



# Faculty of Engineering and Natural Sciences

Annual Report  
2015-2016 Academic Year

 **DEAN'S MESSAGE**

 **HIGHLIGHTS**

 **EDUCATION**

 **RESEARCH**

 Sabancı  
Üniversitesi

FACULTY OF  
ENGINEERING AND  
NATURAL SCIENCES



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## DEAN'S MESSAGE



I am happy to share with you FENS Activity Report for the 2015-16 Academic Year. I would like to summarize some of the highlights, details can be found in this report.

FENS graduated 383 undergraduate, 123 masters and 30 doctoral students in this academic year. Computer Science and Engineering and Electronics Engineering Programs have been accredited by MÜDEK, the local accreditation association which is a member of Washington Accord. Accreditation applications of Industrial Engineering and Mechatronics Engineering Programs have been submitted and these Programs will be evaluated in 2016-17. We believe in the strength of the education we provide and the placement and success stories of our graduates are proofs of this. Accreditation is just another validation of the quality of education provided by FENS Programs.

Our strong research performance continued in 2015-16. As of June 2016, total budget of continuing research projects in FENS is about 70 million TL. FENS faculty members, post-docs and students continued to contribute to scientific knowledge by publications with high impact. As a result of all of these, they won prestigious awards and Sabancı University continued its good performance in national and international rankings.

Since the early Search Conferences we held in 2012, forming centers of excellence in concentration areas has been our goal. There has been a university-wide effort for setting the bylaws of center formation since then. Our goal has been realized in 2015-16, centers of excellence on composite technologies, data analytics and functional surfaces and interfaces have been started. Other new research collaborations were also started in 2015-16, such as the partnership with Fraunhofer IML on logistics and with the Insurance Information and Monitoring Center on big data.

The saddest memory of 2015-16 was the loss of our Founding President Prof. Tosun Terzioğlu. Prof. Terzioğlu was not only a distinguished mathematician but was also an excellent administrator. He received various academic honors including the Science Award of TÜBİTAK (The Scientific and Technological Research Council of Turkey) in 1986. He held many important administrative titles in his career, such as the Presidency of TÜBİTAK between 1992 and 1997. He was the founding President of Sabancı University in 1997, retired from Presidency in 2009 and became Emeritus Faculty Member afterwards. The model he and his colleagues set up for our University was unique in Turkey, continues to be a pioneering example in Turkish higher education system and enables us to be a globally recognized institution. We will remember him with utmost respect and appreciation.

Yusuf Menceloğlu  
Dean

Faculty of Engineering and Natural Sciences

## HIGHLIGHTS

### Search Conferences



The fourth Faculty Search Conference since 2012 was organized on Jan 12, 2016 with the purpose of discussing our outputs, achievements and improvement areas. Another goal was to prepare Faculty's agenda for University's broad search conference in 2016. Some of the prioritized targets at the end of the meeting were:



- Continue with excellent research performance, increase the output in already well-established areas through center of excellences.
- Increase the number of support staff in research: PhD students, post-docs, researchers.
- Increase involvement of undergraduate students in research, create incentives for this.
- Implement new approaches/methods in education.
- More emphasis on applied/hands-on education and means to achieve this such as foundation of a makerspace.
- Re-think evaluation of teaching performance in periodic reviews of faculty members.
- More feedback on education from all stakeholders: students, alumni, industry.
- Societal impact, transferring scientific thought to public through various mechanisms.

### New Comers



**Esra Koca** is a faculty member at Sabancı University since September 2015. She received her Ph.D. degree in Industrial Engineering at Bilkent University in 2015 where she worked with Prof. Hande Yaman and Prof. M. Selim Aktürk on different

variations of the lotsizing problem encountered in many real life production, procurement and transportation systems. She received her B.S. and M.S. degrees in Industrial Engineering from Bilkent University in 2007 and 2010, respectively. In her M.S. thesis she studied with Prof. Emre Alper Yıldırım on different solution approaches to a real life logistics problem. Her research interests include mixed integer programming, stochastic optimization, conic optimization, and dynamic programming with applications in production planning and logistics.



**Sinan Yıldırım** is a faculty member of the Faculty of Engineering and Natural Sciences at Sabancı University, Turkey, since September 2015. He received his BSc and MSc degrees in Electrical and Electronics Engineering, Boğaziçi University, Turkey and his PhD in Mathematical Statistics, University of Cambridge. He worked as a postdoctoral researcher at the University of Bristol, School of Mathematics, where he was involved in the EPSRC-funded research project called Intractable Likelihood: New Challenges from Modern Applications (i-like). His work is focused on Bayesian Statistics and Monte Carlo methods. His current interests include developing novel Monte Carlo methods suitable for challenging statistical models due to big data, streaming data, or existence of high dimensional unknown parameters. He also works on data privacy in Bayesian framework.



**Murat Kaya Yapıcı** is a faculty member at Sabancı University and leads the Sabancı University Micro/Nano Devices & Systems Lab (SU-MEMS), he is also an affiliate faculty in the Department of Electrical Engineering at the University of Washington—Seattle, USA. Dr.

Yapıcı received his B.Sc. and Ph.D. degrees in Electrical Engineering from Texas A&M University—College Station (TAMU) in 2004 and 2009, respectively. Upon completion of his Ph.D. he worked as a post-doctoral researcher in the Solid State Electronics, Photonics and Nano-Engineering Laboratory at TAMU; where his work involved large area synthesis, patterning and transfer of graphene; and development of micro acousto-optic devices for medical sensing and imaging. Later, he was a member of the technical staff at the Semiconductor Technologies Research Laboratory of the Scientific and Technological Research Council of Turkey, where he engaged in the process development efforts on 0.25 $\mu$ m silicon-germanium (SiGe) BiCMOS HBT technology; as well as, process development, fabrication and yield improvement of silicon-based photodetectors which are now commercialized. From 2012 to 2016, he was a faculty member in the Department of Electrical Engineering at Khalifa University, Abu Dhabi; where he established his research program and was awarded funding from agencies including the Semiconductor Research Corporation (SRC), North Carolina—USA, for multiple projects totalling ~ 1.1M USD as the principal investigator (PI) and Co-PI. Dr. Yapıcı has +10 years of active cleanroom work and experience on device fabrication. His research interests include MEMS/NEMS, nanotechnology, sensors/actuators, microfluidics, acousto-optic devices for biological and medical applications; as well as semiconductor process technology, novel nanofabrication based on scanning probes and integration of nanomaterials, MEMS with CMOS. He has expert knowledge on a broad range of microelectronic process technologies and nanofabrication techniques, characterization tools, operation and maintenance of clean room equipment, as well as constructing experimental setups like CVD chambers for carbon nanotube and graphene growth. He is a member of SPIE, IEEE and IEEE-Engineering in Medicine and Biology Society.

## Sabancı University and Fraunhofer IML Collaboration



Sabancı University and Fraunhofer IML, one of Germany's leading applied research centers, signed a Framework Agreement for Strategic Cooperation in Logistics. The international cooperation between Sabancı University and Fraunhofer Institute for Material Flow and Logistics will support Turkey's logistics industry towards becoming a global logistics hub.

The signing ceremony of the framework agreement between Sabancı University and Fraunhofer Institute for Material Flow and Logistics was held at Sabancı University on November 27, 2015. The ceremony was hosted by Sabancı University President Professor Nihat Berker and attending were Faculty of Engineering and Natural Sciences Dean Professor Yusuf Menciloğlu, Fraunhofer IML Director Professor Michael Henke and Fraunhofer Institute Advisor Professor Mehmet Şükrü Tekbaş.

Logistics plays a great role in the foreign trade and economy of Turkey and bears great importance as a strategic area where all industries meet. Considering the recent growth in the logistics industry and Turkey's 2023 goals to reach an export volume of USD 500 billion, a GDP of USD 2 trillion and becoming a global logistics hub, the cooperation between Sabancı University and Fraunhofer IML becomes even more significant.

The objective of the Sabancı University-Fraunhofer cooperation is to conduct safe, effective and sustainable logistics operations that will increase the competitive strength of Turkey and provide economic, social and environmental value to the society, develop models that will solve the issues of the logistics industry, and implement effective logistics applications.

The logistics expertise of Sabancı University focuses on supply chain network design, distribution and collection planning, disaster logistics, sustainable transport planning, and development of decision support mechanisms based on optimization methods. In addition, there are efforts on smart transport systems, use of clean fuel-powered vehicles in logistics, and research on energy logistics. The cooperation also aims to establish new mechanisms for reinforcing university-industry partnerships, benefit from the methods and approaches developed by Fraunhofer Institute, and create value for the country by converting academic studies to tangible products and services.

Fraunhofer's mission is to undertake applied research. The cooperation with Sabancı University will enable Fraunhofer to bring its logistics knowhow to Turkey, and contribute to the development of innovative projects and applications in the field.

The cooperation between the two institutions will be coordinated by Prof. Bülent Çatay from Sabancı University and Dr. Şevket Akinlar from Fraunhofer IML.

## Nobel Laureate Scientist Aziz Sancar is at Sabancı University

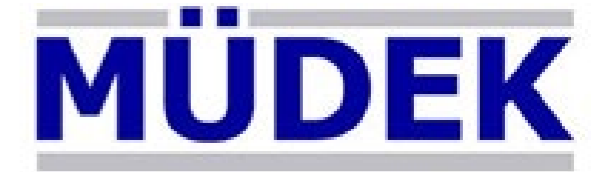


2015 Nobel Prize Laureate in Chemistry Prof. Aziz Sancar gave a lecture titled "The mechanistic fundamentals of DNA repair" at Sabancı University on Thursday, May 26, 2016. Prof. Sancar presented his work of 35-years on how cells repair their damaged DNAs and retain their genetic information to Sabancı University students.

The work of the Turkish-American scientist Prof. Aziz Sancar, faculty member in the Department of Biochemistry and Biophysics at North Carolina University, has been utilizing in the development of new treatments for cancer.



## MÜDEK Accreditation of CS and EE UG Programs



Computer Science and Engineering and Electronics Engineering Programs of the Faculty of Engineering and Natural Sciences have been accredited by MÜDEK as of 1 May 2016. MÜDEK (Association for Evaluation and Accreditation of Engineering Programs) is the only authorized association in Turkey for accreditation of engineering undergraduate programs.

MÜDEK accreditation acknowledges the suitability of our programs to high standards and expresses quality assurance. Accredited programs are eligible for "EUR-ACE Label" of the European Network for Accreditation of Engineering Education. MÜDEK is also a full member of Washington Accord, multi-party accreditation recognition agreement under the umbrella of International Engineering Alliance.

Industrial Engineering and Mechatronics Engineering Programs' MÜDEK application was submitted on January 2016 and the evaluation process is continuing.

For the ongoing efforts and other details on accreditation, visit the [accreditation web page](#).

## Center of Excellence in Composite Technologies Opens



The Center of Excellence in Composite Technologies established by Kordsa Global and Sabancı University with 100 million TRY of investment is the first of its kind in Turkey with its industry-academia-public partnership.

The Prime Minister Binali Yıldırım, Minister of Science, Industry and Technology Faruk Özlü, PhD, Minister of Development Lütfi Elvan, Minister of Transportation, Maritime and Communication Ahmet Arslan and Minister of National Defence Fikri Işık attended the inauguration ceremony of the Composite Technologies Center of Excellence on August 20, 2016. The center, for which the ground was broken in December, 2014 in İstanbul Teknopark, is a joint venture of Kordsa Global and Sabancı University.

In the opening ceremony, Sabancı Holding Board of Directors and Sabancı University Founding Board of Trustees Chair Güler Sabancı stated "Composite Technologies Center of Excellence is a pioneer and an example model for Turkey."

Composite Technologies Center of Excellence will be active in producing high-tech composite materials which created revolutions in many sectors from aviation to automotive. Sabancı University faculty members and students, and manufacturing engineers of Kordsa Global will work together in this center on the research and development, and manufacturing stages of composite materials which is regarded as the technology of the future.

For more information: <http://imc.sabanciuniv.edu>

## Center of Excellence in Data Analytics Opens

The Sabancı University Center of Excellence in Data Analytics (CEDA) was inaugurated with an event on June 20, 2016 at the Sabancı University Sakıp Sabancı Museum. In a meeting widely attended by academic and industry representatives, CEDA co-directors and Sabancı University faculty members Berrin Yanıkoğlu and Hasan Sait Ölmez discussed the objectives of the Center, gave examples from its projects, and referred to the Sabancı University Master's in Data Analytics Program that began in 2014. In addition, Sabancı University faculty members İlker Birbil, Selim Balcısoy and Kamer Kaya informed attendees about their current projects.

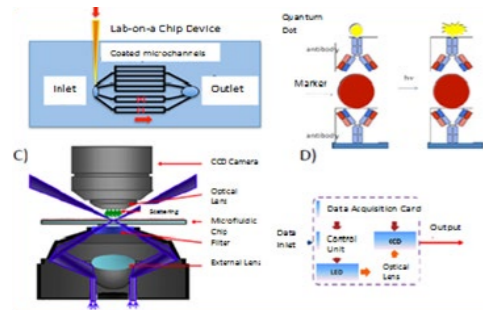
Companies in Turkey and across the world seek to mine big data and improve their processes, customer relations and other aspects. With the increase in data, the development of techniques that will make use and sense of big data

in scientific research gains importance and becomes predominant in Computer and Industrial Engineering research endeavors.

CEDA aims to become a pioneering institution that will conduct scientific work in core fields as well as interdisciplinary projects, develop joint R&D initiatives with public and private partners, and arrange training seminars and workshops for all stakeholders in data analytics. Owing to the interdisciplinary structure of Sabancı University and the importance given to industrial projects, as well as the availability of a Master's program, the center is in an ideal position.

For more information: <http://ceda.sabanciuniv.edu/en>





### Center of Excellence for Functional Surfaces and Interfaces (EFSUN)

The center aims to address challenges in functional surfaces and interfaces through the usage of micron- and submicron sized systems exploiting the tools of medicine/molecular biology, material science, nano technology, nano/microfluidics and power generation.

Activities of the center require an in-depth understanding of molecular biology, genetics and biochemistry of diseases, omics approaches, clinical collaborations, chemistry and material fundamentals, surface and interface interactions, power generation in small scale along with targeted device design.

Research and development in EFSUN Center of Excellence consists of interdependent, collaborative, interactive and complementary activities of researchers who are world-class experts in their respective fields.

For more information: <http://efsun.sabanciuniv.edu/>

### Insurance Information and Monitoring Center Cooperation



The cooperation agreement signed between Sabancı University and the Insurance Information and Monitoring Center (SBM) includes the implementation of the "Big Data Analytics to Detect Insurance Fraud" Project. The signing ceremony for the cooperation, which will be implemented within the Sabancı University Big Data Behavioral Analysis and Visualization Laboratory, took place on Friday, March 4, 2016 with the attendance of Sabancı University President Professor A. Nihat Berker and Insurance Information and Monitoring Center CEO Aydın Satıcı. Sabancı University

Big Data Behavioral Analysis and Visualization Laboratory Directors and Sabancı University faculty members Burçin Bozkaya and Selim Balcısoy were also present at the ceremony. The project will be implemented within Turkey's first and only Big Data Behavioral Analysis and Visualization Laboratory founded by Sabancı University in association with the Massachusetts Institute of Technology (MIT) and the strategic partnership of Akbank under sponsorship by SAS, a global leader in business analytics software and services, and the largest independent solution provider in business intelligence. The project aims to prevent or substantially reduce insurance fraud, one of the largest costs in the insurance sector, by using big data analytics. The claims data and insured profiles kept by SBM, the data center of the industry, will be examined by various data mining methods to identify possibly fraudulent cases or individuals with a higher probability of committing fraud in order to take precautions on a central level. Mitigating fraud will contribute to the profitability of insurance companies, which in turn is expected to translate to lower insurance premiums for honest citizens.

## Promotions

12 Associate Professors have been promoted to Professorship:

**Ali Koşar**, *Mechatronics Engineering*

**Albert Levi**, *Computer Science and Engineering*

**Ayşe Berrin Yanıkoğlu**, *Computer Science and Engineering*

**Bariş Balcıoğlu**, *Industrial Engineering*

**Batu Erman**, *Molecular Biology, Genetics and Bioengineering*

**Bülent Çatay**, *Industrial Engineering*

**Hans Frenk**, *Industrial Engineering*

**Mahmut Akşit**, *Mechatronics Engineering*

**Özgür Erçetin**, *Electronics Engineering*

**Serhat Yeşilyurt**, *Mechatronics Engineering*

**Yücel Saygın**, *Computer Science and Engineering*

**Zafer Gedik**, *Physics*

4 Assistant Professors have been promoted to Associate Professorship:

**Deniz Sezer**, *Physics*

**Gözde İnce**, *Materials Science and Nano Engineering*

**Hüsnü Yenigün**, *Computer Science and Engineering*

**İnanç Adagideli**, *Physics*

## Faculty Member Achievements

The interdisciplinary SUTAB (Sabancı University Tissue Ablating Bubbles) Project received the 2015 Elginkan Foundation Technology Award. The aim of the project is to integrate SUTAB, a patented device based on hydrodynamic cavitation, into an endoscopic device, testing it in medical applications and organizing the commercial design and development of the device while improving it for biomedical treatment. The project team consists of Sabancı University faculty members **Ali Koşar**, **Asif Şabanoviç**, **Devrim Gözüaçık** and **Mustafa Ünel** and their postdocs and graduate students.

ME faculty member **Ali Koşar** received 2016 Sedat Simavi Science Award, with his study on "micro/nano scale heat transfer and fluid flow and providing experimental data and design guidelines for futuristic cooling and microfluidic system technologies."

Mechatronics Engineering faculty member **Ali Koşar** received the 'TOYP 2015-Ten Outstanding Persons of Turkey' Award, which constitutes the Turkish Finals of the "Ten Outstanding Young Persons Of the World" Award Programme. This program is organized by the Turkish branch of JCI- Junior Chamber International, and is one of the oldest social responsibility and social awareness projects of Turkey, in the Scientific Leadership category.

Mechatronics Engineering faculty member **Ali Koşar** received "Newton Fund" in the framework of Newton Research Collaboration Programme of Royal Academy of Engineering. He will collaborate with Prof. Sefiane of the University of Edinburgh in fundamental research on micro scale boiling heat transfer.

Mechatronics Engineering faculty member **Ali Koşar** is one of the recipients of the Young Scientist of the Year Award of Science Heroes Association due to his contributions to the science, spreading of science, and use of science for the benefit of society.

Industrial Engineering faculty member **Bahattin Koç** received the 2015 Elginkan Foundation Turkish Culture Research and Technology Award in the Technology category with his work on 3D bioprinting of tissues and organs.

Molecular Biology, Genetics and Bioengineering faculty member **Batu Erman's Research Group** has been awarded a United Kingdom, Royal Society Newton International Exchanges Fellowship in collaboration with Prof. Erika Mancini of Oxford University, for a 2 year project entitled "Structure Determination of Transcription Factor Proteins Important for Cancer".

FENS faculty members **Cem Güneri (Mathematics)**, **Ali Rana Atılğan (Industrial Engineering)** and **Kemal Kılıç (Industrial Engineering)** received the 2015-2016 Graduating Class Teaching Award of Sabancı University. Physics faculty member **Emrah Kalemci** was one of the recipients of the 1st Year Auditorium Courses Teaching Awards for 2015-2016 academic year.

Molecular Biology, Genetics and Bioengineering faculty member **Devrim Gözüaçık** was invited to serve as an Associate Editor of the Autophagy Journal.

Computer Science and Engineering faculty member **Esra Erdem** received BAGEP 2015 award of the Science Academy.

Electronics Engineering faculty member **İlker Hamzaoğlu** gave one of the three invited keynote speeches at the IEEE 11th International Conference on Design and Technology of Integrated Systems on April 2016 in İstanbul.W

Molecular Biology, Genetics and Bioengineering faculty member **İsmail Çakmak** received The World Academy for Sciences 2016 Prize in Agricultural Sciences for his successful multinational projects in 12 countries and outstanding contribution to scientific literature in his field.

Mechatronics Engineering faculty member **Meltem Elitaş**, together with Anadolu Medical Center's Surgery Specialist **Tuğrul Tansuğ**, presented their work titled "Continuous laparoscopic surgical stapler" at the 8th Surgery Research Congress held by the Turkish Surgery Society and won the first prize in the Invention Contest held during the conference.

Mechatronics Engineering faculty member **Meltem Elitaş**, together with Anadolu Medical Center's Oncology Specialist Serdar Turhal, won the first prize in the 11th National Oncology Research Symposium with a project proposal titled "Design and production of a high-precision microfluid device to study the effects and tolerance of Sorafenib in liver cancer cases".

Electronics Engineering faculty member **Müjdat Çetin** has been elected to the IEEE Image, Video, and Multidimensional Signal Processing Technical Committee (IVMSP TC). The purpose of the IVMSP TC is to promote and guide the advancement of the field of image, video, and multidimensional signal processing.

Energy Technologies and Management Professional Program's coordinator and faculty member **Umut Ekmekçi** received a Special Jury Award from the Technology Development Foundation of Turkey, for his contribution to innovation management with the "National Nanotechnology Initiative".

**Yusuf Menceloğlu** and **Burcu Saner Okan** won the 2nd place award among 60 projects with their project titled "Graphene production by recycling process and its use as a reinforcing and weight-reducing agent in automotive plastics" in the Project competition about new technologies in automotive sector organized by Yıldız Technical University Technology Transfer Office.

**Yusuf Menceloğlu** and **Burcu Saner Okan** won the third prize in the 5<sup>th</sup> Automotive Project Marketplace and 5<sup>th</sup> Component Design Contest held by the Uludağ Automotive Exporters Association.

The interdisciplinary I-POST (Identifying Public Opinion Shapers in Turkey) project, conducted by **Emre Hatipoğlu** (FASS), **Brooke Luetgert** (FASS) and **Yücel Saygın** (FENS), won the "Golden Owl Award" under the Academic Owl category.

Mechatronics Engineering faculty member **Volkan Patoğlu** received BAGEP 2015 award of the Science Academy.

## Student/Alumni Achievements

Mechatronics **PhD student Arzu Özbey** received Award of Merit in Poster Competition in ASME 2015 NEMB Conference.

Electronics Engineering **PhD student Behzad Sardari's** paper "A simple configuration for static Fourier transform infrared spectrometers" won the best student paper award in SPIE (The International Society for Optics and Photonics) Photonics Europe 2016 Conference in Belgium.

**Betina Tabah's (BSBIO, 2009)** article titled "Solar-energy driven simultaneous saccharification and fermentation of starch to bioethanol for fuel-cell applications", which appeared in ChemSusChem Journal in 2015, was chosen a Key Scientific Article by the Canadian Renewable Energy Global Innovations for contributing to excellence in energy research.

**Canan Dağdeviren (MSMAT, 2009)** has been selected for Forbes 30 Under 30 in Science list.

Materials Science and Nanoengineering **PhD students Çağatay Yılmaz** and **Çağdaş Akalın** won the first place in the Technology category of the TÜBİTAK University Entrepreneurship and Innovation Competition with their project titled "In-situ structural health monitoring of composite materials with embedded fiber optic sensors".

Industrial Engineering **PhD Student Danial Esmaili** and his partners founded G.A.K Soft, a software company working on educational technologies and teaching aid products.

**Hilal Şenuysal (BSME, 2016)**'s graduation project titled "Continuous Surgical Stapler", has been accepted for the presentation at the 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society.

**Kumsal Ayşe Tekirdağ (PhDBIO, 2015)** receives the PhD Award of the Turkish Molecular Biology Association.

Electronics Engineering **PhD student Mehdi Salehi Heydar Abad** together with his co-authors D. Gündüz and Ö. Erçetin are awarded the Best Paper Award of the

MAC and Cross-Layer Design Track at the IEEE Wireless Communications and Networking Conference (WCNC) 2016, for their paper titled "Energy harvesting wireless networks with correlated energy sources".

**Samet Zehir (BSEE, 2009; MSEE, 2011)** was a finalist at the paper competition at the 2016 IEEE International Microwave Symposium with his paper titled "A 60 GHz 64-element Phased-Array Beam-Pointing Communication System for 5G 100 meter Links up to 2 GBps".

**R. Tuğçe Yazıcıgil (BSEE, 2009)** received the Columbia University Electrical Engineering Collaborative Research Award for her inter-disciplinary PhD research work. Tuğçe is also selected to serve as an IEEE Solid-State Circuits Society Women in Engineering Initiative Committee member.

**Tolga Birdal (BSEE, 2008)** receives EMVA (European Machine Vision Association) Young Professional Award 2016.

**Tolga Dinç (BSEE, 2010; MSEE, 2012)** has been awarded an IEEE Microwave Theory and Techniques Society (MTT-S) Graduate Fellowship for 2016. This is the highest honor that the IEEE MTT-S gives to top graduate studentcognizing their research activities and promise in microwave engineering.

Industrial Engineering students **Yıldızhan Koç, Egemen Tali (BSIE, 2015)** and **Kemal Berkay Tüzün (BSIE, 2016)** won the 1st place at the 12th Interuniversity Logistics Case Competition.



## 2015 Alumni Attending Graduate School

**Barış Can Vural (BSCS, 2015)**, *Vrije Universiteit Brussels, PhD Study*  
**Barış Kendal Polat (BSIE, 2015)**, *Hult University, MBA*  
**Barış Süataç (BSME, 2015)**, *Kyoto University, MS Study*  
**Başak Tozlu (MSIE, 2015)**, *HEC Montreal, PhD Study*  
**Bilal Demir (BSEE, 2015)**, *Ecole Polytechnique Federale de Lausanne, PhD Study*  
**Bilgesu Sezgin (BSEE, 2015)**, *KU Leuven, MS Study*  
**Burak Gür (BSBIO, 2015)**, *Georg-August-Universität Göttingen, MS Study*  
**Büke Bicioğlu (BSIE, 2015)**, *Queen Mary University of London, MS Study*  
**Büşra İşbilen (BSIE, 2015)**, *Tilburg University, MS Study*  
**Cengizhan Dönmez (BSIE, 2015)**, *University of Edinburgh, MS Study*  
**Ebrar Özkalay (BSME, 2015)**, *Delft University of Technology, MS Study*  
**Gamze Tillem (MSCS, 2015)**, *Delft University of Technology, PhD Study*  
**Kerem Çetiner (BSIE, 2015)**, *University of Warwick, MS Study*  
**Koray Onat (BSMAT, 2015)**, *University of California, Berkeley, MS Study*  
**Kousar Aslam (MSCS, 2015)**, *Eindhoven University of Technology, PhD Study*  
**Liana Behmoiras (BSBIO, 2015)**, *Brandeis University, PhD Study*  
**Mehmetali Kulunyar (BSIE, 2015)**, *New York University, MS Study*  
**Mehmet Ozan Sardoğan (BSME, 2015)**, *University College London, MS Study*  
**Melih Güldoğuş (BSME, 2015)**, *KTH Royal Institute of Technology, MS Study*  
**Mesut İnaç (MSEE, 2015)**, *Technische Universität Berlin, PhD Study*  
**Nil Şahin (BSBIO, 2015)**, *University of Toronto, PhD Study*  
**Sarmad Ahmed Shaikh (MSEE, 2015)**, *National University of Singapore, PhD Study*  
**Sarp Kafescioğlu (BSIE, 2015)**, *EAE Business School, PhD Study*  
**Ömer Coşkun (BSME, 2015)**, *University of Essex, MS Study*  
**Umut Gönülkırılmaz (BSIE, 2015)**, *University of Warwick, MS Study*  
**Vildan Bayram (MSMAT, 2015)**, *University of Manchester, PhD Study*  
**Zeynep Hatun (BSIE, 2015)**, *Delft University of Technology, PhD Study*

## Alumni in Postgraduate Positions

**Ahmet Batal (PhDMATH, 2014)**, *İzmir Institute of Technology, Department of Mathematics, Assist. Prof.*  
**Andaç Hamamcı (PhDEE, 2013)**, *Yeditepe University, Biomedical Engineering Department, Assist. Prof.*  
**Cengiz Örencik (PhDCS, 2014)**, *Beykent University, Faculty of Engineering and Architecture, Assist. Prof.*  
**Ceren Özek (BSBIO, 2010)**, *Harvard Medical School, Post-doc Fellow*  
**Halil Şen (PhDIE, 2015)**, *INRIA, France, Post-doc Fellow*  
**İdil Ülengin (BSBIO, 2009)**, *Stanford University, Post-doc Fellow*  
**Kumsal Ayşe Tekirdağ (PhDBIO, 2015)**, *Albert Einstein College of Medicine, Yeshiva University, New York, Post-doc Fellow*  
**Ozan Tokatlı (PhDME, 2015)**, *University of Reading, Post-doc Fellow*  
**R. Tuğçe Yazıcıgil (BSEE, 2009)**, *MIT Electrical Engineering and Computer Science Department, Post-doc Researcher*  
**Rahim Dehkharghani (PhDCS, 2015)**, *University of Bonab, Iran, Faculty Member*  
**Rüştü Umut Tok (PhDME, 2015)**, *University of California, Los Angeles, Post-doc Fellow*  
**Samet Zahir (BSEE, 2009; MSEE, 2011)**, *University of California, San Diego, Post-doc Fellow*  
**Sibel Şahin (PhDMATH, 2014)**, *Université Toulouse III – Paul Sabatier, Post-doc Fellow*  
**Tarik Uzunovic (PhDME, 2015)**, *University of Sarajevo, Faculty of Electrical Engineering, Assist. Prof.*  
**Uraz Cengiz Türker (PhDCS, 2014)**, *Gebze Technical University, Department of Computer Engineering, Assist. Prof.*

## FENS Excellence in Teaching Award

Our outstanding graduate students received their certificates to acknowledge their teaching achievements in 2015-2016 Academic Year.

The Recipients, their programs and the courses they supported are as follows:

**Dicle Yağmur Özdemir**, MSIE student, IE 305- Simulation  
**Ezgi Demirel**, MSCS student, CS 201- Introduction to Computing  
**Özgün Elçi**, MSIE student, IE 301- Deterministic Models in Operations Research  
**Sonya Javadi Khatab**, PhDIE student, IE 302- Stochastic Models in Operations Research  
**Yunus Akkoç**, PhDBIO-UG student, BIO 306 - Microbiology & BIO 301- Introduction to Molecular Biology

## Gürsel Sönmez Awards

Our colleague Dr. Gürsel Sönmez tragically passed away in 2006. In his short but brilliant academic life, he made important contributions to science. In order 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. The awardees are determined upon reaching a full consensus within the Committee, after very detailed and rigorous evaluation of all applications. The following students are the recipients of the Gürsel Sönmez Research Award in 2015-2016.



**Beyza Vuruşaner** received PhD degree in Molecular Biology, Genetics and Bioengineering with a thesis titled "Survival signals induced by cholesterol oxidation by products in atherosclerosis" under supervision of Hüveyda Başağa. Beyza's work during her Ph. D. has contributed significantly to the advancement of oxidative stress signaling and reactive oxygen control in cells. Lipid oxidation is a very important phenomenon that has implications in development of serious human diseases including cancer, Alzheimer's disease and atherosclerosis. She will continue as a Post- Doctoral Researcher at Institute of Engineering and Natural Sciences, Sabancı University.



**Jamal Seyyed Monfared Zanjani** received PhD degree in Materials Science and Engineering with a thesis titled "Novel design and manufacturing of advanced multifunctional structural nanocomposites containing self-healing fibers and graphene sheets with structural health monitoring capabilities" under supervision of Mehmet Yıldız and Burcu Saner Okan. He worked in the field of composite material development and structural health monitoring. During his stay at Sabancı University, he actively conducted research in synthesis and characterization of different carbon based nanomaterials and their effect in different polymeric matrices that are used in composites. He will continue as a Post- Doctoral Researcher at Institute of Engineering and Natural Sciences, Sabancı University .



**Nima Tofighi** received PhD degree in Mechatronics with a thesis titled "Development of an incompressible smoothed particle hydrodynamics method for electrohydrodynamics of immiscible fluids and rigid particles" under supervision of Mehmet Yıldız. During his PhD research in Sabancı University, Nima has made noteworthy contributions to numerical solutions of complex viscoelastic flow problems with smooth particle hydrodynamics (SPH) method. In particular, he developed a general incompressible approach to overcome the accuracy issues of the SPH methods efficiently and applied this approach successfully to fluid-solid interactions of Newtonian and non-Newtonian fluids, electro hydrodynamics, multiphase flows and the motion of rigid bodies in stationary fluids under external forces such as the gravity and the electric field. He will continue as a Postdoctoral Research Fellow at the Mechanical Engineering Department of The University of Victoria in Canada.



This year, as the 10<sup>th</sup> anniversary of Dr. Gürsel Sönmez's loss, the Award Committee organized a poster day for the announcement of the awards. All applicants as well as a large number of FENS faculty and graduate students attended this event, where a presentation was made by Gürsel Sönmez's colleagues, introducing him and his works to the younger generations of students. Gathering continued with presentation of some of the former awardees and their career paths. At the end, all applicants

of this year were acknowledged by presenting a certificate for planting a tree by a donation to TEMA foundation on their behalf, in the memory of Dr. Gürsel Sönmez, and the winners of this year were announced. After the announcement of the awards, all attendees enjoyed the poster session, where the award applicants presented their work to each other and the entire faculty.

Information about Dr. Gürsel Sönmez Awards and winners can be found at: <https://fens.sabanciuniv.edu/en/awards/dr-gursel-sonmez-research-award>

## Sakıp Sabancı Award for the Highest Ranking Undergraduate Student



**Barza Nisar** graduated from the Mechatronics Engineering Program. She will pursue Master degree in Robotics, Systems and Control at ETH Zurich in Fall 2016-17.

## Facts and Figures

STAFF PROFILE (Numbers)	(Numbers)
Professors	41
Associate Professors	38
Assistant Professors	12
<b>TOTAL NUMBER OF FULL-TIME FACULTY MEMBERS</b>	<b>91</b>
Post-docs	53
Full-time instructors	3
Researchers	13
Research Assistants	6
Executive & Professional Staff	24

Program	Professors	Associate Professors	Assistant Professors	Instructor	Post-doc	Researcher	Research Assistant	Total
Computer Science and Engineering	5	3	2		1		1	11
Electronics Engineering	3	7	1		4	1	1	13
Industrial Engineering	4	5	3		3		1	13
Information Technology			1	3				4
Materials Science and Nanoengineering	5	5	2		5		1	13
Mathematics	6	4			4			10
Manufacturing Engineering	1	2						3
Mechatronics Engineering	5	5	1		3		1	12
Molecular Biology, Genetics and Bioengineering	6	3			8		1	10
Nano- Energy Technologies and Management			1					1
Nanotechnology Research and Application Center					23	12		35
Physics	6	4	1		2			11
<b>Grand Total</b>	<b>41</b>	<b>38</b>	<b>12</b>	<b>3</b>	<b>53</b>	<b>13</b>	<b>6</b>	<b>136</b>

## EDUCATION

FENS offers undergraduate degrees in 6 disciplines, graduate degrees in 9 disciplines and minor honor programs in 4 disciplines.

- Computer Science and Engineering (BS-MS -PhD)  
<http://cs.sabanciuniv.edu/>
- Electronics Engineering (BS-MS -PhD)  
<http://ee.sabanciuniv.edu/>
- Industrial Engineering (BS-MS -PhD)  
<http://ie.sabanciuniv.edu/>
- Manufacturing Engineering (MS-PhD)  
<http://mfg.sabanciuniv.edu/>
- Materials Science and Nano Engineering (BS-MS -PhD)  
<http://mat.sabanciuniv.edu/>
- Mechatronics (BS-MS -PhD)  
<http://me.sabanciuniv.edu/>
- Molecular Biology, Genetics and Bioengineering (BS-MS -PhD)  
<http://bio.sabanciuniv.edu/>
- Chemistry (minor BS)  
<http://chem.sabanciuniv.edu/>
- Energy (minor BS)  
<http://energy-minor.sabanciuniv.edu/en>
- Mathematics (minor BS-MS-PhD)  
<http://math.sabanciuniv.edu/>
- Physics (minor BS-MS-PhD)  
<http://chem.sabanciuniv.edu/>

### Professional Graduate Programs

- Data Analytics  
<http://chem.sabanciuniv.edu/>
- Energy Technologies and Management  
<http://energy-minor.sabanciuniv.edu/en>
- Information Technology  
<http://math.sabanciuniv.edu/>
- Nanotechnology  
<http://chem.sabanciuniv.edu/>

## Facts and Figures

### FENS Program Declarations

BSBIO	21	% 4,1
BSCS	92	% 17,9
BSEE	42	% 8,2
BSIE	274	% 53,2
BSMAT	19	% 3,7
BSME	67	% 13,0
<b>Total</b>	<b>515</b>	<b>% 100</b>

Declarations in 2015-2016 Academic Year		
Faculty of Engineering and Natural Sciences	515	66 %
School of Management	133	17 %
Faculty of Arts and Social Sciences	133	17 %
<b>TOTAL</b>	<b>781</b>	<b>100%</b>

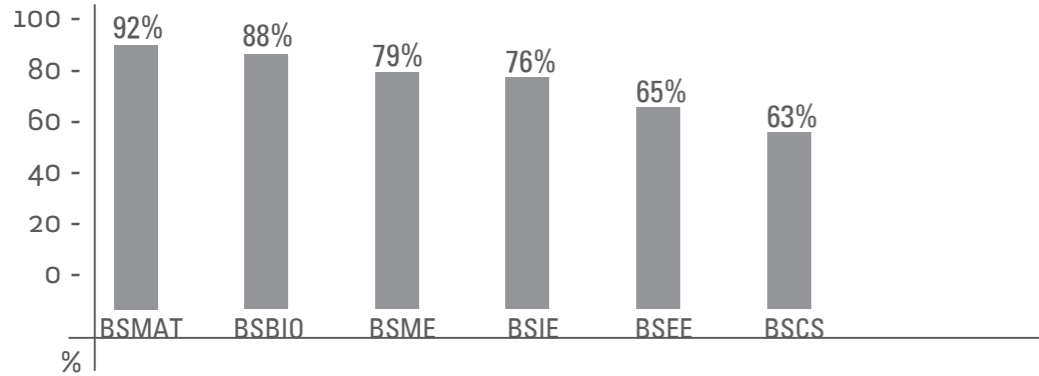
2015-2016 Fall Undergraduate Student Enrollment	Undergraduate
Molecular Biology, Genetics and Bioengineering	57
Computer Science and Engineering	150
Electronics Engineering	76
Industrial Engineering	665
Materials Science and Nanoengineering	53
Mechatronics Engineering	194
Undeclared	753
<b>Grand Total</b>	<b>1948</b>

2015-2016 Fall Graduate Student Enrollment	PhD	MS	Total
Computer Science and Engineering	34	24	58
Data Analytics		30	30
Electronics Engineering	31	22	53
Energy Technologies and Management		27	27
Industrial Engineering	17	39	56
Information Technology		28	28
Materials Science and Nanoengineering	40	29	69
Mathematics	15	8	23
Mechatronics Engineering	31	22	53
Molecular Biology, Genetics and Bioengineering	34	14	48
Physics	16	4	20
<b>Grand Total</b>	<b>218</b>	<b>247</b>	<b>465</b>

### Courses Offered in 2015-2016

Program / Subject	Level	2015-2016 Academic Year			Total
		Fall	Spring	Summer	
BIO	Undergraduate	8	10		18
	Graduate	9	8		17
CHEM	Undergraduate	2	2		4
	Graduate	1			1
CS	Undergraduate	14	13	4	31
	Graduate	10	6	1	17
DA	Graduate	4	5	4	13
EE	Undergraduate	11	9		20
	Graduate	12	11		23
ENS	Undergraduate	10	9	5	24
		5	2		7
ETM	Graduate	3	3	4	10
IE	Undergraduate	19	15	8	42
	Graduate	7	6		13
IF	Undergraduate	1	1		2
IT	Graduate	4	4	6	14
MAT	Undergraduate	7	8		15
	Graduate	5	7		12
MATH	Undergraduate	8	9	7	24
	Graduate	7	4		11
ME	Undergraduate	9	9		18
	Graduate	1	7		8
NS	Undergraduate	7	9		16
	Graduate	1			1
PHYS	Undergraduate	4	1		5
		4	5		9
<b>Total</b>		<b>173</b>	<b>163</b>	<b>39</b>	<b>375</b>

### 4-Year Undergraduate Students Graduation Rate



### Alumni 2015-2016

Undergraduate Programs	Fall 2015-2016	Spring 2015-2016	Summer 2015-2016	Total
Molecular Biology, Genetics and Bioengineering		14	2	16
Computer Science and Engineering	9	29	5	43
Electronics Engineering	1	18	4	23
Materials Science and Nanoengineering	2	9	2	13
Mechatronics Engineering	16	47	8	71
Industrial Engineering	62	127	28	217
<b>Total</b>	<b>90</b>	<b>244</b>	<b>49</b>	<b>383</b>

Graduate Programs	2015-2016 Fall			2015-2016 Spring		
	MSc	PhD	Total	MSc	PhD	Total
Computer Science and Engineering	4	1	5	7	2	9
Data Analytics	2		2	20		20
Electronics Engineering	4	1	5	8	5	13
Energy Technologies & Management	1		1			
Energy Technologies & Management (Non Thesis)				17		17
Industrial Engineering	4		4	6	1	7
Information Technology	2		2	18		18
Materials Science and Nanoengineering	3	2	5	5	5	10
Mathematics		2	2	2	1	3
Mechatronics Engineering	1	1	2	8	1	9
Molecular Biology, Genetics and Bioengineering	3	3	6	5	2	7
Physics				3	3	6
<b>Grand Total</b>	<b>24</b>	<b>10</b>	<b>34</b>	<b>99</b>	<b>20</b>	<b>119</b>

### Application, Acceptance and Enrollment Statistics of Graduate Students

2015-2016 Fall	MS					PhD				
	Applica-tion	Accept-ance	Enroll-ment	Enroll/ Accept.	Accept./ Appl.	Applica-tion	Accept-ance	Enroll-ment	Enroll/ Accept.	Accept./ Appl.
Computer Science and Engineering	41	11	7	64%	27%	22	8	7	88%	36%
Data Analytics (Non Thesis)	61	28	28	100%	46%	No PhD in DA program				
Electronics Engineering	46	16	8	50%	35%	18	13	6	46%	72%
Industrial Engineering	47	20	17	85%	43%	17	7	4	57%	41%
Energy Technologies and Management (Non Thesis)	65	31	25	81%	48%	No PhD in ENE program				
Information Technology	54	25	19	76%	46%	No PhD in IT program				
Materials Science and Nanoengineering	40	19	12	63%	48%	31	17	5	29%	55%
Mathematics	15	5	1	20%	33%	5	2	1	50%	40%
Mechatronics	36	12	7	58%	33%	22	12	2	17%	55%
Molecular Biology, Genet-ics and Bioengineering	49	9	6	67%	18%	29	8	6	75%	28%
Physics	5	3	3	100%	60%	6	1		0%	17%

2015-2016 Spring	MS					PhD				
	Applica-tion	Accept-ance	Enroll-ment	Enroll/ Accept.	Accept./ Appl.	Applica-tion	Accept-ance	Enroll-ment	Enroll/ Accept.	Accept./ Appl.
Computer Science and Engineering	24	12	3	25%	50%	12	3	1	33%	25%
Electronics Engineering	11	3	2	67%	27%	12	5	1	20%	42%
Industrial Engineering	22	3	2	67%	14%	13	3	3	100%	23%
Energy Technologies and Management	1	1	1	100%	100%	No PhD in ENE program				
Materials Science and Nanoengineering	27	7	4	57%	26%	20	11	8	73%	55%
Mathematics	1				0%					
Mechatronics	15	7	5	71%	47%	15	5	3	60%	33%
Molecular Biology, Genetics and Bioengineering	12	4	4	100%	33%	16	10	8	80%	63%
Physics	2	1	1	100%	50%	4	2	2	100%	50%
Manufacturing Engineer-ing (New program)	15	6	4	67%	40%	13	9	6	67%	69%

## PhD Dissertations

Name/Surname	Program	Thesis Title	Term	Thesis Advisor
Abdullah Kamadan	Mechatronics Engineering	Development of "Co-Design Frameworks for Optimal Variable Compliant Actuation	2015-2016 Fall	Güllü Kızıltaş Şendur
Anastasia Zakharyuta	Molecular Biology, Genetics and Bioengineering	Nanosized Crosslinked Protein Aggregates (NANO-CLPA)	2015-2016 Fall	Alpay Taralp
Bahar Shamloo	Molecular Biology, Genetics and Bioengineering	Characterization of the C-Terminal Domain of the p53 Tumor Suppressor	2015-2016 Spring	Batu Erman
Berkay Topçu	Electronics Engineering	Security/privacy analysis of biometric hashing and template protection for fingerprint minutiae	2015-2016 Spring	Hakan Erdoğan
Beyza Vuruşaner Aktaş	Molecular Biology, Genetics and Bioengineering	Survival signals induced by cholesterol oxidation by products in atherosclerosis	2015-2016 Fall	Hüveyda Başağa
Dilek Çakıroğlu	Materials Science and Engineering	An Investigation on Electrochemical Performance of Supercapacitors Assembled with Vertically Aligned & Entagled Carbon Nanotube and Conducting Polymer	2015-2016 Spring	Fevzi Çakmak Cebeci
Emre Özeren	Electronics Engineering	High Resolution, Process and Temperature Compensated Phase Shifter Design Using a Self Generated Look Up Table	2015-2016 Spring	Yaşar Gürbüz
Ezgi Dünder Tekkaya	Materials Science and Engineering	Synthesis and Characterization of Metal Loaded MCM-41 Zeotypes and their Utilization in Hydrogen	2015-2016 Fall	Yuda Yürüm
Funda Özdemir	Mathematics	On Additive Cyclic Codes	2015-2016 Spring	Cem Güneri
Gülcan Çorapçıoğlu	Materials Science and Engineering	Conventional and Flash Sintering of Stoichiometric, Alkaline or Niobium Excess Sodium Potassium Niobate Ceramics	2015-2016 Spring	Mehmet Ali Gülgün
Hasan Kurt	Materials Science and Engineering	Investigating the effects of nanostructured dielectric lithium fluoride and plasmonic gold interlayers in organic photovoltaics, including the use of in-situ impedance spectroscopy	2015-2016 Spring	Cleva Ow- Yang
İbrahim Saygın Topkaya	Electronics Engineering	Visual Detection and Tracking of Unknown Number of Objects with Nonparametric Clustering Methods	2015-2016 Spring	Berrin Yanıkoğlu
İlker Arslan	Mathematics	Characterization of the potential smoothness of one-dimensional Dirac operator subject to general boundary conditions and its Riesz basis property	2015-2016 Fall	Plamen Djakov
İskender Yalçinkaya	Physics	Spreading and Transport properties of Quantum Walks	2015-2016 Spring	Zafer Gedik
Jamal Seyyed Monfared Zanjani	Materials Science and Engineering	Novel Design and Manufacturing of Advanced Multifunctional Structural Nanocomposites Containing Self-Healing Fibers and Graphene Sheets with Structural Health Monitoring Capabilities	2015-2016 Spring	Mehmet Yıldız
				Burcu Saner Okan

Name/Surname	Program	Thesis Title	Term	Thesis Advisor
Leyla Işık	Mathematics	On Complete Mappings and Value Sets of Polynomials over Finite Fields	2015-2016 Fall	Alev Topuzoğlu
Mahmoud Khaled Alewiwi	Computer Science and Engineering	Efficient and Secure document Similarity Search Over Cloud Utilizing Mapreduce	2015-2016 Fall	Erkay Savaş
Melik Yazıcı	Electronics Engineering	High Dynamic Range Pixel Architecture with smart Light Intensity Decision Unit	2015-2016 Spring	Yaşar Gürbüz
Melike Mercan Yıldızhan	Materials Science and Engineering	Structural and Electronic Investigation of Li2O-TiO2 System	2015-2016 Spring	Mehmet Ali Gülgün
Mirmehdi Seyyedesfahlan	Electronics Engineering	On-Chip Antennas and PCB Packaged phased-Array Radar Receiver Front-End MM-WAVE Frequencies	2015-2016 Fall	İbrahim Tekin
Muhammet Yıldız	Computer Science and Engineering	Biometric Layering: Template Security and Privacy Through Multi-Biometric Template Fusion	2015-2016 Spring	Berrin Yanıkoğlu
Nima Tofighi	Mechatronics Engineering	Development of an Incompressible Smoothed Particle Hydrodynamics Method for Electrohydrodynamics of Immiscible Fluids and Rigid Particles	2015-2016 Spring	Mehmet Yıldız
Onur Benli	Physics	Investigation of Young Neutron Star Populations with fallback Disk Model	2015-2016 Spring	Ünal Ertan
Onur Akbal	Physics	Physics in the Neutron Star Crust and Glitch Phenomena	2015-2016 Spring	Cihan Saçlıoğlu
Ömer Ceylan	Electronics Engineering	Digital Readout Integrated Circuit (Droic) Implementing Time Delay and Integration (TDI) for Scanning Type Infrared Focal Plane Arrays (IRFPA)	2015-2016 Spring	Yaşar Gürbüz
Öznur Bayraktar	Molecular Biology, Genetics and Bioengineering	Bir Otofaji Hedefi olarak VCP/p97 Mutant Proteini	2015-2016 Spring	Devrim Gözüaçık
Süheyla Çetin	Computer Science and Engineering	In Vivo Verilerinde Tübüler Yapıların ve Liflerin Modellenmesi: İnsan Damar Sistemi ve Ak Madde Yolaklarında Asimetrisinin Ortaya Çıkarılması	2015-2016 Spring	Gözde Ünal
Tuğçe Akkaş	Materials Science and Engineering	Novel Methods to Prepare Cross-Linked Enzyme Aggregates (CLEA). Challenging Immobilization Models- Urease and Pepsin	2015-2016 Fall	Alpay Taralp
Ümmühan Akbay	Industrial Engineering	Behavioral Experiments on Supply Chain Contracting	2015-2016 Spring	Murat Kaya
Yasemin Ceylan	Molecular Biology, Genetics and Bioengineering	Role of Magnesium Nutrition in Wheat Yield under Different Abiotic Stress Factors	2015-2016 Fall	İsmail Çakmak





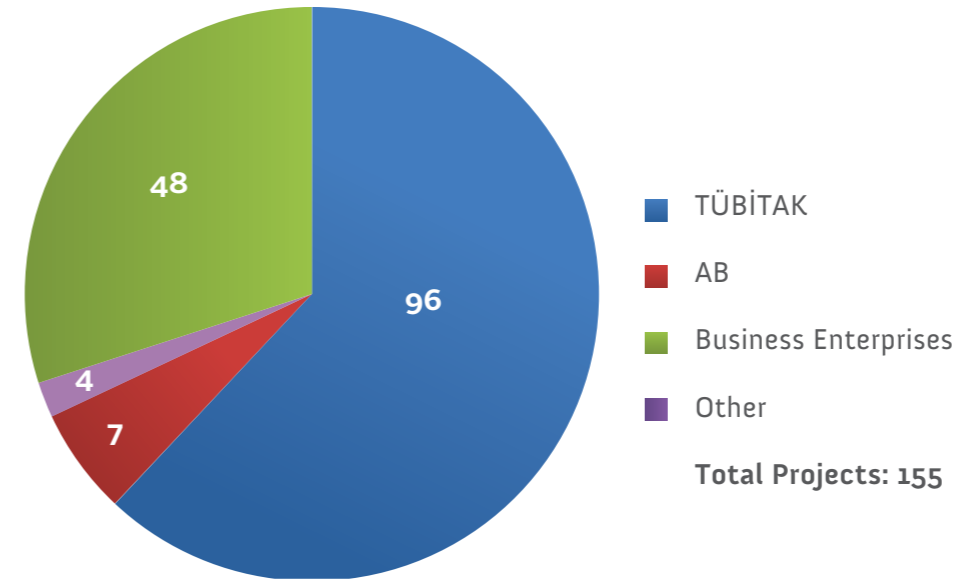
## RESEARCH

Paralleling its academic programs, FENS research is concentrated on areas at the forefront of science and technology, from nanoscience to genetics and from robotics to the design of new materials. Both basic and applied research are carried out and encouraged in FENS. Our research is funded by national (such as TÜBİTAK) and international (such as EU) agencies. An important aspect of FENS research is its interdisciplinary nature. Collaborative research with industry as well as contributions to high tech incubation and startup efforts are also among the fundamentals of the FENS research mission.

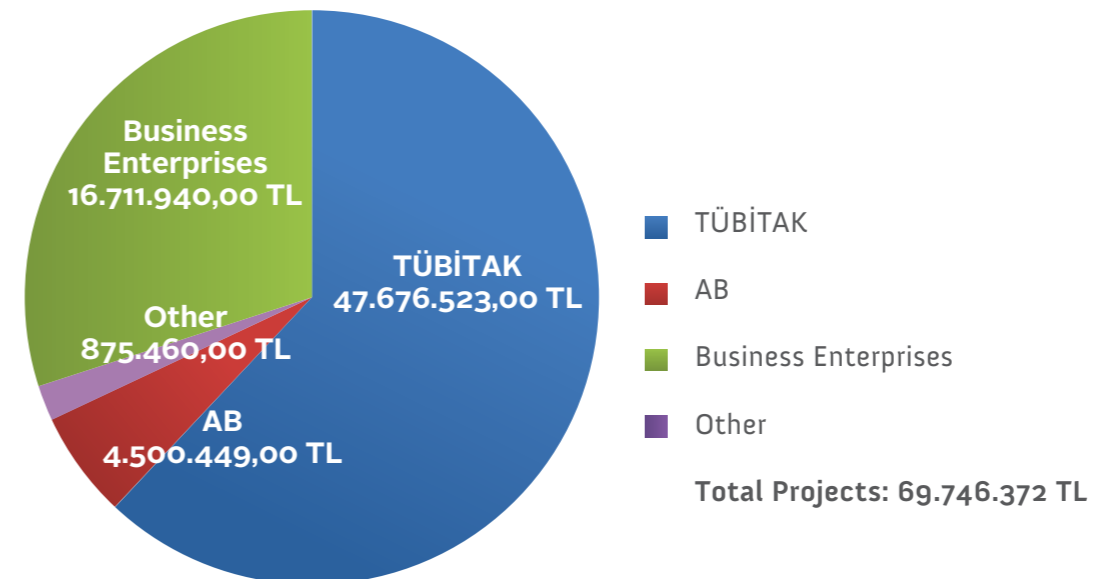


## Facts and Figures

### Projects



\*Total projects of June 2016



\*\*Total projects budget as of June 2016

## 2015-2016 Granted Patents

Inventor	Invention Subject	State
Ahmet Onat	Position Detection Device For Movable Magnet Type Linear Motor	KR
Ali Koşar	An Apparatus for Using Hydrodynamic Cavitation In Medical Treatment	TR
Ali Koşar	An Apparatus for Using Hydrodynamic Cavitation in Medical Treatment	CN
Alpay Taralp	Crosslinked Protein Nanocrystals, Crosslinked Protein Nanoaggregates and Method Of Preparation Thereof	TR
Alpay Taralp	Crosslinked Protein Nanocrystals, Crosslinked Protein Nanoaggregates and Method of Preparation Thereof	CA
Alpay Taralp, Yusuf Menceloğlu, Eren Şimşek	Preparation of Substantially Quaternized Ammonium Organosilane Composition and Self-Stabilizing Aqueous Solution Thereof (Antimic)	EP
Alpay Taralp, Yusuf Menceloğlu, Eren Şimşek	Preparation of Substantially Quaternized Ammonium Organosilane Composition and Self-Stabilizing Aqueous Solution Thereof (Antimic)	CN
Cemal Yılmaz, Mehmet Çağrı Çalpur	Interleaving Coverage Criteria Oriented Testing of Multi-Threaded Applications	TR
Devrim Gözüaçık, Gözde Korkmaz	Use of Mirnas for The Diagnosis, Propylaxis, Treatment and Follow-Up of Diseases Involving Macroautophagy Abnormalities	EP
Devrim Gözüaçık, Gözde Korkmaz	Use Of Mirnas For The Diagnosis, Propylaxis, Treatment and Follow-Up Of Diseases Involving Macroautophagy Abnormalities	TR
Hayriye Ünal, Yusuf Z. Menceloğlu, Serkan Ünal, Fevzi Ç. Cebeci	Food Packaging Material With Antibacterial, Ethylene Scavenging And Barrier Properties	US
İbrahim Tekin	A Novel Ultra Wideband Waveform Generator Circuit	EP
İbrahim Tekin	A Novel Ultra Wideband Waveform Generator Circuit	TR
İsmet Kaya; Cenk Yanık	Epitaxial Graphene With Thickness Modulation	TR
Kürşat Şendur, Ali Koşar	Nanoplasmonic Device With Nanoscale Cooling	JP
Volkan Patoğlu	A Series Elastic Holonomic Mobile Platform for Upper Extremity Rehabilitation	EP
Volkan Patoğlu	A Series Elastic Holonomic Mobile Platform for Upper Extremity Rehabilitation	TR
Yasar Gurbuz, Anjum Qureshi, Javed Hussain, Niazi Kolkar Mohammed	Novel Method and Device for Whole-Cell Bacterial Bio-Capacitor Chip for Detecting Cellular Stress Induced by Toxic Chemicals	CN
Yaşar Gürbüz, Hüseyin Kayahan	Self-Reset Asynchronous Pulse Frequency Modulated Droic With Extended Counting and Having Reduced Quantization Noise	US
Yaşar Gürbüz, Melik Yazıcı, Hüseyin Kayahan, Ömer Ceylan	Large Format Short Wave Infrared (Swir) Focal Plane Array with Low Noise and High Dynamic Range	US

## 2015-2016 Patent Applications

Inventor	Invention Subject	State
Ali Koşar	An Apparatus For Using Hydrodynamic Cavitation In Medical Treatment	TR
Ali Koşar	An Energy Harvesting Device	PCT
Ali Koşar, Kürşat Şendur	Flow System For Avoiding Particle Agglomeration	PCT
Ali Koşar, Kürşat Şendur	Flow System For Avoiding Particle Agglomeration	TR
Bahattin Koç; Navid Khani; Ali Nadernezhad	Method For Three Dimensional Printing Of Heterogeneous Structures	PCT
Lale Işikel Şanlı, Selmiye Alkan Gürsel, Rokhsareh Bakhtiari, Sajjad Ghobadi	Graphene Based Fibers And Production Method Thereof	PCT
Özgür Gürbüz, Deniz Marlalı	Synchronized-Contention Window Full-Duplex Mac Protocol For Enabling Full-Duplex Communication In Wireless Local Area Network	PCT
Selmiye Alkan Gürsel, Lale Işikel Şanlı, Sagh Sadeghi	Proton Exchange Membrane And A Method For Preparation Theoref (High Quality Proton Exchange Membranes Using Poly(Vinylidene Fluoride) Powder Via Radiation Induced Grafting)	EP
Yusuf Z. Menceloğlu, Özge Akbulut, Omid Akhlaghi	A Polymeric Admixture For Suspensions	EP
Yusuf Ziya Menceloğlu, Burcu Saner Okan, Mehmet Yıldız	Fabrication Of Three Dimensional Graphene With Controlled Hollowness And Graphene-Based Hybrid Spheres By Core-Shell Electrospinning	US

## SCI Publications in 2015

FENS research areas and efforts are best presented by our publications. The following data is grouped into programs according to the affiliation of the faculty members, post-docs, researchers and students, whose names are highlighted. Some joint-program publications are written separately at the end.

### Computer Science and Engineering

Deveci, M., **Kaya, K.**, Uçar, B., Çatalyürek, U.V., "Hypergraph partitioning for multiple communication cost metrics: model and methods", *Journal of Parallel and Distributed Computing*, vol. 77, 69-83, 2015.

Dufosse, F., **Kaya, K.**, Uçar, B., "Two approximation algorithms for bipartite matching on multicore architectures", *Journal of Parallel and Distributed Computing*, vol. 85, 62-78, 2015.

**Erdem, E., Öztok, U.**, "Generating explanations for biomedical queries", *Theory and Practice of Logic Programming*, vol. 15, 35-78, 2015.

Hierons, R.M., **Türker, U.C.**, "Incomplete distinguishing sequences for finite state machines", *Computer Journal*, vol. 58, 3089-3113, 2015.

Janies, D.A., Pomeroy, L.W., Krueger, C., Zhang, Y., Şentürk, İ.F., **Kaya, K.**, Çatalyürek, U.V., "Phylogenetic visualization of the spread of H7 influenza A viruses", *Cladistics*, vol. 31, 679-691, 2015.

Jourdan, G.V., Ural, H., **Yenigün, H.**, "Reduced checking sequences using unreliable reset", *Information Processing Letters*, vol. 115, 532-535, 2015.

### Electronics Engineering

**Aydın, N., Karaca, M., Erçetin, Ö.**, "Scheduling and power control for energy-optimality of low duty cycled sensor networks", *International Journal of Distributed Sensor Networks*, 2015.

**Coşar, S., Çetin, M.**, "Sparsity-driven bandwidth-efficient decentralized tracking in visual sensor networks", *Computer Vision and Image Understanding*, vol. 139, 40-58, 2015.

**Çetin, S., Ünal, G.**, "A higher-order tensor vessel tractography for segmentation of vascular structures", *IEEE Transactions on Medical Imaging*, vol. 34, 2172-2185, 2015.

**Dinç, T., Özeren, E., Çalışkan, C., Kayahan, H., Gürbüz, Y.**, "X-band SiGe bi-complementary metal-oxide semiconductor transmit/receive module core chip for phased array RADAR applications", *IET Microwaves Antennas & Propagation*, vol. 9, 948-956, 2015.

**Eritmen, K., Keskinöz, M.**, "Improving the performance of wireless sensor networks through optimized complex field network coding", *IEEE Sensors Journal*, vol. 15, 2934-2946, 2015.

**Eritmen, K., Keskinöz, M.**, "Symbol-error rate optimized complex field network coding for wireless communications", *Wireless Networks*, vol. 21, 2467-2481, 2015.

**Kafieh, R.**, Rabbani, H., Hajizadeh, F., Abramoff, M.D., Sonka, M., "Thickness mapping of eleven retinal layers segmented using the diffusion maps method in normal eyes", *Journal of Ophthalmology*, 2015.

**Memiş, M.O., Erçetin, Ö., Gürbüz, Ö., Azhari, S.V.**, "Resource allocation for statistical QoS guarantees in MIMO cellular networks", *EURASIP Journal on Wireless Communications and Networking*, 2015.

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