



Faculty of Engineering and Natural Sciences

2013 Annual Report

 **DEAN'S MESSAGE**

 **HIGHLIGHTS**

 **EDUCATION**

 **RESEARCH**

 Sabancı
Üniversitesi

FACULTY OF
ENGINEERING AND
NATURAL SCIENCES



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DEAN'S MESSAGE

I am pleased to share with you a summary of facts and figures on academic activities of the Faculty of Engineering and Natural Sciences (FENS) in 2013 Calendar Year.

We had another hectic and exciting year. We have continued the assessment of all of our academic activities throughout the year and tried to identify areas of improvement. Our efforts were centered around the question "What is next?".

In education, along with efforts in line with Bologna Process, we re-evaluated all of our undergraduate programs and revised our curricula and graduation requirements. ECTS credits in all courses were revised after a careful study. We have initiated efforts to start alternative teaching and learning methods in FENS. The first attempt in this direction will be our Science of Nature freshman courses. We have re-organized our facilities to create rooms suitable for interactive learning environment in recitations. Our efforts in flipped classroom teaching will be continuing.

We started two new professional master programs in 2013: Energy Technologies & Management and Nanotechnology. Together with the Information Technology Professional Master Program, FENS now have three graduate programs aimed towards individuals in industry. Our plan in the future will be to add a few more such degree programs to our portfolio in which our expertise could be of use to professionals. I would like to express my gratitude to all FENS members who contributed to the design and implementation of these new programs.

FENS Faculty Members have a strong international network which yields particularly good results in research. We had efforts to extend an international collaboration to education during 2013. We hope that our meetings and fruitful communication with Hong Kong University of Science and Technology, Budapest University of Technology and Economics and University of Massachusetts Lowell will soon be realized as concrete collaboration in various forms in education.

Our faculty members, together with graduate students, post-docs and researchers, had a very productive year from a research perspective. FENS journal publications in 2013 increased by 17 % compared to 2012. The budget of the projects, which were started in 2013, increased by 27 % compared to the same figure in 2012. As of the end of 2013, the ongoing projects' budget in FENS and SUNUM (Sabancı University Nanotechnology Research and Application Center) is slightly over 50 million Turkish Liras (around 22,5 million USD and 16,2 million Euros). You will find brief information about some of the ongoing projects in this report. Our Faculty Members and students continued their achievements in a variety of ways and they were granted prestigious awards.

As in 2012, Sabancı University achieved great success in the Ministry of Science, Industry and Technology's "University Entrepreneurship and Innovation Index". We were the top university among the foundation universities in Turkey and the second best university overall in the country in this index. Considering the short history of our university, our success is quite remarkable and motivates us in the years to come. In particular, our Faculty's contribution to the performance of the University in this respect is a joy for all of us here at FENS.

In summary, FENS continued to graduate excellent scientists/engineers and produced remarkable research output in 2013. I thank all members of FENS for excellent work.

Yusuf Menceloğlu
Dean
Faculty of Engineering and Natural Sciences

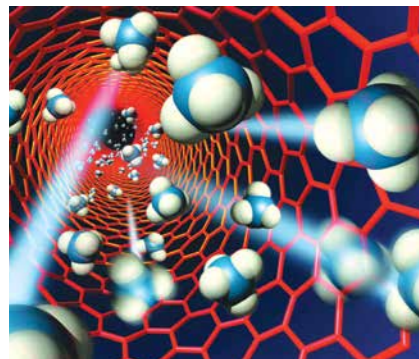
HIGHLIGHTS



New Comers

Umut Ekmekçi

In his academic studies and professional career, Umut Ekmekçi specialized in “collective creativity and innovation”. His research interests particularly include the “network” concept and how innovation networks are designed, created and managed at an industrial level. In addition to his academic career, he worked as an international expert / consultant at various European Commission programs, and project coordinator in university-industry joint projects, all focused on “collaborative innovation networks”. Since June 2013 he has worked as the director of two masters programs at Sabancı University – Faculty of Natural Sciences and Engineering, namely “Nanotechnology” and “Energy Technologies and Management” programs where the major goal is creating an innovative, collaborative and multidisciplinary platform between academia and industry.



New Professional MSc Programs

“Nanotechnology” Non-Thesis Master’s Degree Program:

The Nanotechnology Non-Thesis Masters Program is designed for professionals who plan to specialize in industrial applications of nanotechnology in their working area. Nanotechnology has huge potential for creating innovation and added-value in various sectors that deal with “material”, and offers a variety of industrial applications. It is considered one of the most critical technologies of next 50 years, and is expected to cause to a “paradigm shift” in almost all sectors. This one-year (12 months) master program focuses on three aspects of nanotechnology: the “technical aspect,” which includes characterization and fabrication of nanomaterials; the “ commercial aspect,” which concentrates on industrial applications and commercialization of nanotechnology, and lastly “political aspect” which studies national nanotechnology policies, regulations, and health, safety and environmental impacts of nanotechnology. In addition to the “educational dimension” of this program, it also serves as a “bridging collaboration platform” between academia and industry.

“Energy Technologies and Management” Non-Thesis Master’s Degree Program:



Energy is considered one of the most important and rapidly growing problems of the world in general and our country in particular. Increasing populations, rapid industrialization and constantly increasing energy needs of civil societies makes it even more important. Being more competitive in the global economy and reaching a higher social welfare level requires better strategy, planning, design and implementation of decisions related to energy investments. The “Energy Technologies and Management” Non-Thesis Master Program aims to provide students with a broader multi-disciplinary understanding of geopolitical, technical, managerial and legal dimensions of energy studies. This one year (12 months) program accepts students from different disciplinary backgrounds including social sciences, managerial studies and engineering, and hence aims to create a multi-disciplinary learning network with the active participation of professional students, as well as various experts from the sector as guest lecturers / speakers.

Professional Development Seminars

We organized 2 Faculty Professional Development Seminars for our Faculty Members on September 18, 2013 and on October 02, 2013. The seminars were given by Didem Vardar Ulu from Wellesley College. The titles of her seminars were:

1. Scholarly teaching and student centered education in STEM (science, technology, engineering, and mathematics) disciplines
2. Is my teaching helping my students learn?



Three major components of an integrated course design and the advantages of the backward design strategy in creating a well-aligned and integrated course.





Figure 1

Natural Sciences (NS) Revision Activities

There has been an effort, since 2012, to revise the freshmen Science of Nature (NS 101-102) course to improve student engagement and learning while also improving teacher satisfaction. During 2013 the NS revision team* received training on course design through several workshops including those on “Learning Objectives and Course Design”, “Classroom Assessment Techniques”, “Student Centered Education”, “Development of weekly worksheets” (Figure 1) and researched on technological developments to ensure maximum student participation in large lecture halls. We worked together with the IT Department at SU to utilize new classroom management software, “Learning Catalytics,” for effective ways of delivering questions and real-time assessment during lectures. Additionally features of SuCourse were improved for on-line submission and the assessment of weekly worksheets which guide students through the syllabus. We also worked together with FENS Dean’s Office, and Operation and Technical Services to convert two rooms in FENS building, G055 and G059, to Technology Enhanced Active Learning (TEAL) environment for recitations. The two rooms will accommodate a total of 108 students in one sitting and students will be arranged in 3 groups of 3 students around a round table (Figure 2). The rooms are also equipped with sound equipment, projection facilities and white boards all around to provide opportunities for members of groups to discuss and solve the questions in the recitation worksheet together and to share results with different tables. As a part of the preparation process we redesigned the contents of the graduate course NS501 Basic Concepts and Teaching of Science and trained 12 TAs during Fall 2013 for the new course. Finally some of the planned activities for the new version have been tested during Fall 2013. A video made in one of these recitations can be accessed at <https://drive.google.com/file/d/oB-VpZHwGcQV6VkJFEFBKOURpc2s/edit?usp=sharing>



Figure 2

***The core NS revision team members are:** Canan Atılgan, Süphan Bakkal, Gözde İnce, Emrah Kalemci, Yuki Kaneko, Zehra Sayers, Defne Üçer and Gözde Ünal from SU and Didem Vardar from Wellesley College, who is acting as a consultant. We also worked with D. Sezer, B. Mısırlıoğlu and A. R. Atılgan during early stages of the preparations. B. Erman, I. I. Kaya, V. Özgüz, O. Blazhenkova and C. Akkan provided consultations for various aspects.

Memberships in 2013



Global Engineering Deans Council (GEDC)

The Global Engineering Deans Council (GEDC) was established in 2008 when twenty deans came together in Paris and signed the ‘Paris Declaration’. GEDC has now grown to include over 125 deans from over 30 countries, 5 regional chapters, and over 10 corporate and other partners.

Global Engineering Deans Council (GEDC) Vision is to enhance the capabilities of engineering deans to transform schools in support of societies in a global economy.

Global Engineering Deans Council holds regular meetings surrounding four “tracks” or themes as initial focal points for the GEDC to move forward: How to be a successful Dean/Professor, What is a “Global Engineer”, Technology Innovation in Engineering Education, and Building Global Partnerships. Accommodating its diverse membership, the GEDC has met in Argentina, Brazil, Turkey, France, Singapore, People’s Republic of China, United States of America, Hungary and plans to meet in the United Arab Emirates, Italy and Australia in the coming years.

Sabancı University Faculty of Engineering and Natural Sciences attended the Annual Conference. The 2013 Annual Conference of the Global Engineering Deans Council was held in Chicago, Illinois, USA on October 20 through October 22. The conference was focused on the use of technology in the enhancement of engineering education and, specifically, on evidence-based practices in making engineering education more effective and efficient.



The European Society for Engineering Education - SEFI

The European Society for Engineering Education -SEFI- is the largest network of

engineering education institutions and educators in Europe. It is an international non-governmental organisation (NGO) established in Belgium in 1973. SEFI’s aims and objectives are to contribute to the development and to the improvement of engineering education in Europe, to reinforce the position of the engineering professionals in society, to provide services to its members, to promote information about engineering education and improve communication and exchanges between teachers, researchers and students, to develop co-operation between educational engineering institutions and establishments of higher technical education, to promote co-operation between industry and engineering education actors, to be a link between its members and international organizations, and to promote the European dimension in higher engineering education.

SEFI serves as a European Forum to its members, composed of institutions of higher engineering education, academic staff and teachers, students, related associations and companies in 47 countries.

The objectives of SEFI are achieved through a series of activities such as the Annual Conferences, Ad hoc seminars and workshops organised by SEFI’s working groups, Task forces on specific topics, the organization of the European Engineering Deans Conventions, Publications (incl. the European Journal of Engineering Education), European projects, Position papers and more.

A large part of SEFI’s activities is dedicated to the cooperation with other major European associations and international bodies, the European Commission, UNESCO, the Council of Europe or the OECD.



Human Brain Project

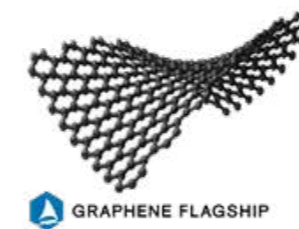
Featured Projects

Human Brain Project

Understanding the human brain is one of the greatest scientific challenges of our time. Such an understanding will lead to fundamentally new computing technologies, transform the diagnosis and treatment of brain diseases, and provide profound insights into our humanity. Today, for the first time, exponential improvements in the capabilities of modern ICT (Information and Communications Technologies) open up new opportunities to investigate the complexity of the brain. The goal of the Human Brain Project (HBP) is thus to build an integrated ICT infrastructure enabling a global collaborative effort to address this grand challenge, and ultimately to emulate the computational capabilities of the brain. The infrastructure will consist of a tightly linked network of six ICT platforms, which, like current large-scale physics facilities, will operate as a resource both for core HBP research and for external projects, chosen by competitive call. The HBP will drive innovation in ICT, creating new technologies for i) interactive supercomputing, visualisation and big data analytics; ii) federated analysis of globally distributed data; iii) simulation of the brain and other complex systems; iv) objective classification of disease; v) scalable and configurable neuromorphic computing systems, based on the brain's principles of computation and cognition and its architectures. Expected outputs include simulations of the brain that reveal the chains of events leading from genes to cognition; simulations of diseases and the effects of drugs; early diagnoses and personalised treatments; and a computing paradigm that overcomes bottlenecks in power, reliability and programmability, captures the brain's cognitive capabilities, and goes beyond Moore's Law. Overall, the HBP will help to reach a unified understanding of the brain, reduce the economic and social burden of brain disease, and empower the European pharmaceutical and computing industries to lead world markets with enormous potential for growth.

- **Coordinated by EPFL in Switzerland; PI: Prof. Henry Markram €1,5 Billion for 10 years program, SU budget 303.618 €.**
- **SU is the only Turkish Organization in this project, led by Yaşar Gürbüz and Volkan Özgüz**
- **Federating more than 80 European and international research institutions**

Graphene Project



GRAPHENE FLAGSHIP

The European Commission has chosen Graphene as one of Europe's first 10-year, 1 billion euro FET flagships. The mission of Graphene is to take graphene and related layered materials from academic laboratories to society, revolutionize multiple industries and create economic growth and new jobs in Europe.

From the start in October 2013 the Graphene Flagship will coordinate 126 academic and industrial research groups in 17 European countries with an initial 30-month-budget of 54 million euro. During the 30 month ramp-up phase, the Graphene Flagship will focus on the area of communications, concentrating on ICT and on the physical transport sector, and supporting applications in the fields of energy technology and sensors.

Sabancı University is the only partner of Graphene Flagship Project from Turkey.

A team that includes Sabancı University faculty Assoc.Prof. Selmiye Alkan Gürsel as implementer and Dr. Burcu Saner Okan as specialist will be a part of the energy applications work package of graphene. The Sabancı University team will focus on the use of graphene in fuel cells. Sabancı University is the only consortium member on fuel cell applications of graphene in the first phase. The outcomes of the project will contribute greatly to the scientific and technological development of Turkey in this area. The project will augment Sabancı University's present efforts in graphene research, create a center of competence and help to create new partnerships. Sabancı University will

also mediate between graphene research consortia in Turkey and the European partners of the project, enabling Turkey to have international presence in graphene studies.

More information on the EU Future Emerging Technology Flagship Initiative:

http://cordis.europa.eu/fp7/ict/programme/fet/flagship/home_en.html

Power Aperture Linearization - PAL PROJECT



Power Aperture Linearization - PAL, is the use of heat harvesters such as thermophotovoltaics/rectenna for converting waste heat from transmitters/environment into electrical energy. The goal is to use the converted electrical energy to substantially improve the efficiency of radar and communications transmitters.

Project coordinator: Yaşar Gürbüz
Project Researcher: Meriç Özcan
PhD Students: Mesut Inac and Atia Shafique



Healthy Minor Cereals (Eu Project)

Consumers have increasing demands for healthy, nutritious, and innovative food produced sustainably. Minor cereals can address these points, as well as contributing to feed and non-food markets. However, they have barely been developed as commercial varieties, with no major investment to exploit genetic diversity in breeding programmes, and have low yields. There has been little research to optimise agronomy, food processing and marketing. HealthyMinorCereals will apply state of the art methods for genetic characterisation and phenotyping of >800 genotypes of 5 minor cereal species (spelt, rye, oat, einkorn and emmer). The project will select traits related to yield, nutritional quality and disease resistance, especially targeting important and emerging crop diseases, to identify well characterised genotypes for the development of minor cereal varieties and cross breeding. Field experiments in 4 contrasting climatic zones in Europe will optimise agronomy within the organic and low-input sector, addressing gene x environment interactions, fertilization and potential benefits of agronomic management suited to improve yields in each country, and culminating with innovative on-farm trials.

The project will investigate variation in nutritional quality of selected genotypes and analyse biological effects of seed extracts in human cell lines. Parameters of grain important for food manufacture will be investigated with optimisation of milling and other processes to maximise nutritional quality. Food industry partners will use selected minor cereal grains to develop new food products that will be demonstrated with production trials, standardisation and sensory analysis. A study on market potential will investigate factors involved in the development of minor cereals in various European markets and develop a framework for enhancing this potential. The project's consortium has a major involvement of SME partners involved in breeding, farming, and food production with minor cereals.

A consortium with 16 partners from 10 European countries.

Budget: 5 Million Euro (SU-Budget: 505 000 Euro)

İsmail Çakmak, Levent Öztürk, Devrim Gözüaçık

Promotions

5 Assistant Professors have been promoted to Associate Professorship:

Esra Erdem, Computer Science and Engineering

Güvenç Şahin, Manufacturing Systems/Industrial Engineering

Hakan Erdoğan, Electronics Engineering

İlker Hamzaoğlu, Electronics Engineering

Volkan Patoğlu, Mechatronics

Faculty Member Awards

Ali Koşar, ASME ICNMM Outstanding Early Career Award

Ali Koşar, The Kadir Has Outstanding Young Investigator Award

Aytül Erçil, Turkey's Women Entrepreneur (2013), KAGİDER

Barış Balcıoğlu, Sabancı University Graduating Class Teaching Award, 1st Place

Burç Mısırlıoğlu, TÜBİTAK Incentive Award

Cem Güneri, Sabancı University First Year Courses Teaching Award, 1st Place

İnanç Adagideli, TÜBİTAK Incentive Award

İsmail Çakmak, Georg Forster Research Award

Murat Çokol, Junior Chamber of International (JCI) awarded as one of the 10 outstanding young persons of Turkey, in the "Medical Innovations and Inventions" category

Murat Çokol, Turkish Academy of Sciences, 2013 Successful Young Scientist Award

Murat Çokol, Science Heroes Foundation, 2013 Successful Young Scientist Award

Müjdat Çetin, Premium Award, The Institution of Engineering and Technology [IET]

Özge Akbulut, L'Oreal Young Women in Science Award/Grant

Selmiye Alkan Gürsel, Science Academy Young Academics Prize/Scholarship

Tolga Güver, Science Academy Young Academics Prize/Scholarship

Yuda Yürüm, Doç. Dr.Fahrettin Can 2013 Award

Faculty Member Achievements

Asıf Şabanoviç, Associate Member of Academy of Sciences and Arts of Bosnia and Herzegovina (ANUBiH)

Burcu Saner Okan (SUNUM Researcher), received the best poster award among 330 project posters in Euronanoforum 2013 conference

Devrim Gözüaçık, nanotechnology-based cancer research project awarded the TÜBİTAK - NRF Korea Grant

Erdal Toprak has received a prestigious Program Grant of the Human Frontier Science Program (HFSP).

Ersin Göğüş is elected to the COSPAR National Committee.

Gözde Ünal, Medical images improved Interview (HORIZON MANAGEMENT NEWS 01/2013)

Hans Frenk, the second best paper which appeared in POM (Production Operations Management) in 2013.

Hikmet Budak, will serve as an Associate editor of BMC Genomics

Mehmet Ali Alpar, Membership of American Philosophical Society

Selmiye Alkan Gürsel, will serve on the Reviewer Editorial Board of Frontiers in Energy Storage

Volkan Patoğlu, has been selected to serve as an associate editor for IEEE Transactions on Haptics.

Student Achievements

Alihan Kaya (MSME), The journal article entitled " High mass flux flow boiling and critical heat flux in microscale " was recently published in International Journal of Thermal Sciences, one of the most prestigious journals in Thermal Sciences field. This article attracted much attention of Energy Technologies community so that it was selected to the Key Scientific Featured Articles List in the website of Renewable Energy Global Innovations.

Beşir Çelebi (MSME), Mustafa Yalçın (MSME) from the Human Machine Interaction Laboratory (ME) have received Best Application Paper Award at IEEE/RSJ International Conference on Intelligent Robots and Systems 2013.

Beyza Vuruşaner and Kumsal Tekirdağ (PHDBIO) have won the oral presentation prize in the I. Cell Death Research Congress (with International Contribution) that was held between 31 October- 3 November in Çeşme, İzmir which was organized by Cell Death Research Organization.

Can Aztekin (BSBIO) Harvard Stem Cell Institute, Internship

Haleh Abdizadeh (MSMAT) received the Best Poster Presentation Award in a recent conference on scientific computation 2013 (CSC2013) held on 3- 7 December 2013 in Paphos Cyprus.

Mehmet Ali Güney, Taygun Kekeç, Barış Can Üstündağ (MSME), National University of Singapore Entrepreneurship Summer Scholl Competition, 1st place

Mehmet Ali Güney, Taygun Kekeç, Barış Can Üstündağ (MSME) Control, Vision and Robotics Research Group, are awarded with the Technology-Entrepreneurship Startup Grant by The Ministry of Science, Industry and Technology.

Mehmet Çağrı Çalpur (PHDCS) won the Grant of TÜBİTAK 1512 – Progressive Entrepreneurship Support Program.

Nazlı Keskin (PHDBIO), Emre Deniz (PHDBIO), Bahar Shamloo (MSBIO), Gülperi Yalçın (MSBIO) ve Şeyda Temiz (MSBIO) won best poster awards at the 22. National Immunology Congress in Çesme, İzmir held on April 27-30, 2013.

Serhat Can Leloğlu (BSCS'10 & MSCS'13) won the third prize of Hack-a-Thon Competition at Open Silicon Valley (California).

Süheyla Çetin (PHDCS) took the top place at the Challenge "Rotterdam Coronary Artery Stenoses Detection and Quantification Evaluation Framework" in the Stenoses Detection category with the average ranking evaluation.

Taylan Erol (BSME) won the Grant of TÜBİTAK 2241/A Scholarship Program.

Umut Tok (PHD-ME), Ahmet Selim Pehlivan(PHD-ME) and Burcu Saner Okan (Researcher) won the Grant of TÜBİTAK 1512 – Progressive Entrepreneurship Support Program.

International Experiences

Exchange

89 undergraduate students who participated in Exchange Program and spent a semester or a year abroad in 2013 calendar year.They visited 20 different countries.

Internship

18% of FENS students completed their Summer Internship abroad. Of these students, 61% had Academic and 39% had Industrial Internships. The following table provides details.

	International	Turkey	Total
Academy	37	7	44
Industry	24	280	304
Total	61	287	348

Alumni in Academy

Ayça Çeşmeliolu (PHDMATH'08), Assistant Prof. / Istanbul Kemerburgaz University

Ayşe Özlem Aykut (PHDMAT'13), Postdoc. / University of Basel

Bahar Yıldız Kutman (PHDBIO'13), Postdoc. / University of California Davis

Cem Meydan (PHDBIO'13), Postdoc. / Cornell University

Elif Özden (PHDMAT'13), Assistant Prof. / Istanbul Technical University (ITU)

Elvin Çoban Göktürk (BSMS 2006), Assistant Prof./ Özyeğin University, Industrial Engineering Department

Gökтуğ Karpaz (PHDPHYS 2013), Postdoc. / Universidade Estadual Paulista

Mostafa Sařdari Shadloo (PHDME 2013), Postdoc. / INSA de Rouen, Complexe de Recherche Interprofessionnel en Aérothermochimie, France

Nilay Duruk Mutlubaş (PHDMATH 2011), / Assistant Prof. / Istanbul Kemerburgaz University

Pelin Gülşah Canbolat (BSMS 2004), Assistant Prof./Koç University, Industrial Engineering Department

Seher Tutdere (PHDMATH 2012), Assistant Prof./ Gebze Institute of Technology

Selim Hanay (BSEE 2003), Assistant Prof. / Bilkent University, Mechanical Engineering Department

Yegan Erdem (BSME 2006), Assistant Prof. / Bilkent University, Mechanical Engineering Department

PhD Alumni in Industry

Andaç Hamamcı (PHDEE 2013), Fondazione Santa Lucia IRCCS (Scientific Institute for Research, Hospitalization and Health Care) , Radiology

Ertuğrul Tolga Duran (PHDME 2013), SDM Research & Engineering, Engineering Manager

Mehmet Karaca (PHDEE 2013), AirTies Wireless Networks, System Engineer/R&D

Selçuk Sümengen (PHDCS 2013), SAP , Software Developer



FENS Excellence in Teaching Award

Our outstanding graduate students received their certificates to acknowledge their teaching achievements in 2012-2013 Spring Semester.

The recipients, their program and the course they supported are:

Abdullah Kamadan, PhdME student, MATH 102 Calculus II

Buket Özkaya, PhdMATH student, MATH 204 Discrete Mathematics

Ece Canan Sayitoğlu, PhdBIO student, NS 102 Science of Nature II

Mahir Umman Yıldırım, PhdIE student, ENS 208 Introduction to Manufacturing Systems

Sibel Şahin, PhdMATH student, MATH 102 Calculus II



Gürsel Sönmez Awards

Our colleague Dr. Gursel Sonmez 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 following students are the recipients of the Gursel Sönmez Research Award in 2013.

Ayşe Özlem (Sezerman) Aykut received her PhD in Materials Science and Engineering with a thesis titled "Redistribution of States and Inducing New Channels for Conformational Change: Computational Studies on Calmodulin", Ms. Aykut focuses on the conformational shifts observed in

proteins and comparison of two linear-response based methodologies. She is currently a Postdoctoral Research fellow at the University of Basel.

Elif Özden Yenigün received her PhD in Materials Science and Engineering with a thesis titled "Designed-in Molecular Interactions and Cross-Linking Interface for Superior Nanocomposites: A Multiscale Insight" consisting of her studies on different aspects of nanocomposites. She is currently a faculty member in Istanbul Technical University.

Göktuğ Karpaz received his PhD in Physics with a thesis titled "Entanglement and Other Measures of Non-Classicality", consisting of several topics related to the theory of quantum entanglement and the dynamics of quantum systems. He is currently a Postdoctoral Research fellow at the Universidade Estadual Paulista.

Sakıp Sabancı Award for the Highest Ranking Undergraduate Student

We had 2 top students with identical GPA's this year.

Onur Albert Aslan graduated from the Mechatronics Engineering Program with a minor degree in Mathematics. He is currently a first year MSc student in Eindhoven University of Technology, Systems and Control department.

Rebi Daldal graduated from the Computer Science and Engineering Program with a minor degree in Mathematics. He is currently a first year MSc student in our Industrial Engineering program.

Facts and Figures

STAFF PROFILE (Numbers)	(Numbers)
Professors	33
Associate Professors	45
Assistant Professors	21
TOTAL NUMBER OF FULL-TIME FACULTY MEMBERS	99
Post-doc	33
Full-time instructor	3
Researcher	6
Executive & Professional Staff	20

Program	Professors	Associate Professors	Assistant Professors	Instructor	Post-doc	Researcher
Biological Sciences and Bioengineering	6	3	2		6	
Computer Science and Engineering	1	6	2			
Electronics Engineering	3	9	1		3	
Industrial Engineering	3	8	3		2	
Information Technology			1	3		
Materials Science and Engineering	6	4	5		4	
Mathematics	7	3	3		3	
Mechatronics Engineering	2	8			2	
Nano- Energy Technologies and Management			1			
Physics	5	4	2		2	
SUNUM (SU Nanotechnology Research and Application Center)			1		11	6
Grand Total	33	45	21	3	33	6

EDUCATION



FENS offers undergraduate degrees in 6 disciplines, graduate degrees in 11 disciplines and minor honor programs in 3 disciplines.

- Biological Sciences and Bioengineering (BS-MS-PHD)
- Chemistry (minor BS)
- Computer Science and Engineering (BS-MS-PHD)
- Electronics Engineering (BS-MS-PHD)
- Energy Technologies and Management (Professional MS)
- Information Technology (Professional MS)
- Manufacturing Systems (BS)/Industrial Engineering (MS-PhD)
- Materials Science and Engineering (BS-MS-PHD)
- Mathematics (minor BS & MS-PhD)
- Mechatronics (BS-MS-PHD)
- Nanotechnology (Professional MS)
- Physics (minor BS & MS-PHD)

In undergraduate education, all incoming students take a common core program ranging from natural sciences to math, social sciences to language courses. Students then start specializing in their fields of interest in the second year and declare a major at the end of their second year. Project involvement and undergraduate research are highly encouraged. Every FENS student takes a freshman PROJ 102 course to learn basic project practices. This is followed by mandatory summer internships and the final year graduation project. Course projects are also common practice in FENS. We encourage students to explore different disciplines. We value student/faculty member interaction greatly and welcome students with ideas to carry out research with their instructors.

Our graduate programs provide competitive and active learning environment for highly motivated students. Our graduate students are either supported through research projects of faculty members or by Sabancı University scholarships.

Freedom in Major Declaration

Unlike other universities in Turkey, where students are directly placed in various departments as they enter the university, Sabancı University gives its students a chance to decide their major after the second year. This allows students to make more informed choices about their future. The following table shows the initial intentions versus final declarations of students in FENS since 1999, the year when the University admitted its first group of students. For instance, total of 46 students declared Materials Science and Engineering (MAT) as their area of interest when they entered the University. Of these students, 18 ended up getting a degree in MAT, 19 obtained a degree in Manufacturing Systems, etc. Total number of alumni with BS in MAT is 128 since 1999. Among these MAT graduates, 30 declared Mechatronics Engineering and 25 declared Manufacturing Systems as their initial interest when they entered Sabancı University.

Diploma Program Declarations Since 1999								
Declared Major	Initial Intent Declared							Total
	MDBF							
	BIO	CS	EE	MAT	ME	MS		
MDBF	BIO	109	16	8		13	21	167
	CS	10	327	57	5	65	53	517
	EE	6	49	206		122	38	421
	MAT	11	22	22	18	30	25	128
	ME	7	71	96	4	409	51	638
	MS	48	144	106	19	221	962	1500
Total		191	629	495	46	860	1150	3371

Facts and Figures

Undergraduate Student Enrollment	2013- 2014 Fall
Undeclared	1211
Biological Sciences and Bioengineering	30
Computer Science and Engineering	77
Electronics Engineering	58
Manufacturing Systems Engineering	438
Materials Science and Engineering	19
Mechatronics	107
Total	1940

Graduate Student Enrollment	PhD	MSc	Total
Biological Sciences and Bioengineering	34	14	48
Computer Science and Engineering	36	27	63
Electronics Engineering	26	26	52
Electronics Engineering&Computer Science	1	-	1
Energy Technologies and Management	-	1	1
Energy Technologies and Management-Non Thesis	-	11	11
Industrial Engineering	16	39	55
Information Technology	-	36	36
Materials Science and Engineering	31	18	49
Mathematics	17	2	19
Mechatronics	35	19	54
Nanotechnology- Non Thesis	0	4	4
Physics	23	-	23
Total	219	197	416

Courses Offered in 2013*

	Level	Total
Biological Sciences and Bioengineering	Graduate	10
	Undergraduate	20
Computer Science and Engineering	Graduate	13
	Undergraduate	22
Electronics Engineering	Graduate	15
	Undergraduate	23
Energy Technologies and Management	Graduate	4
Information Technology	Graduate	14
Materials Science and Engineering	Graduate	14
	Undergraduate	26
Mathematics	Graduate	20
	Undergraduate	23
Mechatronics	Graduate	15
	Undergraduate	21
Manufacturing Systems/Industrial Engineering	Graduate	14
	Undergraduate	47
Nanotechnology	Graduate	3
Physics	Graduate	16
	Undergraduate	21
Total		341

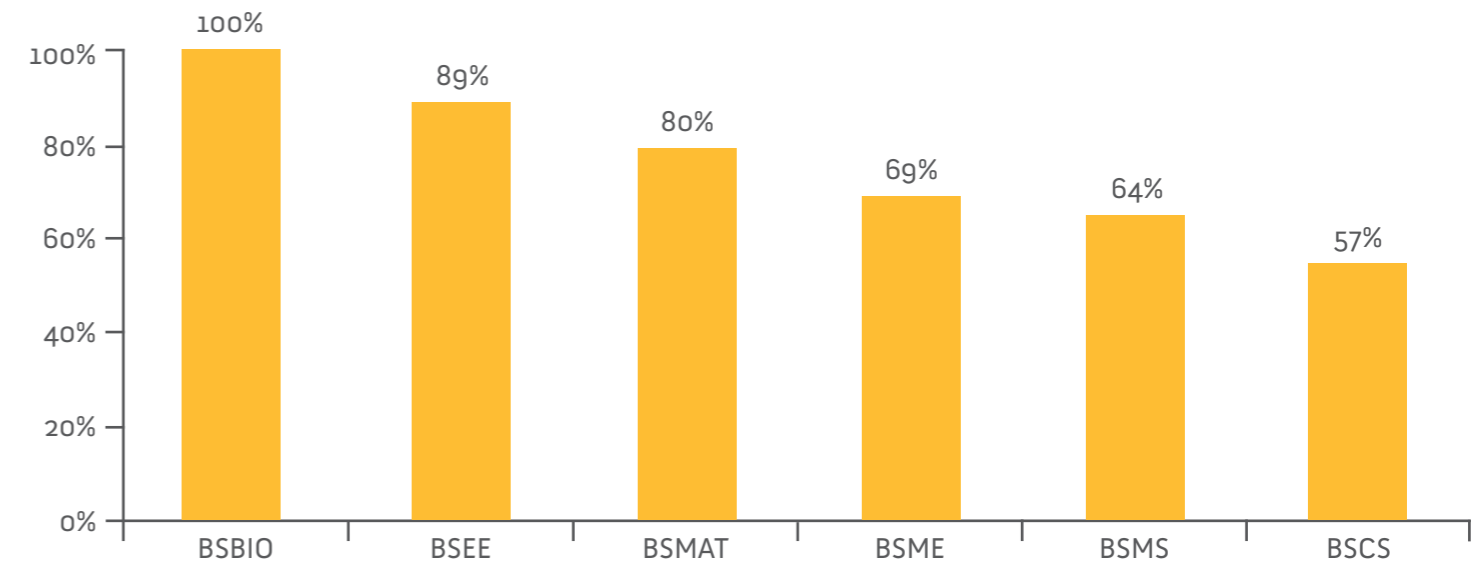
(*) Fall, Spring and Summer courses are included.

GPA Intervals of Undergraduate Alumni

GPA	2,00 - 2,50	2,51 - 3,0	3,01 - 3,50	3,51 - 4,00
Biological Sciences and Bioengineering	38%	13%	38%	13%
Computer Science and Engineering	32%	21%	25%	21%
Electronics Engineering	28%	14%	28%	31%
Materials Science and Engineering	20%	30%	40%	10%
Mechatronics Engineering	37%	14%	37%	12%
Manufacturing Systems Engineering	53%	26%	15%	5%
TOTAL	45%	23%	22%	11%

4 - Year Undergraduate Students Graduation

Rate



Alumni in 2013

Undergraduate Programs	BS			Total
	Fall 2012-2013	Spring 2012-2013	Summer 2012-2013	
Biological Sciences and Bioengineering	-	6	2	8
Computer Science and Engineering	6	14	8	28
Electronics Engineering	3	32	1	36
Manufacturing Systems	39	134	28	201
Materials Science and Engineering	1	9	-	10
Mechatronics	5	37	7	49
Total	54	232	46	332

Graduate Programs	PhD		MSc		Total
	Fall 2012-2013	Spring 2012-2013	Fall 2012-2013	Spring 2012-2013	
Biological Sciences and Bioengineering	1	2	1	6	10
Computer Science and Engineering	-	2	2	11	15
Electronics Engineering	2	4	1	7	14
Electronics Engineering & Computer Science	1	-	-	-	1
Industrial Engineering	-	-	-	9	9
Information Technology	No PhD in IT program		1	13*	14
Materials Science and Engineering	-	4	1	6	11
Mathematics	-	-	-	2	2
Mechatronics Engineering	1	3	2	12	18
Physics	2	2	2	-	6
Total	7	17	10	66	100

*IT students graduate in summer term.

Application, Acceptance and Enrollment Statistics of Graduate Students

	2012-2013 Spring									
	MSc					PhD				
	Application	Acceptance	Enrollment	Enroll/ Accept.	Accept./ Appl.	Application	Acceptance	Enrollment	Enroll/ Accept.	Accept./ Appl.
BIO	23	3	2	67%	13%	24	6	5	83%	25%
CS	26	5	3	60%	19%	12	3	3	100%	25%
EE	0	2	1	50%	-	25	10	2	20%	40%
IE	14	5	4	80%	36%	7	1	0	-	14%
MAT	13	1	0	-	8%	25	9	7	78%	36%
MATH	1	0	0	-	0%	1	0	0	-	-
ME	18	6	3	50%	33%	24	12	6	50%	50%
PHYS	No MSc in PHYS program					16	2	2	100%	13%

	2013-2014 Fall									
	MSc					PhD				
	Application	Acceptance	Enrollment	Enroll/ Accept.	Accept./ Appl.	Application	Acceptance	Enrollment	Enroll/ Accept.	Accept./ Appl.
BIO	36	3	1	33%	8%	32	5	2	40%	16%
CS	49	21	11	52%	43%	22	7	5	71%	32%
EE	45	16	9	56%	36%	39	15	5	33%	38%
ET	8	2	2	100%	25%	No PhD in ENE program				
ET (Non Thesis)	28	15	11	73%	54%	No PhD in ENE program				
IE	64	27	17	63%	42%	19	9	6	67%	47%
IT	61	32	23	72%	52%	No PhD in IT program				
MAT	40	15	10	67%	38%	30	13	6	46%	43%
MATH	21	8	0	-	38%	20	4	3	75%	20%
ME	35	23	7	30%	66%	24	21	10	48%	88%
NANO	8	1	0	-	13%	No PhD in NANOT program				
NANO (Non Thesis)	8	6	4	67%	75%	No PhD in NANOT program				
PHYS	No MSc in PHYS program					26	4	2	50%	15%

PhD Dissertations

Andaç Hamamcı

PhD in Electronics Engineering (2012-2013 Spring)
'Image Analysis Methods for Brain Tumor Treatment Follow-Up'
Gözde Ünal (Thesis Advisor)

Anıl Günay Demirkol

PhD in Physics (2012-2013 Fall)
'Development Of a Nanogap Fabrication Method For Applications In Nanoelectromechanical Systems And Nanoelectronics'
İsmet İnönü Kaya (Thesis Advisor)

Ayşe Özlem Sezerman Aykut

PhD in Materials Science and Engineering(2012-2013 Spring)
'Redistribution Of States And Inducing New Channels For Conformational Change: Computational Studies On Calmodulin'
Canan Atılğan (Thesis Advisor), Ali Rana Atılğan(Thesis Co-advisor)

Ayşegül Çaycı

PhD in Electronics Engineering&Computer Science (2012-2013 Fall)
'Self-Configuring Data Mining For Ubiquitous Computing'
Yücel Saygın(Thesis Advisor)

Bahar Yıldız Kutman

PhD in Biological Sciences and Bioengineering (2012-2013 Spring)
'The Essential and Beneficial Roles of Nickel in Growth of Soybean and Wheat Plants'
İsmail Çakmak(Thesis Advisor)

Cem Meydan

PhD in Biological Sciences and Bioengineering (2012-2013 Spring)
'Discovering Discriminative and Class – Specific Sequence and Structural Motifs in Proteins'
Osman Uğur Sezerman(Thesis Advisor)

Çağatay Karabat

PhD in Electronics Engineering (2012-2013 Spring)
'Improved Security and Privacy Preservation for Biometric Hashing'
Hakan Erdoğan (Thesis Advisor)

Elif Özden Yenigün

PhD in Materials Science and Engineering(2012-2013 Spring)
'Designed-in Molecular Interactions and Cross-linking Interface for Superior Nanocomposites: A Multi-scale Insight'
Melih Papila(Thesis Advisor)

Emad Mounir Grais

PhD in Electronics Engineering (2012-2013 Spring)
'Incorporation Prior Information in Nonnegative Matrix Factorization for Audio Source Separation'
Hakan Erdoğan (Thesis Advisor)

Emel Durmaz

PhD in Biological Sciences and Bioengineering (2012-2013 Fall)
'Protein Engineering Studies on Bacillus Thermocatenulatus Lipase'
Osman Uğur Sezerman(Thesis Advisor)

Ertuğrul Tolga Duran

PhD in Mechatronics (2012-2013 Spring)
'Stiffness and Friction Characterization of Brush Seals'
Mahmut F.Akşit (Thesis Advisor)

Fatma Zeynep Temel

PhD in Mechatronics (2012-2013 Spring)
'Design, Characterization, Visualization and Navigation of Swimming Micro Robots in Channels'
Serhat Yeşilyurt(Thesis Advisor)

Göktuğ Karpaz

PhD in Physics (2012-2013 Spring)
'Entanglement and Other Measures of Non-Classicality'
Zafer Gedik(Thesis Advisor)

Hüseyin Kayahan

PhD in Electronics Engineering (2012-2013 Spring)
'Pulse Frequency Modulated DROICs with Reduced Quantization Noise Employing Extended Counting Method'
Yaşar Gürbüz(Thesis Advisor)

Lale Işikel Şanlı

PhD in Mechatronics (2012-2013 Spring)
'Design, Characterization and Modeling of High Temperature Proton Exchange Membranes in Dead Ended Anode Operated Polymer Electrolyte Membrane Fuel Cell'
Selmiye Alkan Gürsel(Thesis Advisor), Serhat Yeşilyurt(Thesis Co-advisor)

Mehmet Karaca

PhD in Electronics Engineering (2012-2013 Fall)
'Scheduling Algorithms For Next Generation Cellular Networks'
Özgür Erçetin (Thesis Advisor)

Mostafa Safdari Shadloo

PhD in Mechatronics (2012-2013 Fall)
'Improved Multiphase Smoothed Particle Hydrodynamics'
Mehmet Yıldız (Thesis Advisor)
Nazım Burak Karahanoğlu
PhD in Electronics Engineering (2012-2013 Fall)
'Search-Based Methods For The Sparse Signal Recovery Problem In Compressed Sensing'
Hakan Erdoğan (Thesis Advisor)

Özge Malay Heinz

PhD in Materials Science and Engineering(2012-2013 Spring)
'Polymer-Filler Interactions In Polyether Based Thermoplastic Polyurethane/ Silica Nanocomposites'
Yusuf Menciloğlu (Thesis Advisor)

Özlem Züleyha Kocabaş

PhD in Materials Science and Engineering(2012-2013 Spring)

'Fabrication of Nano and Porous Materials & Their Utilization in the Purification of Water Contaminated with Arsenic, Copper, and Lead'

Yüda Yürüm (Thesis Advisor)

Selçuk Sümengen

PhD in Computer Science and Engineering (2012-2013 Spring)

'Entropy Guided Visualization and Analysis of Multivariate Spatio-Temporal Data Generated by Physically Based Simulation'

Selim Balcısoy (Thesis Advisor)

Şirin Çalışkan

PhD in Physics (2012-2013 Fall)

'On The Evolution Of Young Neutron Stars With Fallback Disks'

Ünal Ertan (Thesis Advisor)

Tolga Dinçer

PhD in Physics (2012-2013 Spring)

'Hard State Manifestations of Black Hole Transients'

Emrah Kalemci (Thesis Advisor)

Tolga Mustafa Eren

PhD in Computer Science and Engineering (2012-2013 Spring)

'Scene Creation and Exploration in Outdoor Augmented Reality'

Selim Balcısoy (Thesis Advisor)

RESEARCH



Paralleling its academic programs, FENS research is concentrated on areas at the forefront of 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 FP7) 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.

Research Areas of FENS

Biological Sciences and Bioengineering

- Bioinformatics
- Molecular and Cellular Biology
- Plant Molecular Biology and Genetics
- Plant Nutrition and Physiology
- Structural and Computational Biology

Computer Science and Engineering

- Artificial Intelligence, Machine Learning, Data Mining
- Computer Graphics & Visualization
- Computer Networks
- Computer Vision & Signal Processing
- Security and Privacy
- Social Media
- Software Engineering

Chemistry

- Catalysis Chemistry
- Transport Phenomena
- Chemistry and Medicine
- Chemistry of Energy Storage
- Environmentally Friendly Chemistry
- Fuel Chemistry
- Inorganic Chemistry
- Organic Chemistry
- Protein Chemistry
- Theoretical and Computational Chemistry

Electronics Engineering

- Digital Systems
- Electronics and Circuits
- Optics and Photonics
- Signal Processing
- Telecommunications

Manufacturing Systems/ Industrial Engineering

- Innovation and Manufacturing Strategies
- Manufacturing Processes and Equipment
- Optimization and Decision Theory
- Production and Logistics Systems Planning in Supply Chains

Materials Science and Engineering

- Energy and Environment
- Theoretical and Computational Materials Science
- Thin Film Studies
- Carbon Nanotubes
- Composite Materials in Engineering Design
- Smart Materials and Structures
- Colloidal Nanoparticle-based Optical Materials

Mathematics

- Finite Fields and Their Applications in Coding Theory and Cryptography
- Algebraic Curves in Positive Characteristic and Number Theory
- Enumerative Combinatorics and Applications to Partition Theory and q-Series
- Complex Analysis in Single and Several Variables
- Partial Differential Equations
- Applied Probability, Statistics and Stochastic Processes

Mechatronics

- Robotics, Systems and Controls
- Experimental and Computational Micro/Nano Fluidics and Heat Transfer
- Computational Electromagnetics and Nano-Optics
- Embedded and Real-time Operating Systems
- Design of Mechatronic Systems
- Topology Optimization of Metamaterials and Tissue Engineering Systems

Physics

- Condensed Matter Physics
- High Energy Astrophysics
- Mathematical Physics
- Theoretical Molecular Biophysics

Facts and Figures

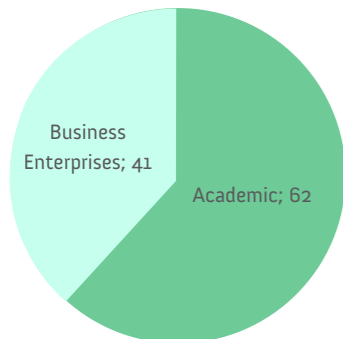
Labs

Programs	Number of Labs	Lab.m ²
Biological Sciences & Bioengineering	22	1447
Biological Sciences and Bioengineering & Materials Science and Engineering	1	153
Computer Science and Engineering	4	249
Electronics Engineering	17	1081
General & Materials Science and Engineering	1	110
Manufacturing Systems / Industrial Engineering-Machine Shop	4	760
Materials Science and Engineering	15	812
Materials Science and Engineering & Biological Sciences & Bioengineering	1	25
Materials Science and Engineering & Mechatronics	3	129
Mechatronics	12	906
Natural Sciences	4	438
Physics	4	413
General-Clean Room	1	830
Total*	89	7353

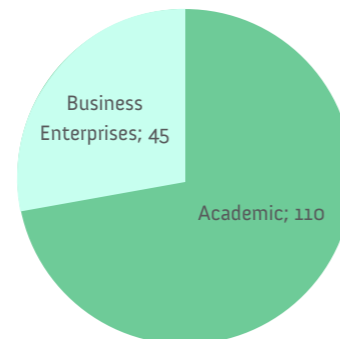
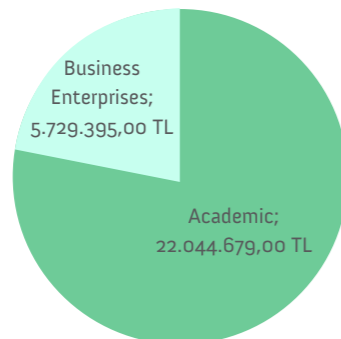
(*): SUNUM has been included.

Projects

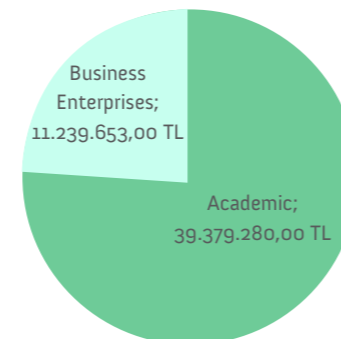
FENS & SUNUM Projects (2013) FENS & SUNUM Projects TL(2013) FENS & SUNUM Projects (Ongoing) FENS & SUNUM Projects TL(Ongoing)



(*): Projects which started or on the contract phase in 2013.



(*): Total projects and their budgets as the end of 2013.



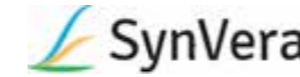
Start- ups



Berrin Yanıkoğlu (Faculty member), Yücel Saygın (Faculty member), Dilek Tapucu, SomaTech Social Media Analytics



Burcu Saner Okan (Researcher), Yusuf Menciloğlu (Faculty member), NANO GRAFEN Nano Technological Products Chemistry, R&D, Consulting, Industry and Trade Limited Company. www.nanografen.com.tr



Kaan Yılancıoğlu (PhD Student), Murat Çokol (Faculty member), Synvera drug research, consultancy and trade inc. www.synvera.com



Rüştü Umut Tok (PhD), Ahmet Selim Pehlivan (PhD Student), Inowatt Plasmonics & Renewable Energy Technologies

Patents

Ahmet Onat, Ender Kazan, Sandor Markon(JP), 'Magnet Movable Linear Motor'

Ali Koşar, 'An apparatus for using hydrodynamic cavitation in medical treatment'

Aytül Erçil, Hakan Sakman, 'A vehicle camera'

Eren Şimşek(PhD Alumni), Kazım Acatay(PhD Alumni), Alpay Taralp, Yusuf Menciloğlu, 'Preparation of substantially quaternized ammonium organosilane composition and self-stabilizing aqueous solution thereof'

Gönen Eren (PhD Alumni), Aytül Erçil, University of Bourgogn, 'A 3D Scanner'

Yunus Sarıkaya (PhD Student), Cem Atalay (MSc Alumni), Özgür Gürbüz, Özgür Erçetin, 'A method for Estimation of Residual Bandwidth'

SCI Journal Publications in 2013

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 and researchers whose names are highlighted. Some joint-program publications are written separately at the end.

Biological Sciences and Bioengineering

Arslan, B.A., Erdem-Kuruca, S., Karakaş, Z., **Erman, B.**, Ergen, A., "Effects of micro environmental factors on natural killer activity (NK) of Beta Thalassemia major patients", *Cellular Immunology*, vol. 282, 93-99, 2013.

Bakır-Güngör, B., **Sezerman, O.U.**, "The identification of pathway markers in intracranial aneurysm using genome-wide association data from two different populations", *PLoS One*, vol. 8, 2013.

Bakır-Güngör, B., Baykan, B., İşeri, S.U., Tuncer, F.N., **Sezerman, O.U.**, "Identifying SNP targeted pathways in partial epilepsies with genome-wide association study data", *Epilepsy Research*, vol. 105, 92-102, 2013.

Bakış, Y., Otu, H.H., Taşcı, N., Meydan, C., Bilgin, N., Yüzbaşıoğlu, S., **Sezerman, O.U.**, "Testing robustness of relative complexity measure method constructing robust phylogenetic trees for *Galanthus L.* using the relative complexity measure", *BMC Bioinformatics*, vol. 14, 2013.

Bilsborrow, P., Cooper, J., **Çakmak, İ.**, Öztürk, L., Leifert, C., Wilcockson, S., "The effect of organic and conventional management on the yield and quality of wheat grown in a long-term field trial", *European Journal of Agronomy*, vol. 51, 71-80, 2013.

Bodur, Ç., Kütük, Ö., Karslı-Uzunbaş, G., Ismijan, T.T., Harrison, P., **Başağa, H.**, "Pranicin analog induces apoptosis in human colon cancer cells: critical roles for Bcl-2, Bim and p38 MAPK signaling", *PLoS One*, vol. 8, 2013.

Boonchuay, P., **Çakmak, İ.**, Rerkasem, B., Prom-U-Thai, C., "Effect of different foliar zinc application at different growth stages on seed zinc concentration and its impact on seeding vigor in rice", *Soil Science and Plant Nutrition*, vol. 59, 180-188, 2013.

Budak, H., Akpınar, B.A., Ünver, T., Türkteş, M., "Proteome changes in wild and modern wheat leaves upon drought stress by two-dimensional electrophoresis and nanoLC-ESI-MS/MS", *Plant Molecular Biology*, vol. 83, 89-103, 2013.

Centofanti, T., **Sayers, Z.**, Cabello-Conejo, M.I., Kidd, P., Nishizawa, N.K., Kakei, Y., Davis, A.P., Sicher, R.C., Chaney, R.L., "Xylem exudate composition and root-to-shoot nickel translocation in *Alyssum* species", *Plant and Soil*, vol. 373, 59-75, 2013.

Daneshbakhsh, B., Khoshgoftarmanesh, A.H., Shariatmadari, H., **Çakmak, İ.**, "Phytosiderophore release by wheat genotypes differing in zinc deficiency tolerance grown with Zn-free nutrient solution as affected by salinity", *Journal of Plant Physiology*, vol. 170, 41-46, 2013.

Daneshbakhsh, B., Khoshgoftarmanesh, A.H., Shariatmadari, H., **Çakmak, İ.**, "Effect of zinc nutrition on salinity-induced oxidative damages in wheat genotypes differing in zinc deficiency tolerance", *Acta Physiologica Plantarum*, vol. 35, 881-889, 2013.

Eker, S., Erdem, H., **Yazıcı, M.A.**, Barut, H., Heybet, E.H., "Effects of cadmium on growth and nutrient composition of bread and durum wheat genotypes", *Fresenius Environmental Bulletin*, vol. 22, 1779-1786, 2013.

Erzurumlu, E., Köse, F.A., Gözen, O., **Gözüaçık, D.**, Toth, E.A., Ballar, P., "A unique IBMPFD-related Pg7/VCP mutation with differential binding pattern and subcellular localization", *International Journal of Biochemistry & Cell Biology*, vol. 45, 773-782, 2013.

Güney, D., Bak, Z.D., **Aydinoğlu, F.**, Turna, İ., Ayaz, F.A., "Effect of geographical variation on the sugar composition of the oriental beech (*Fagus orientalis* Lipsky)", *Turkish Journal of Agriculture and Forestry*, vol. 37, 221-230, 2013.

Hirsh, S.L., McKenzie, D.R., Nosworthy, N.J., Denman, J.A., **Sezerman, O.U.**, Bilek, M.M.M., "The Vroman effect: competitive protein Exchange with dynamic multilayer protein aggregates", *Colloids and Surfaces B: Biointerfaces*, vol. 103, 395-404, 2013.

Joddar, B., **Albayrak, A.**, Kang, J., Nishihara, M., Abe, H., Ito, Y., "Sustained delivery of siRNA from dopamine-coated stainless steel surfaces", *Acta Biomaterialia*, vol. 9, 6753-6761, 2013.

Kautto, L., Grinyer, J., Paulsen, I., Tetu, S., Pillai, A., Pardiwalla, S., **Sezerman, O.U.**, Akçapınar, G.B., Bergquist, P., Te'o, J., Nevalainen, H., "Stress effects caused by the expression of a mutant cellobiohydrolase I and proteasome inhibition in *Trichoderma reesei* Rut-C30", *New Biotechnology*, vol. 30, 183-191, 2013.

Kumwenda, B., Litthauer, D., **Bishop, Ö.**, Reva, O., "Analysis of protein thermostability enhancing factors in industrially important thermus bacteria species", *Evolutionary Bioinformatics*, vol. 9, 327-342, 2013.

Kutman, B.Y., Kutman, U.B., **Çakmak, İ.**, "Nickel-enriched seed and externally supplied nickel improve growth and alleviate foliar urea damage in soybean", *Plant and Soil*, vol. 363, 61-75, 2013.

Kutman, B.Y., Kutman, U.B., **Çakmak, İ.**, "Foliar nickel application alleviates detrimental effects of glyphosate drift on yield and seed quality of wheat", *Journal of Agricultural and Food Chemistry*, vol. 61, 8364-8372, 2013.

Meydan, C., Otu, H.H., **Sezerman, O.U.**, "Prediction of peptides binding to MHC class I and II alleles by temporal motif mining", *BMC Bioinformatics*, vol. 14, 2013.

Morgounov, A.I., Belan, I., Zelenskiy, Y., Roseeva, L., Tomoskozi, S., Bekes, F., Abugalieve, A., **Çakmak, İ.**, Vargas, M., Crossa, J., "Historical changes in grain yield and quality of spring wheat varieties cultivated in Siberia from 1900 to 2010", *Canadian Journal of Plant Science*, vol. 93, 425-433, 2013.

Mangutay, M., Ceylan, Y., Kutman, U.B., **Çakmak, İ.**, "Adequate magnesium nutrition mitigates adverse effects of heat stress on maize and wheat", *Plant and Soil*, vol. 368, 57-72, 2013.

Palmer, M.W., Cooper, J., ..., **Çakmak, İ.**, Öztürk, L., Leifert, C., ..., Bilsborrow, P.E., "The influence of organic and conventional fertilisation and crop protection practices, preceding crop, harvest year and weather conditions on yield and quality of potato (*Solanum tuberosum*) in a long-term management trial", *European Journal of Agronomy*, vol. 49, 83-92, 2013.

Pont, C., Murat, F., ..., **Budak, H.**, Keller, B., ..., Salse, J., "Wheat syntenome unveils new evidences of contrasted evolutionary plasticity between paleo- and neoduplicated subgenomes", *Plant Journal*, vol. 76, 1030-1044, 2013.

Srednicka-Tober, D., Baranski, M., ..., **Çakmak, İ.**, Öztürk, L., Krolkowski, T., ..., Leifert, C., "Effect of crop protection and fertilization regimes used in organic and conventional production systems on feed composition and physiological parameters in rats", *Journal of Agricultural and Food Chemistry*, vol. 61, 1017-1029, 2013.

Tai, X., **Erman, B.**, Alag, A., Mu, J., Kimura, M., Katz, G., Guinter, T., McCaughy, T., Etzensperger, R., Feigenbaum, L., Singer, D.S., Singer, A., "Foxp3 transcription factor is proapoptotic and lethal to developing regulatory T cells unless counterbalanced by cytokine survival signals", *Immunity*, vol. 38, 1116-1128, 2013.

Tekiner, T.A., **Başağa, H.**, "Role of microRNA deregulation in breast cancer cell chemoresistance and stemness", *Current Medicinal Chemistry*, vol. 20, 3358-3369, 2013.

Tekirdağ, K.A., Korkmaz, G., Öztürk, D.G., Agami, R., **Gözüaçık, D.**, "MIR181A regulates starvation- and rapamycin-induced autophagy through targeting of ATG5", *Autophagy*, vol. 9, 374-385, 2013.

Timuçin, E., **Sezerman, U.**, "The conserved lid tryptophan, W211, potentiates thermostability and thermoactivity in bacterial thermoalkalophilic lipases", *PLoS One*, vol. 8, 2013.

Toprak, E., Veres, A., Yıldız, S., Pedraza, J.M., Chait, R., Paulsson, J., Kishony, R., "Building a morbidostat: an automated continuous-culture device for studying bacterial drug resistance under dynamically sustained drug inhibition", *Nature Protocols*, vol. 8, 555-567, 2013.

Ünver, T., Türktaş, M., **Budak, H.**, "In planta evidence for the involvement of a ubiquitin conjugating enzyme (UBC E2 clade) in negative regulation of disease resistance", *Plant Molecular Biology Reporter*, vol. 31, 323-334, 2013.

Yılancıoğlu, K., **Çetiner, S.**, "Rediscovery of historical *Vitis vinifera* varieties from the South Anatolia region by using amplified fragment length polymorphism and simple sequence repeat DNA fingerprinting methods", *Genome*, vol. 56, 295-302, 2013.

Zhang, Y.Q., **Yazıcı, M.A.**, Gökmen, O.Ö., **Çakmak, İ.**, Zhang, F.S., Zou, C.Q., "Comparison of winter wheat genotypes differing in zinc efficiency and origin: the zinc uptake and enzyme activity", *Communications in Soil Science and Plant Analysis*, vol. 44, 2875-2883, 2013.

Computer Science and Engineering

Abdalaal, A., Nergiz, M.E., **Saygın, Y.**, "Privacy-preserving publishing of opinion polls", *Computers & Security*, vol. 37, 143-154, 2013.

Amro, B., **Saygın, Y.**, **Levi, A.**, "Enhancing privacy in collaborative traffic-monitoring systems using autonomous location update", *IET Intelligent Transport Systems*, vol. 7, 388-395, 2013.

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Orta Mahalle

Universite Caddesi

No: 27 34956

Tuzla - Istanbul

Phone: +99-0216-4839600

Fax :+99-0216-4839550

