



College of Engineering

## College of Engineering Community

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## **Honoring Outstanding Graduation Projects for the First Semester 2015/2016 Under the Auspices of BAE Systems-SA**

The College of Engineering's Vice deanship of Development & Quality organized on Wednesday 26 Rabii' Awwal, 1437 (January 6<sup>th</sup>, 2016) an exhibition and party to honor distinguished graduation projects for the first semester of the academic year 1436/1437H (2015/2016).

The event was hosted by BAE Systems' representative, Dr. Abdullatef Mohamed Al-ALSheikh, and the College Dean, Professor Khalid Ibrahim Alhumaizi. During the event, certificates and prizes were presented to 18 students representing multidisciplinary projects, one involving both the Chemical and Mechanical Engineering departments, and two representing the Civil Engineering and the College of Architecture and Planning. In addition, 24 students from various college departments were honored for their senior design projects. The supervising professors of these projects were also honored. Furthermore, 26 students from the Engineering Design course were also honored.



## **The President of the General Organization of Military Industries Visits the Institute of Advanced Manufacturing**

His Excellency Engineer Mohamad Ben Hamad Al-Madi, president of the general organization of military industries accompanied by a delegation from the organization made a visit on 2/2/2015 to the Institute of Advanced Manufacturing in the College of Engineering. The guests were introduced to the capabilities of the Institute and its labs, and were briefed on the latest technologies available in the Institute and its various projects.



### **The Chemical Engineering Department received the UAE Award for Energy**

Under the patronage of His Highness Sheikh Mohammed bin Rashid Al Maktoum, UAE Vice President, Prime Minister and Ruler of Dubai, the Supreme Council of Energy in Dubai organized a ceremony to honor the winners of the Emirates Energy Award in 2015. The second edition of the Award was held this year under the slogan «sustainable future». More than 112 work were submitted to the prize committee. The research team from the College of Engineering, led by Professor Dr. Saeed Al-Zahrani and the student Ahmed Hafez received the award for research and development in the field of design and implementation of a mobile solar operated membrane desalination plant that was designed and run in the department of chemical engineering at the College of Engineering.





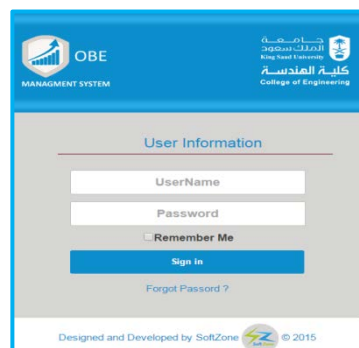
## Workshop on “OBE: Outcome Based Education System”

The College vice deanship for development and quality organized on Tuesday 15 December 2015 (4 Rabiie I 1437 H) a workshop for its faculty members and staff on the software “OBE: Outcome Based Education System”. The aim of the workshop was to introduce the software, its importance and its usage. The software was designed specifically for faculty members and students of the College in order to manage the various learning aspects including the evaluation of learning outcomes and teaching effectiveness. The software consists of three main parts: management of student’s attendance, courses and programs evaluation and surveys

The College has started this semester (first semester of the academic year 2015/2016) the application of the software to a number of its academic programs courses. The software was devised by the College of engineering under the supervision of the College vice deanship for development and quality in order to align it with the nature of the College courses and the requirements of the international and national accreditations. The software was part of a project proposed by the College to the University Vice Deanship for Educational and Academic Affairs. After the approval of the project, it became part of the bigger project of the University Vice Deanship for Educational and Academic Affairs (Procedures for Evaluation of Learning Outcomes and Teaching Effectiveness), in which six University colleges, in addition to the engineering college, are participating (Each college uses a different concept according to its vision).

The workshop included an introductory presentation on the software and its usage by Dr. Waleed Zahid, the College vice dean for development and quality. A practical application was presented by Prof. Shehab-Din Mourad, a faculty member of the civil engineering department. Practical training on the use of the software was also carried out in the computer labs of the College.

The workshop was attended by the University vice dean for development Dr. Abdullah Alharbi and the College dean Prof. Khalid Alhumaizi as well as by a number of faculty members. The College plans to apply the software to a larger number of its courses with the start of the second semester.





## **A student and a Faculty Member from the College Scored Advanced Places in the University Tournament for Table Tennis**

The KSU vice deanship of student affairs for sports activities, represented by the direction of sports programs and sports clubs, organized a tournament for tableTennis for students and university staff in the first semester of the academic year 2015/2016 in the sport hall (Al Khyama) in the King Saud University. The event saw the participation of 82 players. The student Abdelaziz AlGharni from the College won the scndd place in the student category, while Dr. Bashir Saleh from the industrial engineering department received the first place in the staff category. The winners were honored by Mr. Mohsen Saharqaoui and Mr. Turki Almaleki.



## **A College Student Represents the World Youth in the UNESCO International Forum for Youth**

The young Saudi student Faisal Alghanam from the Engineering College at KSU represented the world youth during the international forum organized by the UNESCO, along with two young people from Finland and Indonesia. The three young people were selected among 500 young male and female from around the world. The 9<sup>th</sup> UNESCO forum of 2015 is an integral part of the general UNESCO conference which was held on fall of 2015 right before the 38<sup>th</sup> general conference held in Paris. The forum is an opportunity for youth of both sexes from around the world to meet and discuss issues related to youth problems and solutions.

The participation of the College student Fausal Alghanam came after he was awarded the opportunity by the foundation of Mohamed Ben Salman Ben Abdulaziz (Misk) to represent



Saudi Arabia upon request by the UNSCO and following the excellent participation of Saudi youth in the conference who were represented by 10 people from both sexes. Alghanam made a presentation in the presence of the general director of UNESCO (Irena Bofoca) with the participation of more than 70 ministers and representatives of member states, the UN, various agencies, civil society and regional organization that put their combined efforts in conveying the voice of both Saudi and world youth to decision makers during the conference.



### **Patent for Eng. Abdullah Bugshan Research Chair in Expansive Soils**

Patent number: SA 4544

Saudi Patent Office, King Abdul-Aziz City for Science and technology. Date: 13/12/2015

Patent title: Composition and System for Thermal Insulation

Inventors: Prof. Refat El-Sheikhy (Engr. Abdullah Bugshan Research Chair in Expansive Soils), Prof. Mosleh Al-Shamrani (CE Department), and Prof. Abdul Mohsen Alshaikh (CE Department)

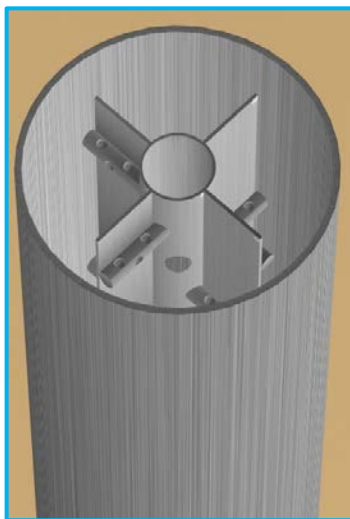


The invention is a Thermal Insulator composition system made of nano-clay powder with powder made of palm fronds which are natural, green, cheap, and environmentally friendly materials. The system is simple with low cost, light weight, with no side effect, sustainable and energy saver. It may be in the form of flexible and deformable sheets or hard plates. The invention is suitable for many different applications such as in insulations of

buildings, food packaging, automobile, machines, air condition systems, electrical devices and cables, and aircrafts and aerospace engineering, medical devices and biomedical engineering. It can be used as a thermal lining and coating. It has been successfully used for insulating the elevated water tanks controlling the water temperature at a suitable degree for human use in summer.

### **The Department of Civil Engineering Received a Patent in Fire Safety Design of Concrete Columns in High-rise Buildings**

Professors Husain Abbas, Yousef A. Al-Salloum, Saleh H. Alsayed and Mohammad S. Alhaddad from the Department of Civil Engineering, have been granted Saudi patent (SA 4343, 15 Sept. 2015) for their invention about a method for the fire-safety design of concrete columns for high-rise buildings. This invention has already been recognized internationally through the grant of US patent (US 8,484,915 B1, Jul. 16, 2013). The inventors are also members of Moa'alam Mohammed Bin-Laden (MMB) Chair for Research and Studies in Strengthening and Rehabilitation of Structures at College of Engineering.



The invention employs a centrally located perforated steel pipe in concrete-filled steel tubular (CFST) columns which are nowadays a preferred choice of structural designers for high load carrying capacity, faster construction and no requirement of formwork. The CFST column has a co-axial perforated steel pipe with connected horizontal perforated pipes at regular vertical spacing. The perforations are closed before concreting using water resistant polymer caps which get burnt during fire thus providing clear passage for the escape of gases. The proposed invention has three-fold benefits: (i) Under normal service conditions, it helps in the dissipation of the heat of hydration of concrete; (ii) During fire, it provides better means for the escape of gases directly to the outside atmosphere without affecting the air inside the building; moreover the annular space in the column may be used for extinguishing fire by passing water through the inner



pipe and spraying to the fire prone zones and (iii) Post fire, the system may be used for strengthening the fire damaged concrete.

### **The Department Industrial Engineering Received US Patent on Wave Energy Conversion**

Professor Ali Samhan from the department of industrial engineering received a US patent 9,610,268 B1 on the invention on “Wave Energy Converter Using Oscillating Pendulums ”

### **ABET Evaluation of B.Sc. Engineering Programs for Re-Accreditation**

During the period 7-9 Nov., 2015 (25-27 Muharram 1437), The Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology: (ABET: [www.abet.org](http://www.abet.org)) evaluated six B.Sc. engineering programs of the College of Engineering, and two B.Sc. programs of the college of Computer Sciences and Information, for renewal of the accreditation obtained in 2010.

The College of Engineering B.Sc. programs include: Chemical, Civil, Electrical, Industrial, Mechanical, and Petroleum and Natural Gas Engineering. The college of Computer Sciences and Information programs are the Computer and Software Engineering. The final decision of the ABET is expected to be issued in August 2016 (Dhual-Qa’da, 1437).







### **SABIC Supports the College Exhibition**

SABIC company has agreed to support the formation of the College exhibition which is aimed to introduce the College to its visitors. The College has already designed and begun to build the exhibition. In this regard, Prof. Khalid Humaizi, the College Dean made a visit to the SABIC exhibition Center at the company location.



### **Industrial Engineering Department Organized a Party after Work in ABET**

The department of industrial engineering organized a dinner party after the successful work during ABET accreditation visit.





## Master and PhD defense in the Industrial Engineering Department

1. M.sc thesis defense of Eng. Hussam Abdu Ghaleb titled "Design and Implementation of deadlock control in manufacturing systems". The thesis defense was held on December, 3<sup>rd</sup> 2015
2. PhD thesis defense of Waleed Basulimnan titled "An artificial neural network model to predict anthropometric dimensions for Saudi males". The thesis defense was held on November 26<sup>th</sup>, 2016

## Saudi BAE Systems Sponsors Distinguished College Students

As part of its keen interest in social responsibility programs, the Saudi- BAE systems continues to provide scholarships for the College of engineering students at KSU. The company signed an agreement to provide scholarships to twenty students from the College in mechanical and electrical engineering departments. The company has been providing sponsorship for thirty of the College students.

The agreement was signed from one side by the students receiving the scholarships and on the other side by Dr. Abdullatif Al.Sheikh the vice president for strategy and business development and the supervisor of the BAE systems program for cooperation with the Universities. The agreement was signed in the presence of the College Dean Prof. Khalid Humaizi and the vice dean Dr. Abdulmohsen Albaddah. The agreement was signed in the college of engineering building in King Saud University, Riyadh. Through the agreement, a monthly stipend will be provided to each student in addition to training opportunities and the presentation of numerous lectures.



## Workshop in the Institute for Advanced Manufacturing on “Support of the Spare Parts Manufacturing”

Under the patronage of his Excellency Prof. Dr. Badran A. Al-Omar the university rector, a workshop was organized on 20 October 2015 in the University main hall on the theme “Digital



manufacturing in support of spare parts manufacturing”. The activities of the workshop were inaugurated by Prof. Dr. Abdullah Al-Slaman, the vice rector with the presence of Prof. Dr. Ahamd Al-Amri the vice reactor for graduate studies and scientific research and with the participation of military forces, the general organization of saline water conversion and the Khalifa holding company. The workshop was also attended by a large number of representatives of relevant public and private companies as well as academicians.



### **The College and KSU Received Honor for Participation in the (Talent) Program**

The King Abdulaziz and His Companions Foundation for Giftedness and Creativity (MAWHIBA) organized a ceremony to honor the supervisors of its summer enrichment program (2014-2015). Among those who were honored was the “Engineering Innovation Center” at the College of Engineering which hosted the summer enrichment program in the principles of Engineering Design in the period between 26 July to 13 August 2015. 40 Secondary School students from the first grade from Riyadh city participated in this program. KSU was Also honored as a party sponsoring the Talent Program. The College vice dean Dr. Abdulmohsen Albadah received the honoring certificates.



### **Cooperation between the College and Eng. Bagshan to Support the Program of Student Visit Abroad**

In quest to improve the efficiency of the education of its students, the College has taken the initiative to cooperate with Eng. Abdullah Bagshan to sponsor 6 to 8 of the College students to study for one term in a number of international universities.

### **Saudi Aramco Sponsors the Distinguished College Students**

Three of the College students have joined the Saudi Aramco College Continuation Program. The responsible for the program, Eng. Emad Taha, made a presentation to the College students on 11/11/2015 about the program. The program aims at providing scholarships to attract Saudi students of distinguished capabilities who are already pursuing their education.

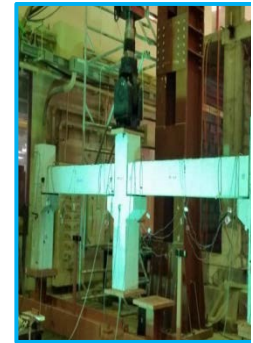
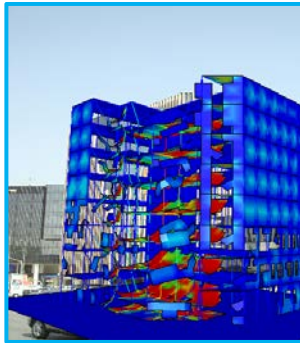
Eligible for scholarships are students who have finished 60 credit hours and did not exceed 100 credit hours in a bachelor program in local or outside universities, 12 credit hours of which should be in the speciality.

### **Improvement of Precast Buildings to Resist Blast Attacks**

Researchers working at Moad'alam Mohammed Bin-Laden (MMB) Chair for Research and Studies in Strengthening and Rehabilitation of Structures at College of Engineering, KSU, are working towards the vulnerability assessment and mitigation strategies against blasts on existing precast buildings in Saudi Arabia. NPST has awarded a research project No. (12-BUI2620-02) for this purpose. Prof. Tarek Almusallam is the principal investigator of the project. Precast construction has become increasingly common in the Kingdom of Saudi Arabia because of its speed, which is extremely desirable due the current high rate of development in the Kingdom. In general, buildings are extremely vulnerable to progressive collapse if some of the columns are lost



due to blast exposure. As precast buildings lack structural continuity because of the joints, they are even more susceptible to progressive collapse than cast-in-situ monolithic buildings. The prevalent prefabricated connections would be tested experimentally through progressive collapse testing of scaled reinforced concrete building frames. The researchers are hopeful for providing a cost-effective improvement in the robustness of new precast building structures. The study would be useful for the design of different types of precast structures ranging from civilian buildings to military facilities



### Extra-curricular Student Activities

During the first semester of the academic year (2015/2016) 97 student extra-curricular activities were held with more than eleven thousands beneficiaries.

### This Issue was Prepared by:

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