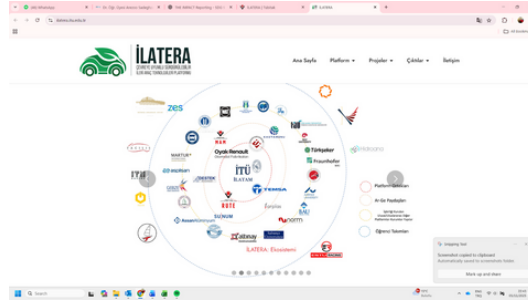
By leveraging deep learning, computer vision, and natural language processing, this project builds national capacity in AI-based accessibility systems and strengthens Türkiye's position in inclusive technology research.

This initiative contributes directly to SDG 9 (Industry, Innovation and Infrastructure) by advancing digital and research infrastructure for accessible AI. It also supports SDG 10 (Reduced Inequalities) by promoting communication equity and SDG 4 (Quality Education) through tools that foster inclusive learning.

By integrating AI innovation, linguistics, and social inclusion, this 2023–2026 project highlights Bahçeşehir University's leadership in developing responsible and human-centered technologies under SDG 9.

<https://tto.bau.edu.tr/dr-ogr-uyesi-arezoo-sadeghzadehin-projesi-desteklenmeye-hak-kazandi/>

TÜBİTAK ARDEB 1004 Project (ILATERA Platform): Development of a Lightweight, Thermally Conductive, and Energy-Efficient Hybrid Nanocomposite Battery Enclosure for Sustainable Vehicle Technologies



Led by Asst. Prof. Dr. Amir Navidfar from the Department of Mechatronics Engineering, Faculty of Engineering and Natural Sciences, Bahçeşehir University, this TÜBİTAK ARDEB 1004 Project (2023–2026) is conducted under the ILATERA Platform – Environment-Compatible Sustainable Advanced Vehicle Technologies, which aims to create a high-technology ecosystem for developing industry-transferable vehicle innovations aligned with Türkiye’s national resources and global mobility transformation.

This sub-project focuses on the design and development of a thermoplastic hybrid nanocomposite-based battery enclosure to enhance energy efficiency and thermal management in electric vehicles (EVs). By reducing component weight while maintaining mechanical strength and heat dissipation capability, the project contributes directly to increasing the driving range and overall sustainability of EV systems.

The research involves the synthesis of polyolefin-based thermoplastics using a PM-catalyst system and their reinforcement with graphene and/or hexagonal boron nitride (h-BN) nanofillers. Through advanced material characterization, composite fabrication, and component prototyping, the team aims to achieve significant improvements in thermal conductivity, structural integrity, and lightweight performance. Functional validation will be carried out through battery system-level testing, evaluating heat transfer, mechanical durability, and safety performance under real-world operating conditions.

The project’s outcomes are expected to yield a next-generation polymer composite material suitable for large-scale industrial use, supporting domestic innovation in automotive manufacturing and reducing dependency on imported raw materials.

By advancing sustainable materials science and energy-efficient engineering solutions, this initiative contributes directly to:

- SDG 9 (Industry, Innovation and Infrastructure) through research-driven industrial design and innovation,
- SDG 12 (Responsible Consumption and Production) by promoting recyclable and eco-efficient material use, and
- SDG 13 (Climate Action) by reducing the environmental impact of electric vehicle production and operation.

Through its integration in the ILATERA High-Technology Platform, this 2023–2026 TÜBİTAK ARDEB 1004 project exemplifies Bahçeşehir University’s leadership in sustainable mobility research and the transition toward a green, high-value automotive ecosystem aligned with Türkiye’s national innovation strategy.

<https://ilatera.itu.edu.tr/>

TÜBİTAK 4005 Project: Technology Integration Planning Model – Instructional Product Development through Generative AI



Led by Prof. Dr. Şefika Feza Orhan from the Faculty of Educational Sciences, Bahçeşehir University, this TÜBİTAK 4005 Project (2023–2026) aims to enhance teachers' professional competencies in integrating Generative Artificial Intelligence (GenAI) into instructional design and classroom practices.

The project proposes a structured in-service training program that introduces teachers to AI-supported educational design processes through the Technology Integration Planning (TIP) Model. It enables educators to understand, select, and apply GenAI tools for diverse instructional purposes—such as lesson planning, digital content creation, rubric development, and personalized feedback—while maintaining ethical awareness and critical evaluation skills.

Focusing on teachers working in public schools across Istanbul, the initiative strengthens their ability to design, adapt, and implement AI-supported instructional products aligned with pedagogical goals. Participants will gain practical experience by developing GenAI-assisted lesson plans, redesigning AI outputs according to learner needs, and testing these plans through micro-teaching sessions.

The project's ultimate goal is to empower teachers to use GenAI consciously and responsibly in the teaching process, improving educational quality and fostering digital transformation in learning environments.

This initiative contributes directly to:

- SDG 4 (Quality Education) by promoting innovative, AI-supported teaching methodologies,
- SDG 9 (Industry, Innovation and Infrastructure) through advancing AI integration in education systems, and
- SDG 17 (Partnerships for the Goals) by fostering collaboration between academia, schools, and technology stakeholders.

By equipping educators with sustainable, ethical, and innovative approaches to digital pedagogy, this TÜBİTAK 4005 project exemplifies Bahçeşehir University's commitment to educational innovation and teacher empowerment in the age of Artificial Intelligence.

<https://tto.bau.edu.tr/prof-dr-sefika-feza-orhanin-projesi-tubitak-4005-programi-kapsaminda-destek-kazandi/>

TÜBİTAK TEYDEB 1505 Project: Multi-Modal Content Tagging Using Machine Learning Techniques



Led by Assoc. Prof. Dr. Tevfik Aytekin from the Faculty of Engineering and Natural Sciences, Department of Computer Engineering, Bahçeşehir University, this TÜBİTAK TEYDEB 1505 University–Industry Collaboration Project (2025–2026) focuses on developing a machine learning-based, multi-modal content tagging system that automatically assigns fine-grained descriptive labels to online video materials.

With the exponential growth of digital video platforms, efficient and consistent content labeling has become essential for improving searchability, recommendation accuracy, and personalized user experience. This project combines textual, visual, and auditory data streams to create a unified AI model capable of recognizing and tagging contextual patterns within media content. The research introduces a multi-modal machine learning pipeline integrating data from video frames, speech transcripts, and metadata to automatically generate detailed semantic tags. The system leverages both supervised and self-supervised training methods to enhance tagging precision, reduce human bias, and minimize the manual annotation burden that typically limits scalability.

By aligning academic research with industrial application, the project aims to deliver a high-performance auto-tagging engine adaptable to dynamic video datasets and real-time media environments. Its expected outcomes include improved content recommendation accuracy, enhanced accessibility through automatic classification, and optimized digital content management systems.

This initiative contributes to:

- SDG 9 (Industry, Innovation and Infrastructure) by developing applied AI technologies that strengthen digital innovation ecosystems,
- SDG 12 (Responsible Consumption and Production) through reducing redundant human labor and promoting efficient data utilization, and
- SDG 17 (Partnerships for the Goals) via collaborative research between academia and industry partners.

Through its applied approach to AI-powered media analytics, this TÜBİTAK 1505 project (2025–2026) reinforces Bahçeşehir University’s leadership in intelligent content technologies, demonstrating how university–industry cooperation can advance sustainable digital infrastructure and innovation under SDG 9.

<https://tto.bau.edu.tr/doc-dr-tevfik-aytekinin-projesi-desteklenmeye-hak-kazandi/>

Conference Paper: "Recycling of Rare-Earth-Based Permanent Magnets via Powder Metallurgy Methods" (2023)



Intermag 2023
Sendai, Japan
May 15 - 19, 2023

Recycling and Enrichment of Rare Earth Based Permanent Magnet Scraps

Digests of the Intermag Conference • Conference Paper • 2023 • DOI: 10.1109/INTERMAG50591.2023.10265081

Ghorbanighoshchi S.^a; Celebi D.^{a,c}; Akdogan N.G.^{b,c}; Akdogan O.^{a,c}

^aBahcesehir University, Faculty of Engineering and Natural Sciences, Istanbul, Turkey

[Show all information](#)

[Full text](#) [Export](#) [Save to list](#)

[Document](#) [Impact](#) [Cited by \(2\)](#) [References \(19\)](#) [Similar documents](#)

Abstract

The trade dominance of China in the rare-earth industry, 31.8% reserves, and 70% of the production of rare earths jeopardize the continuity of strategic applications with high-Added value. Another and more important problem is that the mining of rare-earth elements is harmful to the environment. A considerable amount of rare-earth elements could be recycled back to the industry with the right recycling procedure while protecting the environment and providing economic benefits. In this work, using powder metallurgy methods, the rare-earth-based permanent magnet-containing devices currently in scrap yards were recycled. Recycling ferro magnets materials such as iron, strontium hexaferrite (SrFe₁₂O₁₉), and Neodymium Iron Boron (Nd-Fe-B) attract the attention of the industry. The rich source of SrFe₁₂O₁₉ and Nd₂Fe₁₄B in scrap yards are electric motors and hard disks, respectively. Separated SrFe₁₂O₁₉ and Nd₂Fe₁₄B magnets were cleaned, crushed, pulverized, recompact, and magnetized. This study aims to reach 100% density recycled permanent magnets with magnetic properties comparable to commercial counterparts. © 2023 IEEE.

Presented at the INTERMAG 2023 Conference, held at the Sendai International Center in Sendai, Japan (May 15–19, 2023), the study by S. Ghorbanighoshchi, D. Celebi, N.G. Akdogan, and O. Akdogan investigates the recycling of rare-earth-based permanent magnets using powder metallurgy techniques. By recovering critical materials such as SrFe₁₂O₁₉ and Nd₂Fe₁₄B from industrial scrap (including electric motors and hard disks), the research addresses both resource dependency and environmental sustainability challenges posed by global rare-earth production.

The study contributes to SDG 9 (Industry, Innovation, and Infrastructure) by advancing innovative materials recycling technologies, promoting sustainable industrial processes, and supporting the creation of resilient, circular, and knowledge-driven manufacturing infrastructures.

Conference Paper: "Remanufacturing and Circular Business Models in Electric Mobility" (2024)



Remanufacturing Electric Mobility: Challenges and Opportunities in Designing Circular Business Models

Lecture Notes in Mechanical Engineering • Conference Paper • 2024 • DOI: 10.1007/978-3-031-56474-3_20

Oleśków-Szłapka, Joanna^a • Corum, Adnan^b • Hoffa-Dąbrowska, Patrycja^c • Stachowiak, Agnieszka^a

^aPoznań University of Technology, Poznań, Poland

Show all information

Full text Export Save to list

Document Impact Cited by (8) References (40) Similar documents

Abstract

The rapid evolution of electric mobility has ushered in a transformative era in the automotive industry, promising cleaner and more sustainable transportation solutions. However, as electric vehicles (EVs) gain prominence, the environmental impact of their production, usage, and end-of-life management becomes a pressing concern. This paper explores the concept of remanufacturing in the context of electric mobility, addressing various types of remanufacturing processes and their potential in establishing circular business models. The study outlines the diverse landscape of remanufacturing processes, with a focus on their adaptability to electric mobility components. It explores challenges associated with the intricate design and evolving technologies in electric cars, shedding light on potential impediments to traditional remanufacturing practices. By discussing and analyzing current remanufacturing models, the paper aims to provide insights into their potential benefits for manufacturers operating in the electric mobility sector. The broader goal is to encourage the adoption of circular business models, promoting resource conservation, cost-effectiveness, and a diminished environmental footprint. © The Author(s), under exclusive license to Springer Nature Switzerland AG 2024.

Presented at the International Conference on Manufacturing and Civil Engineering (ICMCE 2024), the study by Joanna Oleśków-Szłapka, Adnan Corum, Patrycja Hoffa-Dąbrowska, and Agnieszka Stachowiak examines the role of remanufacturing in shaping sustainable and circular business models within the electric mobility sector. As the automotive industry transitions toward cleaner technologies, the paper highlights how remanufacturing processes can mitigate the environmental impacts of electric vehicle production, usage, and end-of-life management.

The study contributes to SDG 9 (Industry, Innovation, and Infrastructure) by fostering innovation in sustainable manufacturing systems, advancing circular economy principles, and promoting environmentally responsible industrial practices that enhance efficiency, resilience, and technological progress in the mobility industry.

Conference Paper: “The Effect of Neuromarketing Applications on Consumer Behavior on Purchasing Preferences” (2024)



Dr. Öğr. Üyesi Barış CEBECİ PERKER

Bahçeşehir Üniversitesi, İİSBF

ORCID ID: <https://orcid.org/0000-0002-6020-7084>

Abstract

Determining the effect of neuromarketing practices on consumer purchasing preferences has a great value in today's marketing world. Consumers' purchasing decisions are influenced by a number of complex factors, and marketers continually strive to understand these factors and develop the right strategies. At this point, neuromarketing stands out as an approach that aims to understand the real thoughts and emotional reactions of consumers.

The main purpose of this study is to determine the effect of neuromarketing practices on consumer purchasing preferences. In this regard, the in-depth interview method, which is one of the qualitative research methods, was used. Neuromarketing is a field of research that aims to understand consumers' behavior through the study of brain activity, emotional responses and unconscious processes.

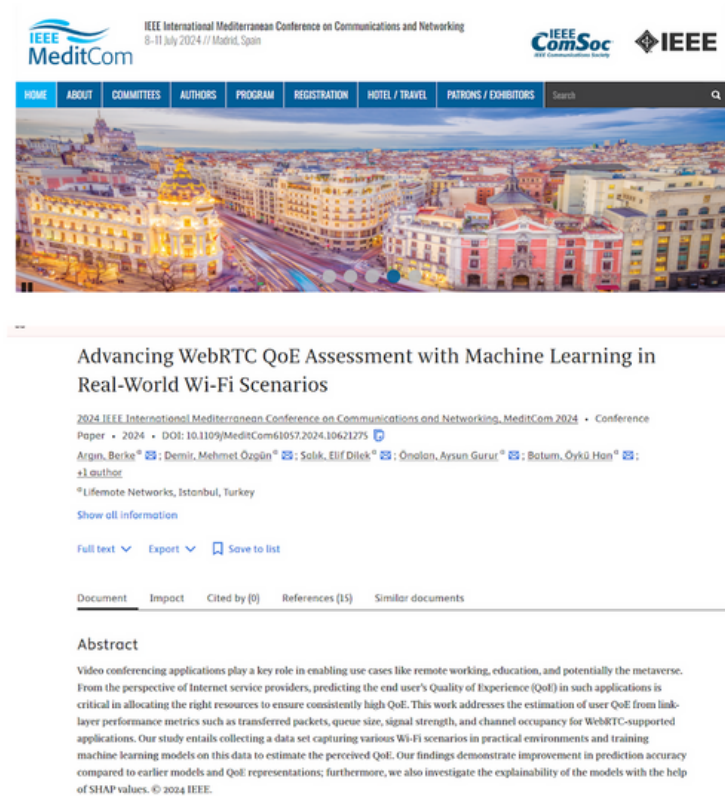
As a result, determining the effect of neuromarketing practices on consumer purchasing preferences is of great importance in terms of creating more effective strategies in the marketing world and better responding to the needs of consumers. As a conclusion of this study, it was seen that consumers are influenced by unconscious factors when making choices.

Keywords: Marketing, Neuromarketing, Neuroscience, Consumer Purchase Behavior

Presented at the 9th International New York Academic Research Congress on Social, Humanities, Administrative and Educational Sciences (2024), B. Perker's study explores the impact of neuromarketing applications on consumer purchasing behavior. By integrating scientific and technological innovations into marketing strategies, the research highlights how data-driven and neuroscience-based approaches can enhance decision-making, innovation capacity, and efficiency in business practices.

The study contributes to SDG 9 (Industry, Innovation, and Infrastructure) by emphasizing the role of technology and research in fostering innovation-driven industries and promoting sustainable, knowledge-based economic growth.

Conference Paper: "Estimating User Quality of Experience in WebRTC Applications Using Machine Learning" (2024)



Presented at the 2024 IEEE International Mediterranean Conference on Communications and Networking (MeditCom 2024), the study by Berke Argin, Mehmet Özgün Demir, Elif Dilek Salık, Aysun Gurur Önalán, Öykü Han Batum, and Ece Gelal Soyak explores the use of machine learning models to predict user Quality of Experience (QoE) in video conferencing applications. By analyzing link-layer performance metrics such as packet transfer, signal strength, and channel occupancy across various Wi-Fi scenarios, the research enhances the accuracy and explainability of QoE estimation models through the use of SHAP-based interpretability methods.

The study contributes to SDG 9 (Industry, Innovation, and Infrastructure) by advancing data-driven innovations in digital communication technologies, supporting the development of intelligent network infrastructures, and fostering more reliable, efficient, and inclusive connectivity solutions that strengthen industrial and educational digital transformation.



BAU

BAHÇEŞEHİR
UNIVERSITY