SABANCI UNIVERSITY

Faculty of Engineering and Natural Sciences

ANNUAL REPORT
2020-2021
ACADEMIC YEAR

Sabancı Üniversitesı | FACULTY OF ENGINEERING AND NATURAL SCIENCES

Dean's Message

It is my great pleasure to present the new issue of the FENS Annual Report for the academic year of 2020-2021. In this short note of introduction, I will try to summarize the activities and point out some of the highlights. For more details, I encourage you to continue reading the following pages. I would also like to take this opportunity to extend my gratitude for the team that worked hard to compile and organize all the information in this annual report.

Despite the fact that we were subject to unprecedented and extremely challenging issues due to the COVID-19 pandemic, both of the 2020-2021 Fall and Spring terms were successfully completed. Our dedication to high quality and creative teaching practices, synchronous and interactive lecture hours spent with students, high tech infrastructure of our classrooms and good utilization of them not only enabled us to go through those hard times without any setback, but also made us learn from the experience. The statistics indicate that a total of 2504 students were enrolled in all FENS undergraduate programs, while the numbers of master and doctoral students were 290 and 305, respectively. Also, 626 undergraduate, 82 master, and 36 doctoral students graduated from FENS programs in the academic year of 2020-2021 (see pages 4-6). This time, we also included the details of all PhD dissertations on pages 7-10.

I am happy to announce our new Double PhD program in Materials Science and Nano Engineering Program with the Jozef Stefan Institute (the largest research institute in Slovenia), which aims enhancing research collaboration between the two institutes and cultivating high-quality PhD graduates (page 33).

I would like to welcome eight new faculty members that joined our ranks (pages 11-14) in this academic year. Albert Erkip was appointed as Emeritus faculty member (page 38); we would like to thank him for his continued contribution to our university. We also congratulate Hüsnü Yenigün, Esra Erdem who were promoted to full professor and Burcu Saner Okan who was promoted to associate professor(page 15).

Research records of our members are impressive in this academic year as well. Not only our faculty members, but also post-graduate researchers and our students contributed to this endeavor by publishing at high impact journals and presenting their research outputs in other prestigious avenues. In the year of 2020, FENS produced a total of 308 articles, 62.1% and 32,8% of which are published in journals in the category of Q1 and Top 10% Journal Quartile by CiteScore Percentile, respectively. The 2020 publications, 113 of which are with co-authors from Europe were cited 1134 times (page 16).

We observe that FENS members are exceptionally active in writing project proposals and securing grants to support their research. The FENS research portfolio includes 85 projects supported by TUBITAK with a total budget of 79.3 million TL; 8 projects by EU with a total budget of 105.3 million TL; 9 projects by Non-Governmental Organizations/University/Other with a total budget of 12.9 million TL; and finally, 54 projects supported by industry with a total budget of 46.7 million TL; all as of June 2021 (page 20). Two examples of our high impact projects are featured in the 'Our Stories' section on pages 21-26. In addition, we are very proud to mention that a project protocol was signed with the Turkish Space Agency (TUA) (page 33). We congratulate and thank all our faculty members and wish further success in their future project proposals.

Our faculty members won prestigious national and international awards and recognitions including Science Academy BAGEP Award (Nurdagül Anbar), METU Mustafa Parlar Award (Burak Kocuk and Kağan Kurşungöz), μFIP Prominent Researcher Award (Ali Koşar), Amazon Award (Süha Orhun Mutluergil) (page 31). In addition, Albert Levi and Ezgi Karabulut Türkseven received 2021 Teaching Awards (page 36). I enthusiastically congratulate them.

Similarly, our undergraduate and graduate students as well as our alumni received, national, international and internal awards for their academic achievements (pages 32 and 35-36). We also note that our alumni joined the ranks of academia and for this we are very proud of them (pages 29-30).

Finally, special congratulations go to the recipients of Dr. Gürsel Sönmez Research Award (page 37).

Lastly, our flagship program for senior (graduation) projects "Industry Focused Projects (Sanayi Odaklı Projeler, SOP)" entered its sixth year. 54 companies have participated in the program as project stakeholders with a total of 281 senior students having worked in 81 projects since its inception in 2016 (pages 27-28).

Our maxim has been, is and will be "creating and developing together", as all these achievements are due to us, all members of FENS. Therefore, I would like to invite all of you to join me in the celebration of our achievements, only a part of which is documented in this report.
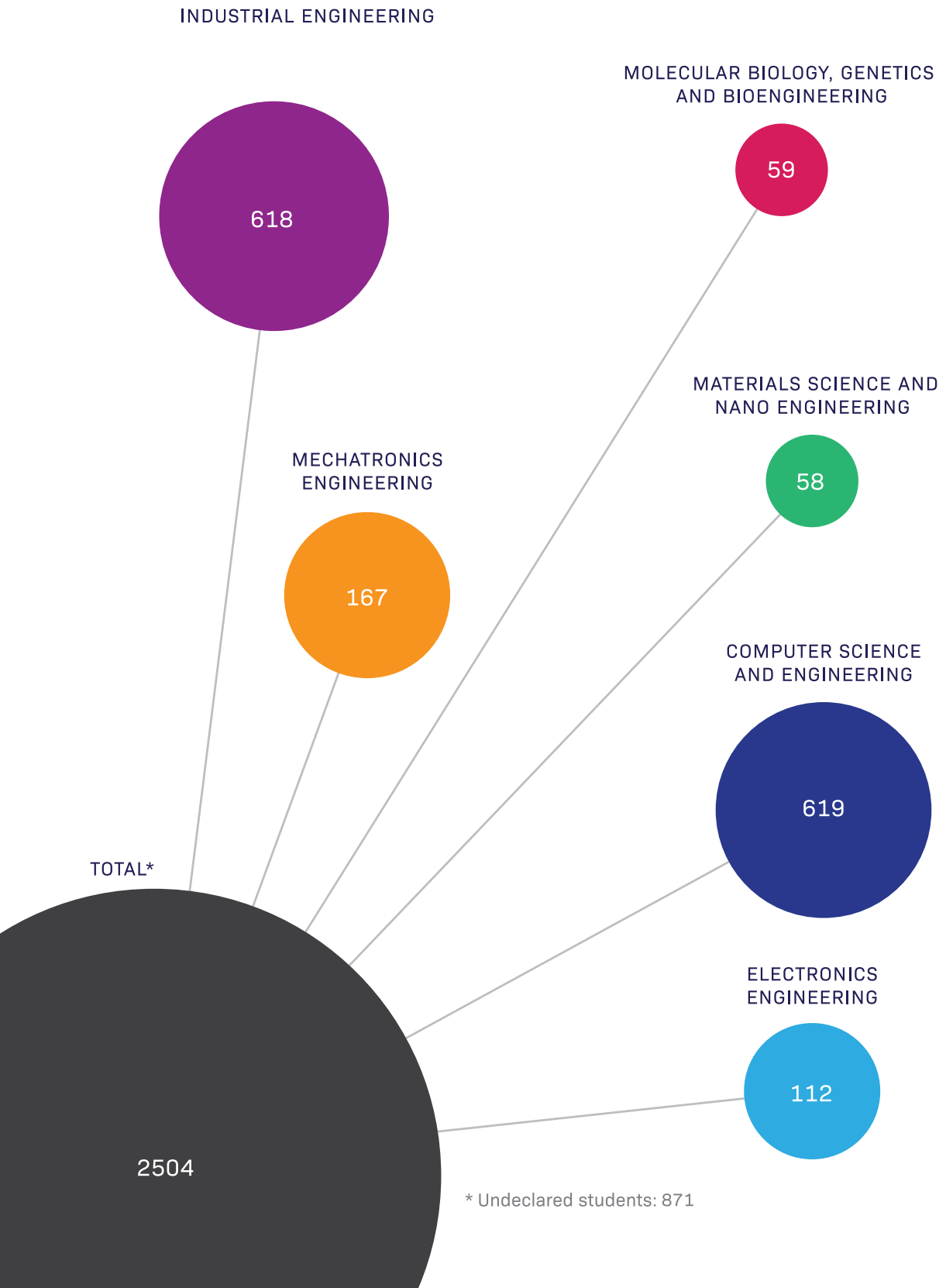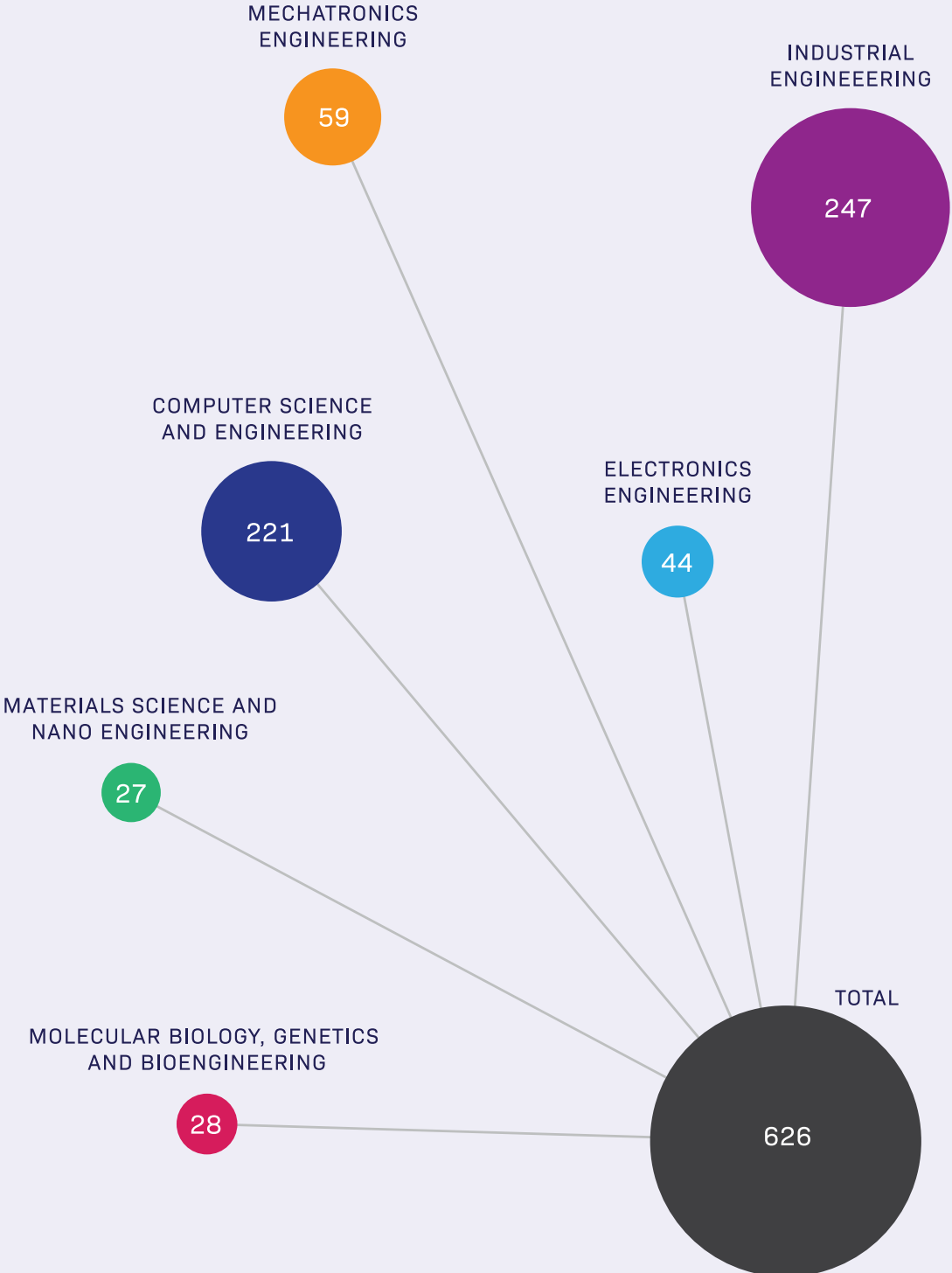
Erkay Savaş
Dean
Faculty of Engineering and Natural Sciences

Student Numbers

Undergraduate Student Enrollment 2020 –2021

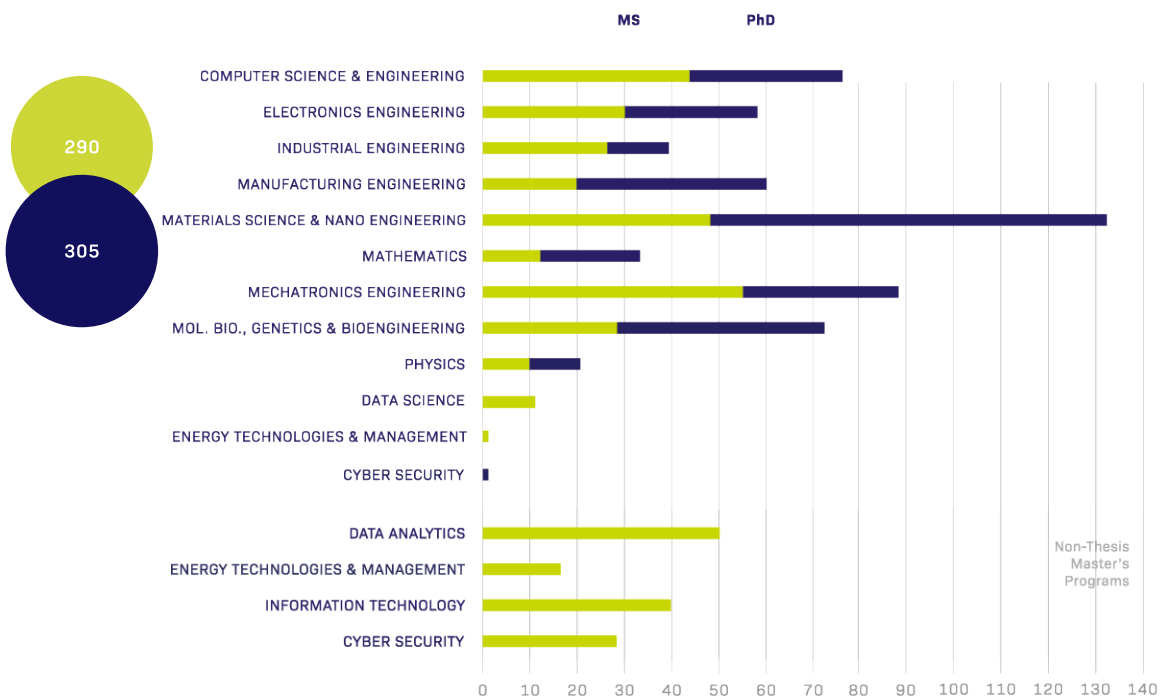INDUSTRIAL ENGINEERING

618

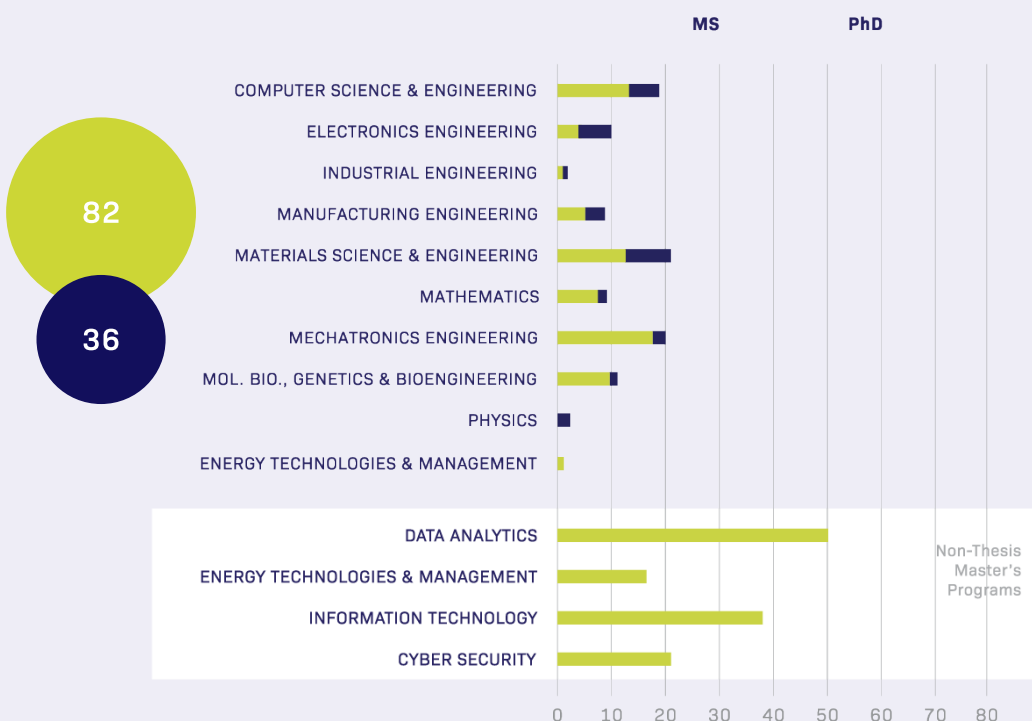MOLECULAR BIOLOGY, GENETICS AND BIOENGINEERING

59

MATERIALS SCIENCE AND NANO ENGINEERING

58

MECHATRONICS ENGINEERING

167

COMPUTER SCIENCE AND ENGINEERING

619

TOTAL*

2504

ELECTRONICS ENGINEERING

112

* Undeclared students: 871

Undergraduate Student Alumni 2020–2021

MECHATRONICS ENGINEERING

59

INDUSTRIAL ENGINEEERING

247

COMPUTER SCIENCE AND ENGINEERING

221

ELECTRONICS ENGINEERING

44

MATERIALS SCIENCE AND NANO ENGINEERING

27

MOLECULAR BIOLOGY, GENETICS AND BIOENGINEERING

28

TOTAL

626

Student Numbers

Graduate Student Enrollment 2020–2021

MS   PhD

290

305

COMPUTER SCIENCE & ENGINEERING
ELECTRONICS ENGINEERING
INDUSTRIAL ENGINEERING
MANUFACTURING ENGINEERING
MATERIALS SCIENCE & NANO ENGINEERING
MATHEMATICS
MECHATRONICS ENGINEERING
MOL. BIO., GENETICS & BIOENGINEERING
PHYSICS
DATA SCIENCE
ENERGY TECHNOLOGIES & MANAGEMENT
CYBER SECURITY

DATA ANALYTICS
ENERGY TECHNOLOGIES & MANAGEMENT
INFORMATION TECHNOLOGY
CYBER SECURITY

Non-Thesis Master's Programs

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

Graduate Student Alumni 2020–2021

MS   PhD

82

36

COMPUTER SCIENCE & ENGINEERING
ELECTRONICS ENGINEERING
INDUSTRIAL ENGINEERING
MANUFACTURING ENGINEERING
MATERIALS SCIENCE & ENGINEERING
MATHEMATICS
MECHATRONICS ENGINEERING
MOL. BIO., GENETICS & BIOENGINEERING
PHYSICS
ENERGY TECHNOLOGIES & MANAGEMENT

DATA ANALYTICS
ENERGY TECHNOLOGIES & MANAGEMENT
INFORMATION TECHNOLOGY
CYBER SECURITY

Non-Thesis Master's Programs

0 10 20 30 40 50 60 70 80

PhD Dissertations

NAME/ SURNAME	PROGRAM	THESIS TITLE	TERM	THESİS ADVİSOR
ABDURRAHMAN BURAK	ELECTRONICS ENGINEERING	7-BIT PHASE SHIFTER USING SIGE BICMOS TECHNOLOGY FOR X-BAND PHASED ARRAY APPLICATIONS	2020-2021 SPRING	YAŞAR GÜRBÜZ
AHMET CAN MERT	ELECTRONICS ENGINEERING	EFFICIENT HARDWARE IMPLEMENTATIONS FOR LATTICE-BASED CRYPTOGRAPHY PRIMITIVES	2020-2021 SPRING	ERDİNÇ ÖZTÜRK
AHMET MERT BOZKURT	PHYSICS	QUANTUM THERMODYNAMICS IN TOPOLOGICAL SYSTEMS	2020-2021 SPRING	İNANÇ ADAGİDELİ
AKHTAR SAEED	ELECTRONICS ENGINEERING	TERAHERTZ-BAND COMMUNICATIONS AT VARIOUS ATMOSPHERIC ALTITUDES	2020-2021 SPRING	ÖZGÜR GÜRBÜZ
ALİ ASGHARPOUR	PHYSICS	NANOELECTRONICS AND SPINTRONICS WITH DIRAC MATERIALS: SPIN PROPERTIES OF GRAPHENE, TOPOLOGICAL INSULATORS, AND WEYL SEMIMETALS	2020-2021 FALL	İNANÇ ADAGİDELİ
ARAZ SHEİBANİ AGHDAM	MATERIALS SCIENCE AND ENGINEERING	DESIGN AND ENGINEERING OF SLIPPERY LIQUID-INFUSED POROUS SURFACES BY LBL TECHNIQUE FOR ICEPHOBIC SURFACES AND HYDRODYNAMIC CAVITATION	2020-2021 FALL	FEVZİ ÇAKMAK CEBECİ
ARTRİM KJAMİLJİ	COMPUTER SCIENCE AND ENGINEERING	BLOCKCHAIN DRIVEN SECURE AND PRIVATE MACHINE LEARNING ALGORITHMS FOR POST QUANTUM 5G/6G ENABLED INDUSTRIAL LOT WITH APPLICATIONS TO CYBER SECURITY AND HEALTH	2020-2021 SPRING	ALBERT LEVİ
BATURAY ÖZGÜRÜN	ELECTRONICS ENGINEERING	COMPRESSED SENSING AND LEARNING-BASED METHODS FOR SUPER-RESOLUTION STRUCTURED ILLUMINATION MICROSCOPY	2020-2021 FALL	MÜJDAT ÇETİN
BUSE BULUT KÖPÜKLÜ	MATERIALS SCIENCE AND NANO ENGINEERING	NEW GENERATION THREE-DIMENSIONAL AND NANOSTRUCTURED HIGH CAPACITY LI-ION BATTERY ELECTRODES	2020-2021 SPRING	SELMİYE ALKAN GÜRSEL
CÜNEYT ERDİNÇ TAŞ	MATERIALS SCIENCE AND ENGINEERING	FUNCTIONAL MONOMERS AND NANOPARTICLES FOR HIGH PERFORMANCE POLYMERIC FILMS AND MEMBRANES	2020-2021 SPRING	HAYRİYE ÜNAL
DYAR KHALİS BİLAL	MECHATRONICS ENGINEERING	VISION BASED LEARNING ALGHORITHMS FOR STRUCTURAL HEALTH MONITORING AND MACHINING ACCURACY IMPROVEMENT OF INDUSTRIAL ROBOTS	2020-2021 SPRING	MUSTAFA ÜNEL

NAME/ SURNAME	PROGRAM	THESIS TITLE	TERM	THESİS ADVİSOR
ERDEM GÖRGÜN	MECHATRONICS ENGINEERING	LEAKAGE PERFORMANCE EVALUATION OF CLOTH SEAL	2020-2021 FALL	MAHMUT FARUK AKŞİT
ETHEM UTKU AKTAŞ	COMPUTER SCIENCE AND ENGINEERING	BUG TRIAGE IN AN INDUSTRIAL CONTEXT	2020-2021 SPRING	CEMAL YILMAZ
FARAZ TEHRANİZADEH	MANUFACTURING ENGINEERING	DESIGN AND OPTIMIZATION OF ENDMILLS WITH SPECIAL GEOMETRIES FOR HIGH PRODUCTIVITY AND THEIR USE IN DIFFERENT APPLICATIONS	2020-2021 SPRING	ERHAN BUDAK
FARZANEH JALALYPOUR	MOLECULAR BIOLOGY, GENETICS AND BIOENGINEERING	DEVELOPING NEW APPLICATIONS FOR PRS METHOD TO STUDY CONFORMATIONAL MODULATION OF GLOBULAR PROTEINS	2020-2021 FALL	CANAN ATILGAN
GÖKHAN GÖKTÜRK	COMPUTER SCIENCE AND ENGINEERING	ULTRA-FAST INFLUENCE MAXIMIZATION WITH FUSED SAMPLING AND SKETCHES	2020-2021 SPRING	KAMER KAYA
GÜLİZAR GÜNAY	MATHEMATICS	GEOMETRIC AND COMBINATORIAL ASPECTS OF NORMAL RATIONAL CURVES IN PG(2,Q) AND PG(3,Q)	2020-2021 SPRING	MİCHEL LAVRAUW
HALİME ÖMRÜUZUN SEYREK	MATHEMATICS	CONSTRUCTION OF EVIDENTLY POSITIVE SERIES AND AN ALTERNATIVE CONSTRUCTION FOR A FAMILY OF PARTITION GENERATING FUNCTIONS DUE TO KANADE AND RUSSELL	2020-2021 SPRING	KAĞAN KURŞUNGÖZ
HAMİD JAMSHİDİ	MANUFACTURING ENGINEERING	ANALYTICAL MODELING OF GRINDING PROCESS FOR IMPROVED PRODUCTIVITY, PART QUALITY AND MATERIAL CHARACTERISTICS	2020-2021 SPRING	ERHAN BUDAK
HANEFİ MERCAN	COMPUTER SCIENCE AND ENGINEERING	UNIFIED COMBINATORIAL INTERACTION TESTING	2020-2021 SPRING	CEMAL YILMAZ
ISA EMAMİ TABRİZİ	MATERIALS SCIENCE AND ENGINEERING	UNDERSTANDING FAILURE MECHANISMS IN HYBRID FIBER REINFORCED LAMINATES THROUGH THE COMBINED USAGE OF DIC, AE, THERMOGRAPHY AND OPTIC BASED SYSTEMS	2020-2021 FALL	MEHMET YILDIZ

NAME/ SURNAME	PROGRAM	THESIS TITLE	TERM	THESİS ADVİSOR
İPEK BİLGE	MOLECULAR BIOLOGY, GENETICS AND BIOENGINEERING	IDENTIFICATION OF POWDERY MILDEW DISEASE AND GENETIC IMPROVEMENTS IN HAZELNUT	2020-2021 FALL	SELİM ÇETİNER
KADRİYE KAHRAMAN	MOLECULAR BIOLOGY, GENETICS AND BIOENGINEERING	HAZELNUT GENOME AND TRANSCRIPTOME ANALYSIS UNDER BIOTIC AND ABIOTIC STRESS	2020-2021 FALL	LEVENT ÖZTÜRK
MALEK EBADİ	INDUSTRIAL ENGINEERING	OPTIMAL POLICIES FOR CERVICAL CANCER PREVENTION	2020-2021 SPRING	HANS FRENK
MİKAİL YILAN	ELECTRONICS ENGINEERING	NONLINEAR DIGITAL SELF-INTERFERENCE CANCELLATION FOR FULL DUPLEX COMMUNICATION	2020-2021 SPRING	ÖZGÜR GÜRBÜZ
MİRMEYSAM RAFİEİ ANAMAGH	MECHATRONICS ENGINEERING	DEVELOPMENT OF A NEW SPECTRAL MODELLING APPROACH TO INVESTIGATE THE DYNAMIC AND BUCKLING BEHAVIOR OF COMPOSITE STRUCTURES	2020-2021 SPRING	BEKİR BEDİZ
MUHAMMED BURAK ALVER	ELECTRONICS ENGINEERING	SYNTHETIC APERTURE RADAR IMAGING WITH DEEP NEURAL NETWORKS	2020-2021 FALL	MÜJDAT ÇETİN
OMİD MOHAMMAD MORADİ	MATERIALS SCIENCE AND NANO ENGINEERING	FABRICATION OF FLUOROPOLYMER THIN FILMS USING INITIATED CHEMICAL VAPOR DEPOSITION (ICVD) METHOD	2020-2021 SPRING	GÖZDE İNCE
RAJA MUHAMMAD AWAİS KHAN	MATERIALS SCIENCE AND NANO ENGINEERING	FAILURE INVESTIGATION OF COMPOSITE MATERIALS USING MULTI-INSTRUMENT EXPERIMENTAL TECHNIQUES AND NUMERICAL METHOD	2020-2021 SPRING	MEHMET YILDIZ
SARA ATİTO ALİ AHMED	COMPUTER SCIENCE AND ENGINEERING	ATTRIBUTE BASED APPOACHES FOR IMAGE UNDERSTANDING	2020-2021 SPRING	AYŞE BERRİN YANIKOĞLU
SEYEDEH FERDOWS AFGHAH	MATERIALS SCIENCE AND ENGINEERING	HYBRID 3D BIOPRINTING OF FUNCTIONALIZED STRUCTURES FOR TISSUE ENGINEERING	2020-2021 FALL	BAHATTİN KOÇ

NAME/ SURNAME	PROGRAM	THESIS TITLE	TERM	THESİS ADVİSOR
SİNEM SARIKAYA	MOLECULAR BIOLOGY, GENETICS AND BIOENGINEERING	INVESTIGATION OF LINKS AND CROSSTALK BETWEEN AUTOPHAGY AND DNA DAMAGE RESPONSES	2020-2021 SPRING	ÖZLEM KUTLU
SİROUS KHABBAZABKENAR	MATERIALS SCIENCE AND ENGINEERING	INVESTIGATION OF PHASE EVOLUTION DURING CRYSTALLIZATION OF LONG AFTERGLOW STRONTIUM ALUMINATE PHOSPHOR (SR4AL14O25): THE B2O3 EFFECT	2020-2021 FALL	CLEWA OW YANG
TANDAÇ FURKAN GÜÇLÜ	MOLECULAR BIOLOGY, GENETICS AND BIOENGINEERING	MOLECULAR LEVEL UNDERSTANDING OF THE FUNCTIONALITY OF PDZ3 VARIANTS VIA ADVANCED ALL-ATOM SIMULATIONS AND DYNAMIC RESIDUE NETWORK ANALYSES	2020-2021 SPRING	CANAN ATILGAN
WAQAR AHMAD	ELECTRONICS ENGINEERING	EFFICIENTHEVC AND VVC MOTION ESTIMATION HARDWARE	2020-2021 SPRING	İLKER HAMZAOĞLU
ZAHRA BARZEGAR OSGOUEİ	MANUFACTURING ENGINEERING	A NOVEL ANALYTICAL TEMPERATURE MODEL DEVELOPMENT FOR TURNING IN ORTHOGONAL AND OBLIQUE CONDITIONS INCLUDING THE EFFECTS OF ALL THE DEFORMATION ZONES AND TOOL WEAR	2020-2021 SPRING	ERHAN BUDAK

Newcomers

8 new faculty joined FENS to bring the full time total to 119

Alex Lyakhovich

Dr. Alex Lyakhovich's professional work has centered around cancer biology problems Soon after his predoctorate in Hamburg, Germany, he joined the Michigan Cancer Foundation translational medicine program (Prof. Samuel K. Brooks). He worked on DNA repair systems and studying the role of the Rad6 protein in genomic instability (Pharmacia award at the AACR annual meeting). He then split his fellowship between the University of Michigan Med School in Ann Arbor and Rutgers University School of Medicine, NJ. After moving to Europe, Alex worked at the Universidad Autónoma de Barcelona, studying cancer predisposition in rare diseases. His mentor, Professor Sidney Brenner, advised him to join Duke-NUS Graduate Medical School (Singapore/USA), where Alex worked as an assistant professor and faculty and developed his independent research area in mitochondrial biology (Fanconi Anemia Research Foundation Award). Dr. Lyakhovich received the Maria Curie Senior COFUND Fellowship back in Barcelona, where he became a principal investigator and worked in the field of cancer resistance and cancer stem cell metabolism. He also held several joint appointments at other institutions, collaborating with leading scientists in the fields of aging and molecular oncology. In October 2021, Alex joined Sabanci University as a full faculty member and is in the process of establishing his laboratory for the study of mitochondrial dysfunction and disease. He was recently awarded the TÜBİTAK 2232-A International Fellowship for Outstanding Researchers.

Anıl Koyuncu

Anıl Koyuncu is a Faculty Member in the Computer Science and Engineering Program of the Faculty of Engineering and Natural Sciences at Sabanci University (Istanbul). His research interests lie in the general area of software engineering, with particular emphasis on automated program repair. His work draws on data mining, program analysis, and fault localization and aims to improve the automated program repair agenda towards boosting its adaption by practitioners.

Bekir Dizman
(Research and Application Oriented Faculty Member)

Bekir Dizman is currently an Associate Professor of Chemistry/ Polymer Science and Engineering and a full-time Research and Application Oriented Faculty Member at Sabanci University. He has an academic and industrial background. He holds a B.Sc. degree in Chemistry, a B.A. degree in Business Administration from Koc University, Turkey and a Ph.D. degree in Polymer Science and Engineering from The University of Southern Mississippi (USM), USA (2005). After a short postdoctoral research experience at USM (2005-2007), he joined a privately owned pharmaceutical company, Serina Therapeutics, Inc. located in Alabama, USA and has worked there as Senior Scientist and Manager of Polymer Division for 12 years until his return to Turkey in 2018. He joined Sabanci University in 2018 as a researcher and has been working at Sabanci University Integrated Manufacturing Technologies Center of Excellence since then. He has a diverse academic and industrial experience in polymers, materials, and nanotechnology. Prof. Dizman has been working in polymer science and engineering since 1999 and in nanotechnology since 2002. He has been involved in research, development, pilot production, manufacturing, and preclinical and clinical trials. He has a broad knowledge of Good Laboratory Practice (GLP) and current Good Manufacturing Practice (cGMP) standards, technology transfer, auditing and budget preparation. He is the author and co-author of more than twenty peer-reviewed papers/proceedings and three book chapters and co-inventor of twelve patents. He is a partner of a privately held pharmaceutical company.

His research interests include the synthesis of various polymers and investigation of their structure-property-application relationships (functional, water-soluble, high performance, thermoplastic, and thermoset polymers), the development of composites (nano-engineered prepregs and composites; recycling of polymers, polymer composites, and multi-layer materials; latent catalyst and curing systems for composites and adhesives, out-of-autoclave (OOA) manufacturing of composites; wood-based composites and supporting chemicals), development of nanomedicines (advanced drug delivery systems, nano-theranostics for cancer and COVID-19), the development of multifunctional structural supercapacitors and batteries, and coatings (smart, anticorrosive, anti-soiling, hydrophobic, and hydrophilic). (https://scholar.google.com.tr/citations?user=CHzJPU-MAAAAJ&hl=en)

Burcu Saner Okan
(Research and Application Oriented Faculty Member)

Burcu Saner Okan received her BS degree in Chemistry at Middle East Technical University (METU), Turkey in 2005. Dr. Saner Okan received MS degree in 2007 and PhD degree in 2011 in Materials Science and Engineering programme at Sabancı University (SU). Dr. Saner Okan worked in SU Nanotechnology Research and Application Center for 5 years. Currently, she has been working as an application and research oriented faculty member at SU Integrated Manufacturing Technologies Research and Application Center. Dr. Saner Okan is a faculty member of the Material Science and Nanoengineering Program and Manufacturing Engineering Program at SU. Dr. Saner Okan is also co-founder of NANOGRAFEN Company and develops automotive certified additive for plastic processing. In addition, she is one of technical members in NATO working groups related to military value of graphene technologies. She earned the Technology Development Foundation of Turkey (TTGV) award in 2021 and also has several national and international prestigious awards and fellowships. She has secured and conducted and participated over 20 international and national projects. She has 39 articles published in international journals, 6 book chapters, 2 patents, and more than 50 conference papers on these fields. Dr. Saner Okan's main research areas are i) graphene and 2D related materials and surface functionalization, ii) nano-integrated lightweight thermoplastic composite productions, iii) sustainable bio-based composite manufacturing oriented with the circular economy approach and iv) recycling and upcycling technologies with Life Cycle Analysis techniques.

Nur Mustafaoğlu

Nur Mustafaoğlu is an interdisciplinary professor at the Faculty of Engineering and Natural Sciences, Sabanci University. Her research interests include the development of advanced medical diagnostics, modular drug delivery, and innovative nanoparticle strategies specifically for central nervous system diseases and cancer, which have the potential to significantly improve the diagnosis and treatment of diseases in the future, thereby improving patient outcomes. She was a postdoctoral fellow at the Wyss Institute for Biologically Inspired Engineering at Harvard University, where she developed a physiologically relevant human cell-based in vitro model of the blood-brain barrier using microfluidic devices and stem cell technologies. She holds two bachelor's degrees: one in molecular biology and genetics and the second in physical engineering from Istanbul Technical University. She also holds a master's degree in nanoscience and nanoengineering from the same university. She received a Fulbright scholarship to pursue her PhD in the United States in bioengineering from the University of Notre Dame. Her PhD studies focused on two main research areas: i) the development of improved detection systems and ii) the development of simple, inexpensive, and efficient affinity chromatography methods for antibody purification. Her research for biosensing applications was recognised by the Berry Family Foundation Graduate Fellowship in Advanced Diagnostics & Therapeutics. She currently leads a bioengineering lab focused on innovative technologies for understanding and treating brain diseases and their interactions with the blood-brain barrier. She was awarded by the Marie Skłodowska-Curie Actions Widening Fellowship of Horizon 2020. Her work has been published in prestigious journals such as Nature Communications, ACS Nano, Nanoscale, PNAS and others.

Onur Varol

Onur Varol is an Assistant Professor at the Sabanci University Faculty of Engineering and Natural Sciences and Principal Investigator at the VIRAL Lab. His research focuses on developing techniques to analyze online behaviors to improve individual well-being and address societal problems using online data. Prior to joining Sabanci University, he was a postdoctoral researcher at Northeastern University at the Center for Complex Network Research. He completed his PhD in Informatics at Indiana University, Bloomington (USA). His thesis focuses on the analysis of manipulation and threats on social media and he was awarded the 2018 University Distinguished Ph.D. Dissertation Award. He has developed a system called Botometer to detect social bots on Twitter and his team ranked top 3 worldwide at the 2015 DARPA Bot Detection Challenge. Efforts on studying social bots yield publications on prestigious venues such as International Conference of Web and Social Media (ICWSM), Nature Communications, World Wide Web (WWW) conference, and Communications of the ACM. He interned at Microsoft Research for two summers during his PhD to develop causal analysis of large-scale social media timelines. He is currently working on quantifying success of online personas and impact of their actions. He is also modeling user interactions, leveraging online data across multiple platforms to understand conscious and unconscious behaviors.

Serkan Ünal
(Research and Application Oriented Faculty Member)

Serkan Ünal is currently an Assistant Professor of Chemistry and a full-time Research and Application Oriented Faculty Member at Sabanci University, Faculty of Engineering and Natural Sciences. Dr. Ünal received his B.S. degree in Chemistry from Koc University (Istanbul, Turkey) in 2001 and completed his Ph.D. in Polymer Chemistry at Virginia Polytechnic Institute and State University (Blacksburg, VA USA) in 2005. After obtaining his Ph.D., he joined Covestro LLC (formerly Bayer Material-Science LLC, Pittsburgh, PA USA) as a research scientist, where he led research activities on the development and applications of new polymeric coatings, elastomers, adhesives and composites between 2005 and 2012. He joined Sabanci University in 2012 and worked as a researcher at the Nanotechnology Research and Application Center (SUNUM) until 2017 and has been a member of the Integrated Manufacturing Research and Application Center (SU-IMC) since 2017. Dr. Ünal's research activities at Sabanci University involve polymer synthesis and characterization; structure-property-process relationships in polymeric materials; polymer emulsions and dispersions; functional coatings, adhesives and elastomers; thermosetting resins and structural composites; hybrid and multifunctional nanomaterials; nanocomposites; carbon nanomaterials; water purification membranes; recycling and sustainability of polymeric materials (https://scholar.google.com.tr/citations?user=cVySgFAAAAAJ&hl=en).

Dr. Ünal is the co-founder and chairman of Punova R&D and Chemicals Inc., a Sabanci University spin-off, founded in 2014. He currently serves as a member of the Sabanci University Intellectual Property and Commercialization Committee (IPCC) and an advisory board member of the Scientific and Technological Research Council of Turkey (TUBİTAK) ARDEB Program.

Süha Orhun Mutluergil

Süha Orhun Mutluergil is a visiting instructor in the Computer Science and Engineering program. He obtained his BSc degree in Computer Science and Engineering and minor in Mathematics from Sabanci University in 2010. He then obtained his MSc degree in again Computer Science and Engineering from Sabanci University in 2012. Afterwards, he obtained his PhD degree in Computer Science and Engineering from Koc University in 2018. Before joining to Sabanci University, he was a postdoctoral researcher at IRIF, Universite de Paris for 2 years. His research focuses on development of provably correct concurrent software. His research interests span concurrency theory, development of formal reasoning mechanisms for distributed systems, blockchain platforms, cloud systems and high performance parallel programs. He has been awarded with Best Paper Award and he is a recipient of the prestigious Amazon Research Awards.

Promotions

HÜSNÜ YENİGÜN WAS PROMOTED TO FULL PROFESSOR IN NOVEMBER 2021
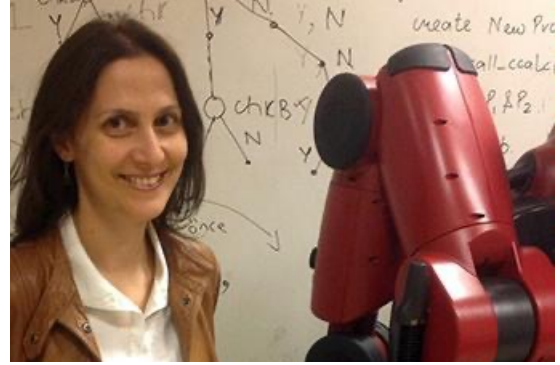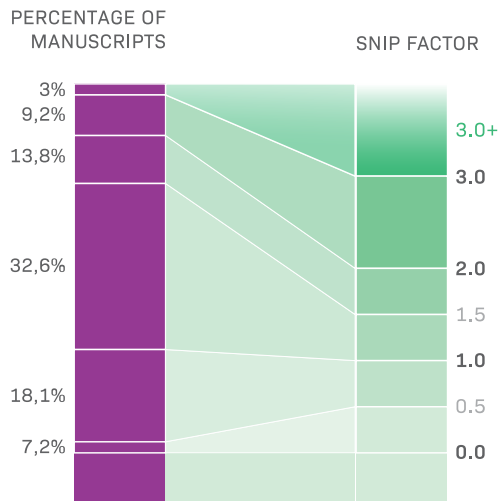

ESRA ERDEM WAS PROMOTED TO FULL PROFESSOR IN MARCH 2021

BURCU SANER OKAN WAS PROMOTED TO ASSOCIATE PROFESSOR IN AUGUST 2021
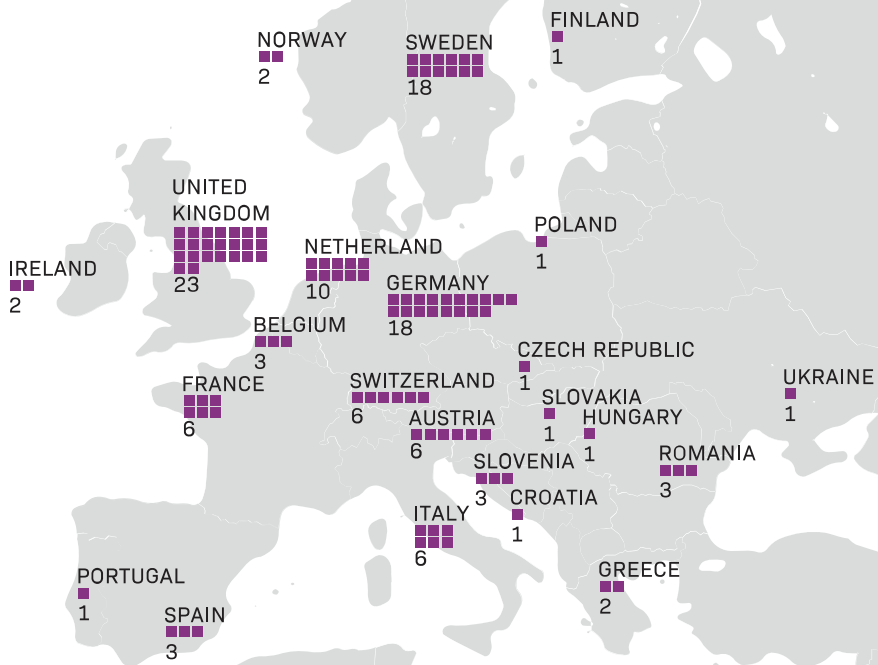
Publications

SNIP Factor Distribution

PERCENTAGE OF
MANUSCRIPTS

SNIP FACTOR

3%
9,2%
13,8%

32,6%

18,1%

7,2%

3.0+
3.0

2.0
1.5
1.0
0.5
0.0

FENS 2020

Scholarly Output	308
Citation Count	1134
Field-Weighted Citation Impact	1,05
Publications in Q1 Journal Quartile by CiteScore (%)	62,1
Publications in Top 10% Journal Percentiles by CiteScore Percentile (%)	32,8

Web of Science Categories

MECHATRONICS ENGINEERING	69	
MATERIALS SCIENCE & NANO ENGINEERING	66	
ELECTRONICS ENGINEERING	58	
COMPUTER SCIENCE & ENGINEERING	46	
MOL. BIO., GENETICS & BIOENGINEERING	41	
MATHEMATICS	24	
INDUSTRIAL ENGINEERING	20	
PHYSICS	20	

113 Papers Published in 2020 with Collaborations from Europe

NORWAY
2

SWEDEN
18

FINLAND
1

UNITED KINGDOM
23

IRELAND
2

NETHERLAND
10

POLAND
1

GERMANY
18

BELGIUM
3

CZECH REPUBLIC
1

UKRAINE
1

FRANCE
6

SWITZERLAND
6

AUSTRIA
6

SLOVAKIA
1

HUNGARY
1

ROMANIA
3

SLOVENIA
3

CROATIA
1

ITALY
6

PORTUGAL
1

SPAIN
3

GREECE
2

Publications

222 Papers Published in 2020
with Collaborations from All
Around the World

CANADA
11

UNITED STATES
53

BRAZIL
1

RUSSIAN FEDERATION
1

EUROPE
113

PALESTINE
1

ISRAEL
1

IRAQ
1

IRAN
4

SAUDI ARABIA
1

UNITED ARAB EMIRATES
2

EGYPT
2

PAKISTAN
6

INDIA
2

CHINA
9

SOUTH KOREA
4

JAPAN
2

TAIWAN
1

THAILAND
1

SINGAPORE
2

AUSTRALIA
3

SOUTH AFRICA
1
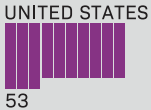
Projects

- ■ EU
- ■ Non-Governmental Organizations/University/Other
- ■ TUBITAK
- ■ Business Enterprises

FACULTY OF ENGINEERING AND
NATURAL SCIENCES

8 Projects
₺ 105.3 M
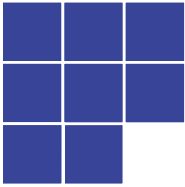
9 Projects
₺ 12.9 M
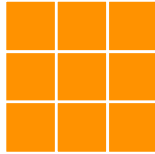
85 Projects
₺ 89.1 M
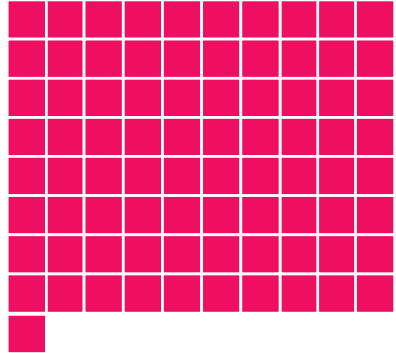
54 Projects
₺ 46.7 M
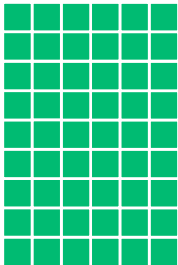
*The budgets of Center of Excellence in Data Analytics (CEDA)
Integrated Manufacturing Research and Application Center (SU IMC) are included.

Our
Stories

Basic Concept

Conceptual Design

Preliminary Design

Detailed Design

Bench/Lab Testing

Prototype

Field Test

Pre-production

Commercialized

1   2   3   4   5   6   7   8   9

Technological Readiness Level

Mitochondrial-dysfunction-inducing antibiotics as the novel chemotherapeutic agents against cancer chemoresistance

FD radio development and test set-up
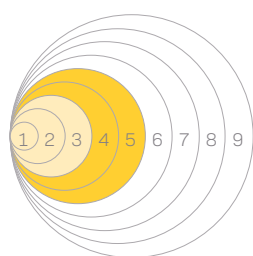
My story began about 1.5 billion years ago, when large eukaryotic cells (cells with nuclei) appeared in our world of prokaryotes (nuclei-free cells) and microbes. One of these large cells absorbed an alpha-proteobacteria capable of consuming oxygen and settled in the big house of eukaryotes, paying for its residence with the universal biological currency now known to every schoolboy as ATP, and the name of this pra-pra-cell is mitochondrion. I should also note that many prokaryotes in the course of evolution fight each other with special weapons known as antibiotics, i.e. compounds capable of inhibiting the growth or killing certain microorganisms. Antibiotics are quite good at killing prokaryotic bacteria, but since mitochondria have many similarities with them, certain antibacterial drugs, we call them MDFIs (mitochondrial dysfunction inducers), can also inhibit mitochondrial function. This can be detected by looking at two pictures of stained mitochondria in the cells. Where MDFI works, the mitochondrial reticulum looks more fragmented and the computer can count that.

What could this be useful for? Let's go back to our time then. Several years ago, a number of groups around the world proposed to "de-energize" cancer cells using MDFI. Moreover, since most cancer patients do not die from cancer, but from secondary cancers through a process known as metastasis, we should try to apply therapy at this very stage. That is, not to destroy the cancer, but to completely control the metastatic disease. It turned out that the growth of metastases is associated with special resistant cell types sometimes referred to as cancer stem cells (CSC). A few years ago, my group came to the conclusion that many resistant cancer cells (CRC) remaining after chemo- or radiotherapy are somewhat similar to CSC, so we should not fight the whole malignant tumor but a very small subpopulation of resistant cells within it. And here we are helped by the fact that many cancer cells get most of their energy through glycolysis, while CSC and CRC use mitochondria for this. Thus, we can try to use MDFI to treat metastatic disease through repurposing known antibacterial drugs.

The goal of my lab on this project is not only to screen hundreds of such drugs, but also to study the molecular mechanisms of mitochondrial dysfunction in the most aggressive forms of cancer, such as triple negative breast cancer. This will require the help of my collaborators in Spain and the Czech Republic doing MetabolOMICs and what we call "mitochondriome," that is, mitochondrial protein profiles. This is how my group has recently shown that we should use mitophagy inhibitors, a special way of self-cleansing cells from damaged mitochondria, which is activated upon anticancer therapy, simultaneously with the use of MDFIs. The question then becomes, how do we improve the efficacy of selected MDFI? My longtime colleague at the University of Chicago and one of the world's leading crystallographers in establishing antibiotic-ribosome structures will tell us which of the selected MDFI will better inhibit protein synthesis in mitochondrial ribosomes. Finally, the "chemistry team" will try to modify the selected MDFI to increase their delivery to the mitochondria. We recently conducted a pilot experiment and showed that by attaching a special charged chemical moiety to the antibiotic chloramphenicol, we can increase the drug's delivery to mitochondria by dozens of times. This means that we will be able to proportionally reduce the drug concentration and decrease the risk of side-effects. After this stage, we will try to do some important experiments in animal models of human cancers and only then will we be able to offer this approach to small pharma companies. In parallel with these studies, my colleague from Canada is interested in conducting a retrospective study on the role of antibacterial drugs on cancer onset. Once we have access to databases with a large sample size, we can do a kind of mental experiment and select the appropriate cohort of people who took antibiotics for one reason or another in the past to see how much it affected the occurrence of cancer in the same people 10 years later.

So as you can see, my rather old story about mitochondria is getting a whole new meaning today, a billion and a half years later. In addition, my laboratory will study organ aging processes associated with mitochondrial dysfunction, as well as horizontal transfer of mitochondria between cancer and non-cancer cells.

A novel approach to control magnetism in the nanoscale

FD radio development and
test set-up
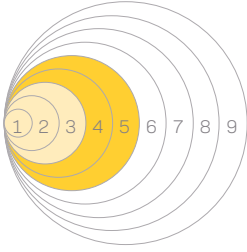
Faculty members Burç Mısırlıoğlu of the Materials Science and Nanoengineering program and Kürşat Şendur of the Mechatronics Engineering Program have been collaborating on the topic of the influence of electric fields on magnetism in nanostructures. The idea has also been funded by a TÜBİTAK 1001 project since October of 2017. Electric field control of magnetism in nanostructures and thin films have been a forth coming topic of research for design of new and novel devices that allows further miniaturization of integrated circuits as well as functional components for what is now called "spintronics" that utilize the spin of an electron rather than its charge to process and store information. Use of electric fields to control magnetism also possesses advantages over traditional magnetic induction-based methods. A number of approaches have been standing out as possible candidates to realize electric control of magnetism such as tailoring specific interactions at dielectric/ferromagnet interfaces and use of GHz or THz electromagnetic radiation. The question we ask here is whether or not the magnetic field induced by an electric pulse can be used to control magnetism of a ferromagnet in the nanoscale.

In their work, Burç and Kürşat alongside with Wael Aldulaimi, PhD student at Materials Science and Nano Engineering Program, M. Barış Okatan, faculty member of İzmir Institute of Technology (İYTE) and Can Akaoğlu, PhD student at the University of Manchester studied the effect of short electric signals on the changes that can be induced in the ferromagnetic order of nanodiscs using what one calls micromagnetic simulations. Specific focus was given to vortex states of the ferromagnetism that is often reported to stabilize in ferromagnetic nanodiscs. The vortex type magnetism usually appears in ferromagnetic materials with highly reduced dimensions (in nanodiscs and such) and exhibit properties not present in larger structures. A schematic of a vortex type ordering in a ferromagnet is given in Figure 1.
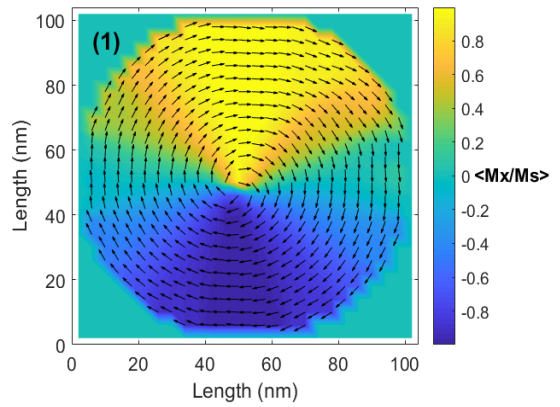
Figure 1. A ferromagnetic nanodisc material with a diameter of about 100 nm having a vortex type magnetic order (See the black arrows). The colorscale denotes the upper and lower halves of the disc being in opposite directions.

Such type of magnetism is of interest for applications whereby topological features such as the chirality of the vortex are tailored. Despite the attractive properties magnetic vortices exhibit, deterministic access to these states and their control via traditional methods (such as the methods employed in the current hard-drive technology) remain a challenge. In their simulations, the research team observed that magnetic vortices can be manipulated in a deterministic manner using short electric pulses for which the schematic mechanism is provided in Figure 2.
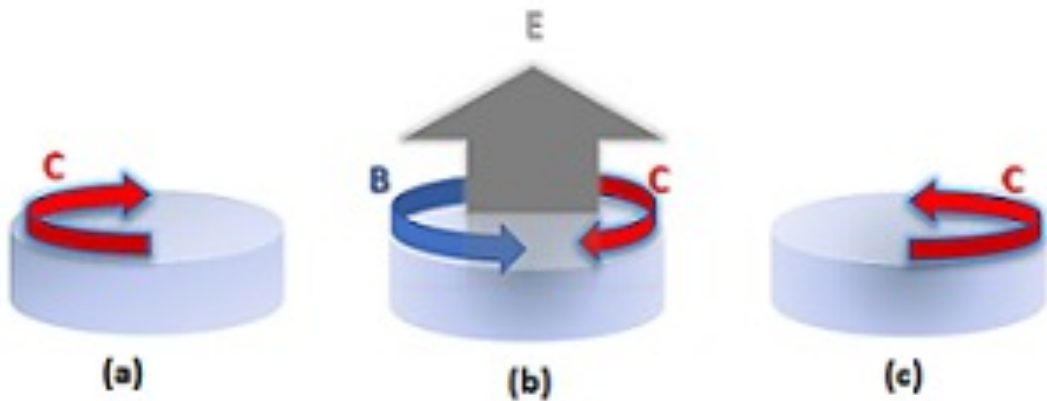

Figure 2. (a) Schematic of a magnetic vortex state with a clockwise chirality, C, (red arrow) in a nanodisc. (b) Application of a time-wise asymmetric electric field, E, (gray arrow) which induce a radially varying tangential magnetic field, B, (blue arrow). (c) The chirality of the vortex in the nanodisc switches from clockwise to counter clockwise upon the pulse generated field reaching a critical amplitude within a critical duration, usually on the order of a nanosecond or so.
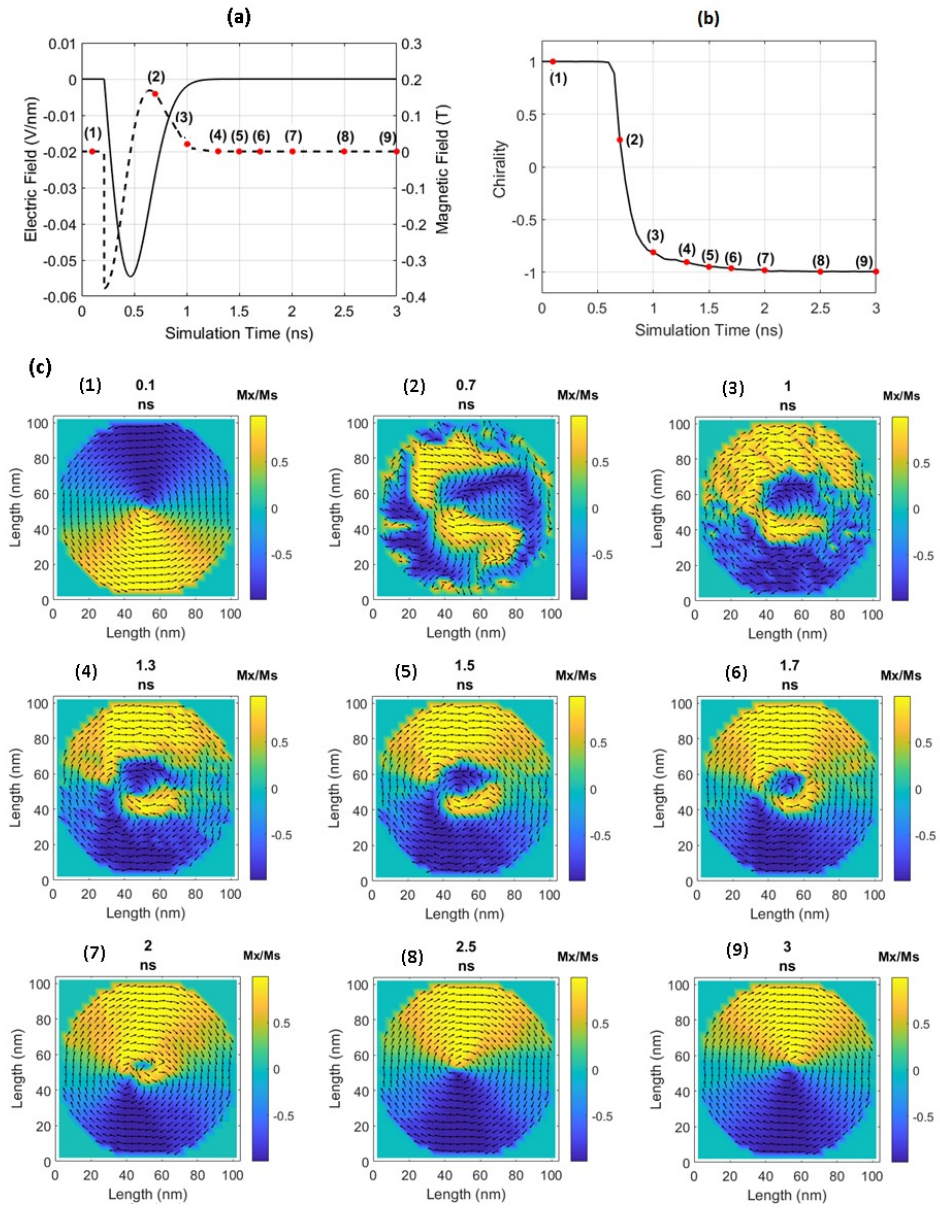
Figure 3. (a) The time-varying ns electrical pulse and the accompanying magnetic field derived from Eq. 6. where the solid line is the electric field and the dashed line is the accompanying radial magnetic field. (b) Chirality of the system in response to the pulse given in (a). Red points labeled as (1-9) in (a) are the instants where we show the planar magnetic dipole configurations in (c) in response to the time varying electric pulse. The vortex states in (1) and (9) are anticlockwise and clockwise respectively, indicating that switching has occurred. Vortex switching starts between (2) and (6) when B > 0 accompanied by an oscillation in the vortex center position.

Published since 1799, Annalen der Physik Journal featured the results of the work on its cover in the 2021 October Issue (Please go to https://onlinelibrary.wiley.com/toc/15213889/2021/533/10). You can visit the website http://people.sabanciuniv.edu/burc/ for updates on the described research.

Industry-Focused Projects

WHAT IS THE INDUSTRY-FOCUSED PROJECT PROGRAM ?

The Industry - Focused Project" is a program that enables companies to attack R&D challenges together with Sabancı University Engineering and Natural Sciences undergraduates. The program is carried out by senior undergraduate students of Sabancı University as part of their compulsory "Graduation Project" with the participating company representative and Sabancı University faculty member acting as advisors. The owner of the project is the commissioning company. Sabancı University and the companies are coimplementers of the project.

- This program enables industrial companies to engage in research projects that require considerable time, human resources and technical ability by cooperating with Sabancı University.

- This program provide new project ventures and collaboration opportunity both for faculty members and for companies/institutions.

- Senior students involved in the project comprise a useful talent pool for prospective employers who find an opportunity to know and train their potential colleagues.
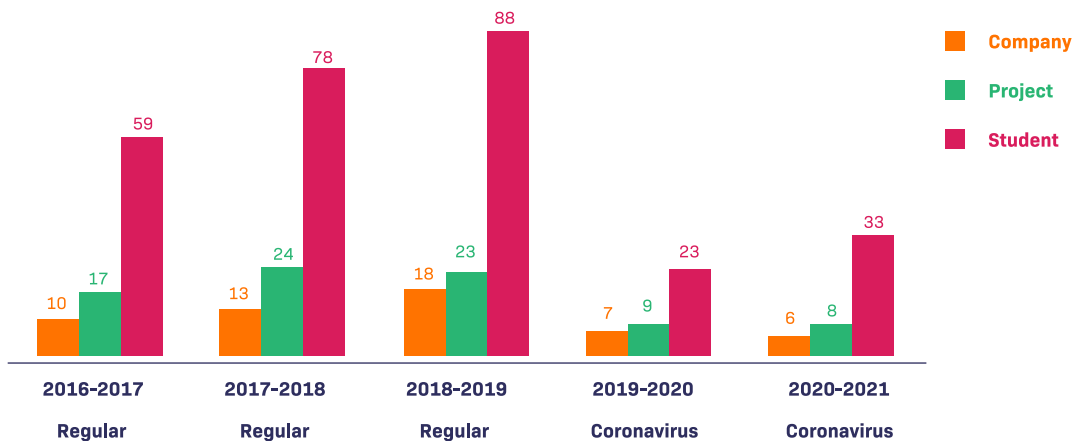
OVERALL FACTS & FIGURES

During five years since the beginning, 54 companies participated to the program as project stakeholders. Totally 81 projects were completed successfully. 281 senior students from various undergraduate programmes were assigned as a member of project working teams.

	COMPANY	PROJECT	STUDENT
2016/17	10	17	59
2017/18	13	24	78
2018/19	18	23	88
2019/20	7	9	23
2020/21	6	8	33
Grand Total*	54	81	281

* 54 companies participated to the program as project stakeholders

	2017	2018	2019	2020	2021
BIO	0	2	0	0	0
CS	13	22	14	3	9
EE	6	10	8	3	1
IE	33	38	53	15	18
MAT	3	4	3	0	2
ME	4	11	10	2	3
Grand Total	59	78	88	23	33

MAJOR PROGRAM DISTRIBUTIONS OF STUDENTS

Legend: Company, Project, Student

2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Regular	Regular	Regular	Coronavirus	Coronavirus

10 17 59 | 13 24 78 | 18 23 88 | 7 9 23 | 6 8 33

Alumni in Academy

Ahmet Fatih Tabak (BSME, 2012) is a Faculty Member in Kadir Has University

Emre Yılmaz (BSCS, 2008) is a Faculty Member in University of Houston

Barış Altop (MSCS, 2011) is an Instructor in Sabanci University

Selim Mehmet Yavuz (BSCS, 2012) is an Instructor in İstanbul University

Aydın Aysu (BSEL, 2008) is a Faculty Member in North Carolina State University

Yasemin Vardar (BSME, 2010) is a Faculty Member in Delft University of Technology

Ümmühan Akbay (PHDIE, 2016) is a Faculty Member in Işık University

Şevval Naz Köprülü (BSBIO, 2019) is a Research Assistant in Helmholtz Zentrum München

Şeyma Burcu Gülşen (BSMAT, 2019) is a Research Assistant in Fraunhofer-Institut für Solare Energiesysteme ISE

Yusuf Emre Ertem (BSBIO, 2019) is a Research Assistant in Erasmus University Rotterdam

Gamze Kuruk (PHDMATH, 2019) is Instuctor in Sabanci University

Awards & News

THE METU PROFESSOR MUSTAFA PARLAR FOUNDATION 2020 AWARDS

Sabancı University Faculty of Engineering and Natural Sciences (FENS) Faculty Members, Burak Kocuk and Kağan Kurşungöz have received the Mustafa Parlar Foundation Research Incentive Award

µFIP PROMINENT RESEARCHER AWARD

Ali Koşar received "µFIP Prominent Researcher Award" in the 2021 micro Flow and Interfacial Phenomena (µFIP) Conference due to his valuable contributions to the science and engineering in single phase and phase change fluid flow and engineering in micro heat sinks and microfluidic devices.

2021 BAGEP AWARDS

The Academy of Science has announced the winners of the 2021 Young Scientist Awards Program (BAGEP). Nurdagül Anbar Meidl, member of the Faculty of Engineering and Natural Sciences (FENS), in the field of mathematics.

AMAZON RESEARCH AWARDS

Süha Orhun Mutluergil, our visiting faculty member at the Faculty of Engineering and Natural Sciences, Computer Science and Engineering Program receives Amazon Research Award for his project entitled "Linearizability Checking via Symbolic Reasoning".
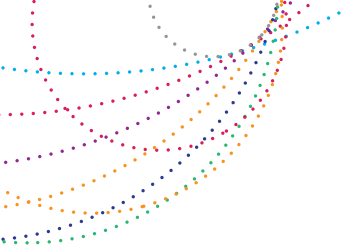
OUR STUDENTS RECEIVE THE ALPER ATALAY BEST STUDENT PAPER AWARD IN SİU 2021

Our students Ali Enver Bilecen (MSEE Student), Alp Özalp (BSEE Student), M. Sami Yavuz (BSEE Student) ' project entitled "Video Anomaly Detection via Autoregressive Modelling of Covariance Features", receiving the best paper award in the field of machine vision and pattern recognition, offers deep learning-based innovative methods that can detect the location of extraordinary events in a scene.

SABANCI UNIVERSITY ALUMNUS ATIF MAHBOOB (MSME-2015) RECEIVED THE PROSTEP IVIP 2021 SCIENTIFIC AWARDS

Our alumnus Atif Mahboob (MSME-2015) received the prostep ivip Scientific Award, given to young engineers focusing on virtual product creation and development, with his doctoral research on "The use of SysML behavior models for achieving dynamic use cases of technical products in different Virtual Reality Systems" that he conducted in Germany.

Awards & News

A PROJECT PROTOCOL WAS SIGNED WITH THE TURKISH SPACE AGENCY (TUA)

The signing ceremony of the protocol for the "Augmented X-Ray Timing and Polarimetry SatelliteWide Area Monitoring Application Software" project, directed by Emrah Kalemci and Ayhan Bozkurt, as one of the four important projects that will contribute to realizing Turkey's National Space Program, was held with the participation of Sabancı University President Yusuf Leblebici and Turkish Space Agency (TUA) President Serdar Hüseyin Yıldırım.

JOZEF STEFAN INSTITUTE AND SABANCI UNIVERSITY DOUBLE PHD PROGRAM

Sabancı University and the Jozef Stefan Institute had come together to launch a Double Ph.D. Program in Materials Science and Nano Engineering Program which now aims at enhancing research collaboration and cultivating high-quality PhD graduates.

The Double Ph.D. program offers full-time students the opportunities to benefit from shared research excellence between SU and its prestigious partner, IPS, which is the largest research institute in Slovenia. Students have to apply directly to the programs. Double Ph.D. students are supervised by an academic at each institution, and students spend time on their research at each institution.

Awards & News

BEST THESIS AWARD
İPEK EFE (BSMAT-2018)

Sabancı University Materials Science and Nano Engineering Program 2018 graduate İpek Efe completed her master's degree in the Materials Science program of ETH Zurich University. İpek Efe, who was awarded the "Best Thesis Award" with her master's thesis in the field of Materials Science, continues her doctoral studies at ETH Zurich University.

YOUNG RESEARCHER AWARD
YUSUF CEYHUN ERDOĞAN
(MSBIO- 2021)

Sabancı University Molecular Biology, Genetics and Bioengineering Program graduate student Yusuf Ceyhun Erdoğan was awarded the Young Researcher Award at the 20th Biennial International SFRR (Society of Free Radical Research) Conference, where he presented his work with FENS Faculty Member Emrah Eroğlu.


OUR FACULTY MEMBER AND STUDENT'S ARTICLE BECAME ONE OF HOT PAPERS IN THE MDPI MICROMACHINES JOURNAL

Meltem Elitaş and her Molecular Biology, Genetics and Bioengineering Program graduate student Esra Şengül (MSBIO-2021) 's article "Single-Cell Mechanophenotyping in Microfluidics to Evaluate Behavior of U87 Glioma Cells" became one of Hot Papers since it was published in the MDPI Micromachines journal.

Our Awards
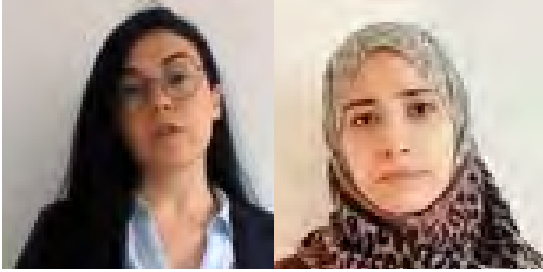
People's Choice
**Buse Bulut Köpüklü
(PHDMAT)**

Winner
**Sarah Barakat
(PHDBIO)**

Amro Alabsi Aljundi
PhDCS student
CS 204 Advanced
Programming

**Esra Yüksel**
PhDMFG student
IE 309 Manufacturing
Processes I

The second Three Minute Thesis (3MT®) competition was hosted by Sabancı University on On May 22 nd, 2021. Founded by the University of Queensland Australia, the competition was carried out by the Sabancı University Faculty of Engineering and Natural Sciences Research Awards Committee

Altan Berdan Kılıç
MSMATH student
MATH 204 Discrete
Mathematics

**Bahar Cennet
Okumuşoğlu**
MSIE student
IE 311 Operations
Research I

Our Awards

2021 TEACHING AWARDS

GRADUATING CLASS AWARD
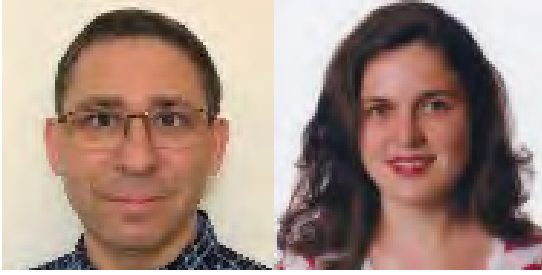
1.Albert Levi
CS Program

2.Ezgi Karabulut Türkseven
IE Program

FIRST YEAR TEACHING ASISTAND AWARD

Antigona Pajaziti
FENS

Anes Abdennebi
FENS

TEACHING ASISTANT AWARD

Osman Şahin
FENS

Bahar Cennet Okumuşoğlu
FENS

Amro Alabsi Aljundi
FENS

Sabancı Üniversitesi

2021 TEACHING AWARDS

First Year University Courses Award 1
(Multiple-section Courses)

1. İlkem Kayıcan
School of Languages
2. Seçil Sarıbayır
School of Languages
3. Michael John Thomas
School of Languages

First Year University Courses Award 2
(Auditorium Courses)

1. Emre Erol
Foundations Development Directorate
2. Yuki Kaneko
Foundations Development Directorate
3. Şirin Kaya
Foundations Development Directorate
3. Duygu Karaoğlan Altop
Foundations Development Directorate

Graduating Class Award

1. Albert Levi
Faculty of Engineering and Natural Sciences
2. Ezgi Karabulut Türkseven
Faculty of Engineering and Natural Sciences
3. Zeynep Nevin Yelçe
Foundations Development Directorate

Foundations Development Year Instructor Award

1. Nezaket Özgirin
School of Languages
2. Ebru Ezberci Webb
School of Languages
3. Yeşim Nalkesen Akın
School of Languages

First Year Teaching Assistant Award

1. Ali Baydarol
Faculty of Arts and Social Sciences
2. Antigona Pajaziti
Faculty of Engineering and Natural Sciences
3. Anes Abdennebi
Faculty of Engineering and Natural Sciences

Teaching Assistant Award

1. Osman Şahin
Faculty of Engineering and Natural Sciences
2. Bahar Cennet Okumuşoğlu
Faculty of Engineering and Natural Sciences
3. Amro Alabsi Aljundi
Faculty of Engineering and Natural Sciences

#OurStrengthForTheFuture

GÜRSEL SÖNMEZ AWARDS

The "Gürsel Sönmez Awards" established in 2006 in memory of the Faculty of Engineering and Natural Sciences member and valued scientist Gürsel Sönmez were given for the 15th time this year. To commemorate his achievements and to inspire and encourage young scientists, an award is presented each year to selected graduate students of FENS who write distinguished MS or PhD theses. The selection process is pursued at the end of each academic year, by the Gürsel Sönmez Award Committee formed by faculty members representing each program.Dr. Gürsel Sönmez Research Award Committee has carefully evaluated the applications of 9 candidates, considering their research outcomes and references, as well as the nature of each discipline at the Faculty of Engineering and Natural Sciences at Sabancı University. Due to their achievements and contributions in their fields as summarized in our website the Committee has decided to give the award to İsa Emami Tabrizi and Ahmet Can Mert.

Isa Emami Tabrizi obtained his Ph.D from the Materials Science and Nanoengineering Program upon successfully defending his thesis entitled "Understanding Failure Mechanisms in Hybrid Fiber Reinforced Laminates Through the Combined usage of DIC, AE, Thermography and Optic Based Systems" in November of 2020. His studies during his Ph.D period are concerned with mechanics and manufacturing processes of composite materials and structural health monitoring in engineering structures comprised of these materials using various cutting edge techniques. Findings during his research have stimulated the development of predictive methods to identify an approaching failure in hybrid laminate-based composites as well as aiding in optimal design of such structures for applications. The work of Isa has led to several original publications in highly regarded journals in his field in addition to paving the way for new undertakings in composite material design and development.
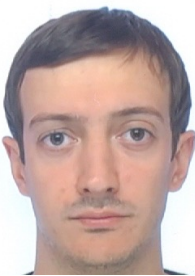
Ahmet Can Mert's Ph.D. thesis has addressed the design and implementation of hardware accelerators for lattice-based cryptography (LBC), which has become significant and popular in cryptography due to its applications to fully homomorphic encryption (FHE) and post-quantum cryptography. His thesis, and articles based on his thesis, have presented the design and implementations of hardware accelerators for FHE schemes. He proposed implementations for Number Theoretic Transform (NTT) based polynomial multiplication, some of the fastest implementations in the literature. He visited NCSU in 2019 during when he investigated theoretical and implementation aspects of the utilization of neural networks over homomorphically encrypted data. He proposed a novel architecture providing configurability for both scheme parameters and throughput/area, which received the Best Paper Award at the Design Track of Design, Automation, and Test in Europe (DATE) Conference in 2020. He has four published and one submitted journal papers during his Ph.D. He also published five conference proceedings.

Emeritus Appointment

Prof. Dr. Albert Erkip,

Our Board of Trustees has awarded Prof. Dr. Albert Erkip, Faculty of Engineering and Natural Sciences, with the Emeritus Faculty Member title as of 01 February 2021 upon his retirement from our University.

We congratulate and thank him for his distinguished service to Sabancı University, academia, and society.

Personal Web

http://myweb.sabanciuniv.edu/albert/

Education

B.Sc. in Mathematics, Middle East Technical University, 1974

Ph.D. in Mathematics, University of California, Berkeley, 1979

Fen Lisesi, Ankara 1967 - 1970

Areas of Interest

Partial differential equations;pseudo-differential operators; functional analysis.

Memberships

Turkish Mathematical Society, American Mathematical Society, SIAM

FACULTY of ENGINEERING and NATURAL SCIENCES CONNECTIONS

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Chemistry chem.sabanciuniv.edu
Energy energy-minor.sabanciuniv.edu
Mathematics math.sabanciuniv.edu
Physics phys.sabanciuniv.edu

Data Analytics da.sabanciuniv.edu
Energy Technologies and Management energy.sabanciuniv.edu
Information Technology msit.sabanciuniv.edu

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