



FACULTY OF ENGINEERING AND
ARCHITECTURE

BULLETIN

SEPTEMBER 2023



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What you will read in this issue

News from Faculty

Actual Topics in Engineering
and Architecture

Academic and Scientific
Activities

COORDINATOR

PROF.DR. NECMETTİN MARAŞLI

CONTENT EDITORS

Res.Asisst. Beray İKİNCİ

Res.Asisst. Burcu KORKUT

Res.Asisst. Mehmet Ali BARIŞKAN

Res.Asisst. Mustafa Cem AVCI

Res.Asisst. Duygu TÜYLÜ

Res.Asisst. Oğuzhan Murat HALAT

Res.Asisst. Ufuk ATEŞOĞLU

DESIGN AND EDITING

Lecturer Burak Kaan YILMAZSOY

Res.Asisst. Hazal TÜRKMEN YAZGAÇ

CONTACT

(+90) 212 422 70 00

<http://mmf.gelisim.edu.tr/en/>

TAG



***NEWS FROM
THE FACULTY***

NEWS FROM FACULTY



Mechatronics Engineering

Working at IGU Faculty of Engineering and Architecture, Department of Mechatronics Engineering, Asst. Prof. Dr. Kenan Şentürk on September 25 introduced our department laboratory and university to high school students.



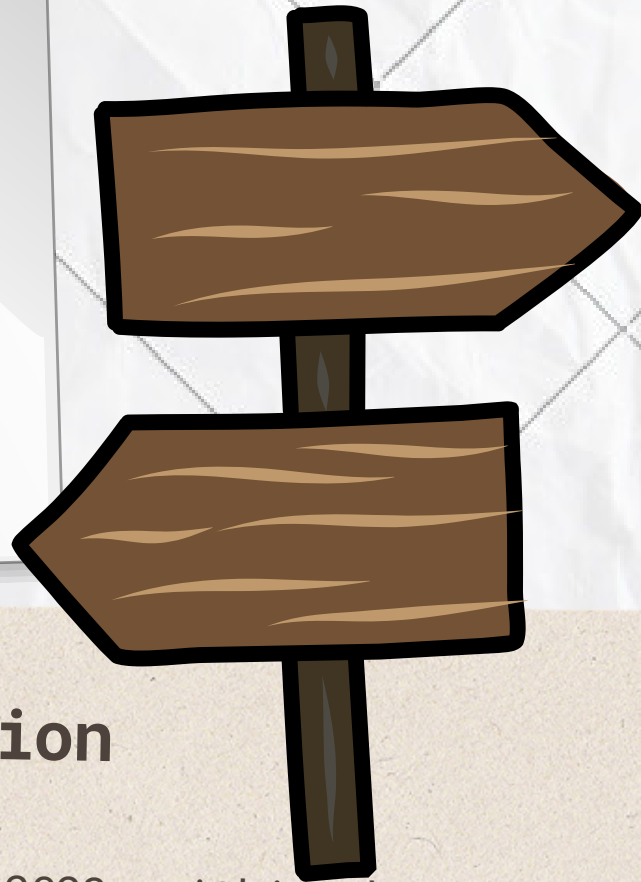
INDUSTRIAL ENGINEERING

Working at IGU Faculty of Engineering and Architecture, Department of Industrial Engineering, Assist Prof. Dr. Didem Yılmaz, on September 25; introduced our department laboratory and university to high school students. Assist Prof. Dr. Didem Yılmaz who shared the meaning and duties of Industrial Engineering, the curriculum of the Department, laboratory and physical facilities, and our educational goals and principles with high school students.



CIVIL ENGINEERING

- Res. Assist. Asena Pınar ÖZER has joined to Civil Engineering Academic Staff.



• Orientation

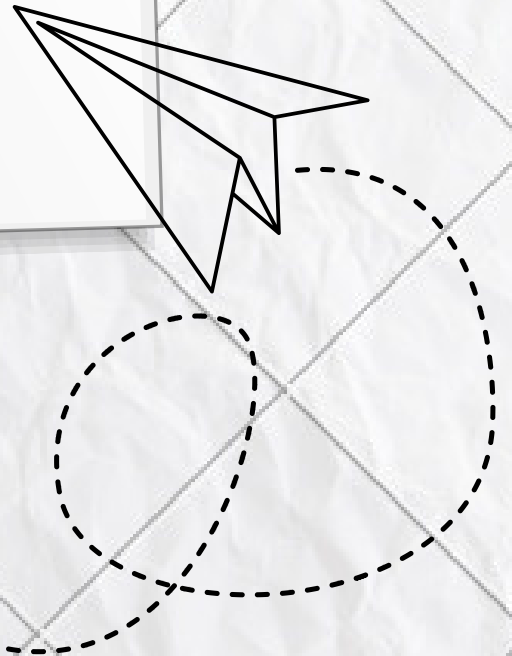
On September 25, 2023, within the scope of the orientation program held at IGU Mehmet Akif Ersoy Conference Hall, our head of department Assist. Prof. Dr. Ahmad Reshad NOORI came together with the newly enrolled students.

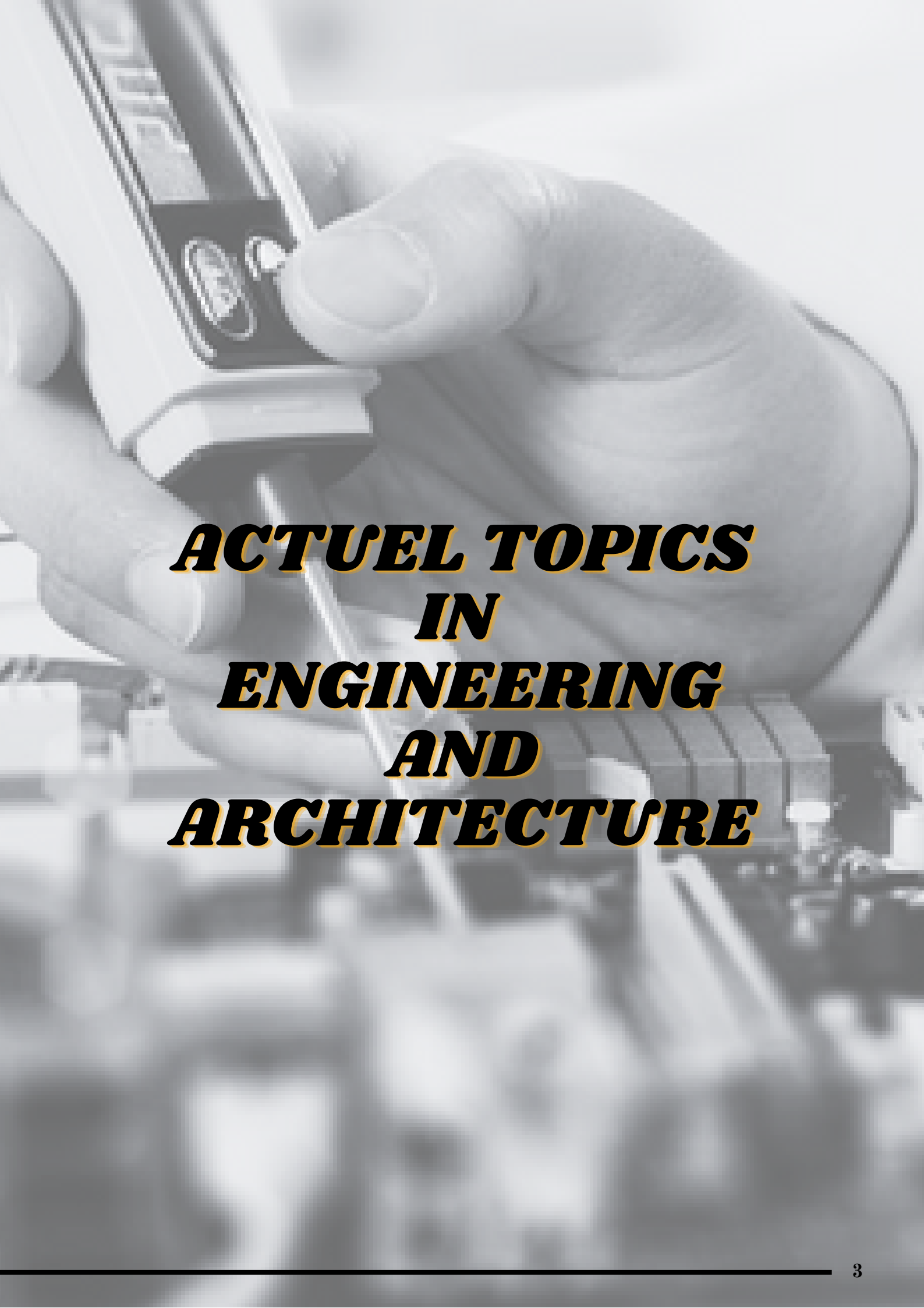
Aeronautical Engineering

- Two promising academicians, Muhammed Talha Aşkar and Hüseyin Furkan Çelik

have joined Istanbul Gelisim University's Department of Aeronautical Engineering as research assistants. These two talented individuals bring their expertise and experience to the department,

and we wish them every success in their new roles.



A grayscale background image showing a close-up of a hand holding a pen, poised to write on a document. The hand is in the foreground, and the document is slightly out of focus. The overall tone is professional and technical.

***ACTUEL TOPICS
IN
ENGINEERING
AND
ARCHITECTURE***

INDUSTRIAL ENGINEERING: THE KEY TO FUTURE EFFICIENCY AND SUSTAINABILITY



Industrial engineering plays a fundamental role in increasing the efficiency of businesses, production facilities, service providers and public organizations and using resources more effectively. Recent developments in this field are shaping how industrial engineers can do their jobs better and meet the significant challenges they will face in the future.

1. Digital Transformation and Industry 4.0

Digital transformation has become a trend that is radically changing the work of industrial engineers. This transformation, also called Industry 4.0, refers to the coming together of technologies such as automation, big data analytics, artificial intelligence and the internet of things (IoT). These technologies enable products and services to become more customized while making production processes more efficient. By following this digital transformation, industrial engineers must develop new methods to make production facilities smart, solve problems using data analytics and optimize business processes.



INDUSTRIAL ENGINEERING: THE KEY TO FUTURE EFFICIENCY AND SUSTAINABILITY



2. Sustainability and Green Industrial Engineering

Sustainability is another increasingly important area of industrial engineering. Environmental problems such as climate change and depletion of natural resources require businesses to adopt more sustainable production methods.

Green industrial engineering works on reducing waste, increasing energy efficiency and minimizing environmental impacts. This field helps industrial engineers integrate environmental factors into business processes and achieve sustainability goals.

3. Supply Chain Management and Global Logistics

With the increase in global trade, supply chain management and logistics have become an important component of industrial engineering. Events such as COVID-19 have once again shown how critical supply chain management is.

Industrial engineers work on making supply chains more resilient, optimizing inventory management and increasing efficiency in global logistics.



INDUSTRIAL ENGINEERING: THE KEY TO FUTURE EFFICIENCY AND SUSTAINABILITY



4. Occupational Health and Safety

Occupational health and safety is a critical issue that industrial engineers must consider. Industrial engineers must play a guiding role in order to ensure the safety of employees, reduce risks in the workplace and prevent occupational accidents.

While current industrial engineering includes the subjects mentioned above, it also requires strictly following the basic principles of this field.

Industrial engineers must consider and take leadership on how to integrate technological innovations and sustainability efforts for businesses. This way, they will be prepared to pursue success in the future business world.

COMPUTER ENGINEERING



Dear Computer Engineering Students,

Welcome! It is a great honor and pleasure to warmly welcome you to the new academic year and to the Department of Computer Engineering. This is a field where technology and science intersect, pushing the boundaries of creativity and innovation. And now, you will be a part of this exciting journey.

Computer Engineering is not just about writing code or designing hardware; it's also about **analyzing problems**, upholding **ethical values**, and creating **sustainable solutions**. We offer a comprehensive educational program to nurture our students into individuals with this broad vision. We provide courses, labs, and projects that will equip our students in areas such as **artificial intelligence**, **cyber security**, and **data science**.

Throughout your educational journey, many opportunities will be offered to you.

Internships, research projects, and collaboration with industry will support your professional and academic development. Remember, your educational journey continues not just in the classroom but also beyond it. Don't forget that you are in an environment where you can best express yourself by actively participating and taking responsibility.

Lastly, I want you to know that our door is always open. When you seek support or guidance on any academic or personal matter, please feel free to reach out to us. Remember, your success is also the success of our department and our university.

I wish each and every one of you success, happiness, and health in the new academic year.

Sincerely,

Prof. Dr. Abdulsamet Haşiloğlu

Head of the Department of Computer Engineering

SOFTWARE ENGINEERING



Dear Software Engineering Students,

Welcome to the new academic year! It is with great enthusiasm that we welcome you to our Software Engineering department, where technology meets innovation and creativity. A multitude of opportunities, engaging courses, and unforgettable experiences await you here.

Software Engineering is not limited to just writing code. It encompasses a myriad of facets including **social responsibility, ethical values, teamwork, and lifelong learning**. Our aim as a department is to groom you into engineers who can adapt to evolving technologies, think critically, and uphold ethical standards.

Throughout your academic journey, you will have the opportunity to specialize in various fields such as **artificial intelligence, data analytics, and mobile app development**. Research projects, internships, and competitions will offer you both theoretical and practical insights, helping you connect with the industry.

In addition to your educational pursuits, you will have the chance to engage in social activities such as student clubs, events, and seminars. Remember, an academic staff and support mechanism are here to stand with you in every success and challenge.

We are delighted to be a part of your educational journey and our doors are always open to you; feel free to reach out to us for any academic or personal concerns.

Wishing you a year full of health, happiness, and success.

Sincerely,

Dr. Serkan GÖNEN

Head of Software Engineering Department

INTERVIEW

ASSISTANT PROFESSOR UMUT HULUSİ İNAN JOINED THE ACADEMIC STAFF OF INDUSTRIAL ENGINEERING. WE RECEIVED THE OPINIONS OF ASSISTANT PROFESSOR UMUT HULUSİ İNAN ABOUT HER ACADEMIC CAREER AND HER WORKING AREA



- **Hello, can you tell us about yourself and your academic background?**

I received a bachelor's degree from ITU Industrial Engineering Department in 1999. While I was studying for my master's degree at Kocaeli University Department of Industrial Engineering between 1999-2001, I also worked as a research assistant. In 2008, I completed my doctoral study at Yıldız Technical University, Department of Industrial Engineering. In parallel with my academic studies, I have provided consultancy services to more than 50 companies in the fields of strategic management, SME and family business management, quality management, lean production, process management and management information systems since 1999. I also worked as a professional manager for a while in my career. I will continue my academic studies at Istanbul Gelisim University, Department of Industrial Engineering as of Fall 2023.



INTERVIEW

ASSISTANT PROFESSOR UMUT HULUSİ İNAN JOINED THE ACADEMIC STAFF OF INDUSTRIAL ENGINEERING. WE RECEIVED THE OPINIONS OF ASSISTANT PROFESSOR UMUT HULUSİ İNAN ABOUT HER ACADEMIC CAREER AND HER WORKING AREA

- **Can you tell us about your area of study and current developments in your area?**

My areas of expertise include Lean Manufacturing, SME and Family Business Management and Institutionalization, Management Information Systems, Human Resources Management and Performance Management Systems. I have published in internationally respected journals in the fields of quality, human resources and occupational health and safety. Additionally, I am a member of the American Quality Association and the Chamber of Mechanical Engineers.



- **What are your thoughts on the Department of Industrial Engineering at IGU? What advice would you give to our students?**

IGU Industrial Engineering Department prepares young industrial engineer candidates for the future with its experienced and dynamic staff, strong infrastructure and laboratory facilities, and a curriculum appropriate to current technological developments and the needs of the industry.

My advice to young colleague candidates:

- First of all, they should be able to become world citizens. To achieve this, they must first solve the foreign language problem.
- They should be able to adapt to differences and different cultures and improve their communication skills.
- They should read a lot on many subjects, both professional and cultural.



INTERVIEW

WE TOOK RES. ASSIST. ASENA PINAR ÖZER'S OPINION ABOUT HIS ACADEMIC CAREER AND STUDY AREA.



Hi, can you tell us about yourself and your academic background?

“I am Asena Pinar Özer. I was born in 1999 Hatay/Antakya. I graduated from Hatay Fen Lisesi and I enrolled in 2017 to İstanbul Gelişim University and graduated from there in 2022. I started the MSc Mechanic program at Yıldız Technical University. I have been working as a research assistant at Gelişim University since August 2023.”

• Can you tell us about your field of study and current developments in your field?

“I published an abstract during my bachelors years which is about sandwich steel domes and I am studying about numerical methods, functionally graded materials and their structural behaviours. In my MSc thesis I am studying about functionally graded porous sandwich domes analysis in Ansys program. Nowadays structural analysis programs are much more close to accurate results compare to real results.”

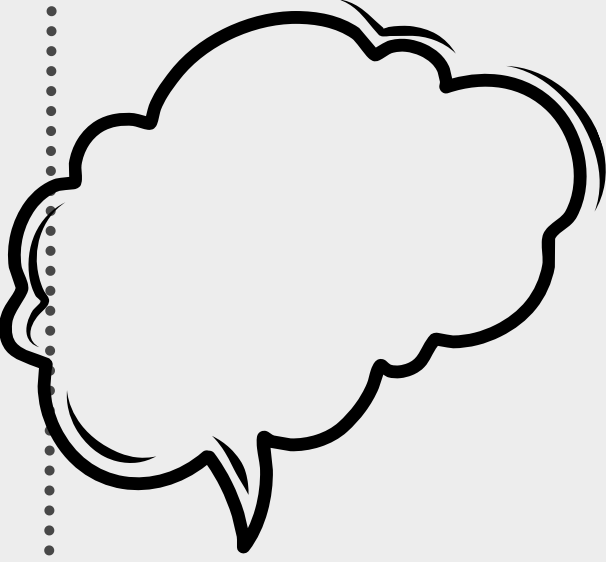
• What are your thoughts on IGU Civil Engineering Department?

“Civil engineering, as name is say, building a civilization and their needs. Sheltering is the first need of human-being and civil engineering is the most ancient engineering in the world. We need to aware of importance and that is why we take seriously civil engineering department. I graduated İstanbul Gelişim University and I proceed my academic way with this dignity. Also, IGU civil engineering department is developing day by day and has been reach remarkable quality. Graduation certificate has international validation with ABET accreditation.”



INTERVIEW

WE TOOK RES. ASSIST. ASENA PINAR ÖZER'S OPINION ABOUT HIS ACADEMIC CAREER AND STUDY AREA.



- **What advice would you give to our students?**

“Civil engineering not just about building some structures and engineering not just about Math. University is a chance of expand your perspective and add value of your life. Observing the nature, taking inspiration from there and integrate into civil engineering is all we need.”

Istanbul Gelisim University Makes a Mark with Jet Drone Project, Secures First Place in TUSAŞ Competition

In Turkey, the production of national technology has expanded to the relevant units of universities. University students are making significant contributions to the country's domestic and national defense industry by designing their own rockets and drones. Istanbul Gelisim University's Technology Transfer Office has designed a jet drone, resembling a combat aircraft, with remarkable features.



Istanbul Gelisim University Makes a Mark with Jet Drone Project, Secures First Place in TUSAŞ Competition



Yahya Kemal Kıran, Director of Istanbul Gelisim University's Technology Transfer Office, stated:

"We've been working on this idea for approximately a year. We initially conceptualized the Jet UAV design. Subsequently, significant time was spent on both the body design and motor configuration. We became aware of TUSAŞ's hangar innovation campus competition. We didn't have a goal to win awards there; we simply aimed to present our work in the best possible way. And we achieved a great success."

In the future, we want to continue collaborating with TUSAŞ. I believe that we will be allowed to utilize the resources available there. With the assistance and support of TUSAŞ, we will work towards producing a prototype.

This project will primarily serve in the defense industry. Additionally, it can be transformed into a product for organizations such as AFAD and the Ministry of Forestry.

International agreements are also encouraging the reduction of carbon use in aircraft. By reducing carbon emissions, we will realize military and tactical advantages. Reducing carbon dioxide or avoiding the use of internal combustion engines may also mean avoiding radar detection.

Istanbul Gelisim University Makes a Mark with Jet Drone Project, Secures First Place in TUSAŞ Competition



The GÖKTURAN team, responsible for creating the Jet Drone, elaborated on the project:

Research Assistant Hüseyin Furkan Çelik said, "This project began with an idea put forward at the 2022 Air Taxi Congress by our director, Yahya Kemal Kıran. There are certain disadvantages in drone systems, as well as in fixed-wing aircraft. We aimed to eliminate the disadvantages of these two systems and create an unmanned aerial vehicle that can be used in various fields."

Enes Akay, responsible for electronics and software in the team, stated, "This product is the result of day-and-night work. We all put in great effort. Currently, we are producing new prototypes. Structural tests of the available motors are ongoing, and hopefully, we will see this technology in our skies in the near future."

Muhammed İbrahim Taşkiran, responsible for structural aspects, added, "We are currently conducting motor tests and structural tests on the body." This project represents a significant step for Turkey in the field of national technology and appears to be a substantial contribution to the country's defense industry.

THE FRENCH COMPANY PRODUCED THE WORLD'S FIRST ELECTRIC BICYCLE THAT DOES NOT REQUIRE BATTERIES. FRENCH ENTREPRENEUR ADRIEN LELIEVRE USES A GROUNDBREAKING BRAND NEW SYSTEM CALLED SUPERCAPACITOR TO STORE ENERGY IN THE E-BIKE CALLED PI-POP. THIS SYSTEM DOES NOT CONTAIN HEAVY METALS LIKE TRADITIONAL LITHIUM BATTERIES.

In recent years, the increase in energy prices has led many people living in big cities to turn to alternatives such as bicycles or public transportation in their daily lives.

Especially battery-powered personal vehicles such as bicycles or scooters have become very common in recent years.

Just like electric cars, the biggest problems of such vehicles are range, charging time and of course heavy metal and toxic substances contained in the batteries. The fact that the lithium-ion batteries frequently used in these devices are largely non-recyclable is another problem that makes companies and people think about the climate crisis.

However, French entrepreneur Adrien Lelievre uses an energy storage system called supercapacitor in the 'new generation electric bicycle' he calls Pi-Pop, and this system works differently than the lithium-ion batteries we know.



It is important for the power supply system called supercapacitor to have a sustainable structure for the climate crisis.



The French company produced the world's first electric bicycle that does not require batteries.

• Supercapacitor powered by electrostatics instead of battery

Adrien Lelievre, a French engineer and entrepreneur who studied electrical and electronics, is the founder and top manager of the start-up company called STEE.

The power supply that Lelievre invented and called "supercapacitor" has a different function than a traditional battery.

First of all, the supercapacitor does not need electricity and uses the electrostatic (static charge) method to store energy and power.

In other words, it works by converting the kinetic energy generated after movement and "storing it through a slow-moving load".

In contrast, lithium batteries are plugged into a wall socket, use electrical energy and store it in the form of a "chemical reaction".

Other important features of the supercapacitor are its ability to store and release energy very quickly when needed.

Pi-Pop uses power storage systems called super capacitors instead of traditional lithium batteries.

• It stores energy when braking and can climb uphill up to 50 meters high.

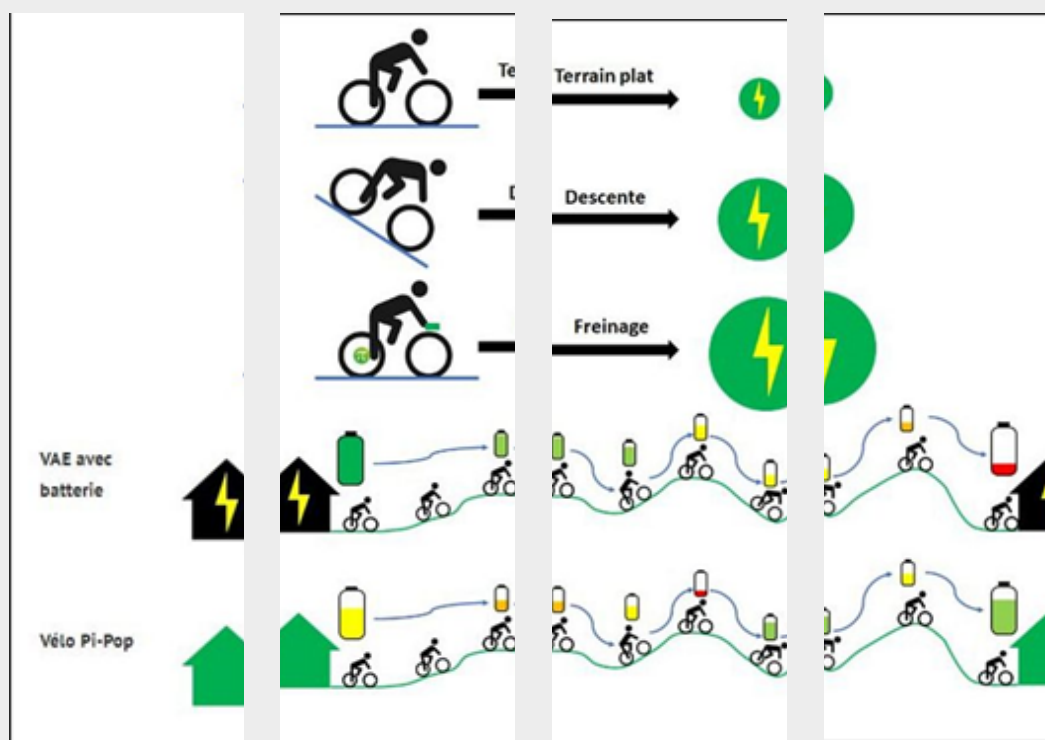
The patented e-bike called Bi-Pop also, unlike many of its counterparts, can transfer the kinetic energy lost when braking to the supercapacitor on it. In this way, energy savings can be achieved at the highest level.

According to Lelievre, the inventor of the Pi-Pop bicycle, who spoke to Euronews Next, supercapacitor technology is actually a storage mechanism that allows the person to use the kinetic energy he produces while cycling for the acceleration of the bicycle.

Lelievre states that if the user charges the bike while riding on a flat surface beforehand, it will be enough to provide the energy needed to climb a high slope of 50 meters. This feature makes the new generation e-bike Pi-Pop suitable for approximately 80 percent of European cities.

Supercapacitor technology or concept is not actually a new idea in itself. Supercapacitor power storage devices were first produced in the late 1970s. Today, it is already used in photovoltaic systems (such as solar panels), digital cameras and some hybrid or electric vehicles to increase function and acceleration performance. The biggest innovation made by French engineer and entrepreneur Adrien Lelievre was adapting this technology to bicycle mechanics.

The working logic of Pi-Pop is stated in the image. The power supply, which charges on flat roads, supports the driver on hilly areas.



- **Supercapacitor power supplies last 3 times longer**

According to Lelievre, the 20-pound Pi-Pop e-bike is a symbol of "taking action."

"It always means wanting more, going faster, more energy... It's a dead end."

No rare metals or non-recyclable materials are used in the production of the bike's 'power system' as the supercapacitors are made from carbon, conductive polymer (plastic), aluminum foil and pulp (materials that are already recycled).

There is no need to wait for the bike to charge; This is another advantage compared to classic e-bikes. STEE company also says that the life of the supercapacitor is about 10 to 15 years. Compared to lithium batteries, which have a lifespan of approximately 5-6 years, it seems that this period will increase competition in the market.





***ACADEMIC AND
SCIENTIFIC
ACTIVITIES***

CIVIL ENGINEERING

On September 25, 2023, within the scope of the orientation program held at IGU Mehmet Akif Ersoy Conference Hall, our head of department Assist. Prof. Dr. Ahmad Reshad NOORI came together with the newly enrolled students.

In the "Graduated IGU Alumni" section of the program, our department member Res. Assist. Asena Pınar ÖZER made a speech about her student background and academic life to the new students who joined us.



KARIYER MERKEZİ

ARCHITECTURE

· Book Publishing by Assistant Professor O. Paul Agboola

Assist. Prof. Agboola, faculty member of the Department of Architecture (English), has published his book titled "Traditional Market Square (Oja) in Nigeria: Understanding its Rurality, Sense of Community, and Significance".

Access Link: <https://www.morebooks.shop/shop-ui/shop/book-launch-offer/5b630c356fe47a42468b3600d0b8f6c194de99fb>