



College of Engineering Community

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Meeting of Veolia Company with the College Deanship

Delegates from Veolia Company have made a visit to the college of Engineering on Monday February 16, 2016 and held meeting with the College dean and vice deans. The meeting included presentation by the College of its most important achievements and its relationships with the industrial sector, as well as a discussion of the mechanisms and potential areas of cooperation between the two parties such as making available training opportunities for college student, students' participation in the company's contests, and opportunities for the development of the capabilities of the graduates. Veolia Company operates in energy, water and waste management areas.



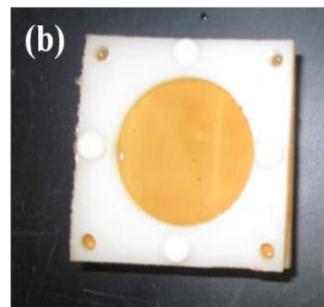
A college Research Team was Awarded Patents for the Invention of New Membranes Made from Crab Husks to Purify Industrial Wastewater

A research team from the College managed to develop membranes made of cheap bio-plastics for the removal of toxic heavy metals from industrial wastewater. The inventions were documented in the US Office of Inventions No. US 9,289,746 on March 22 2016 and the European Bureau of the invention No. EP 2,792,688 on 10 June 2015. The new membranes were developed from ultrafine (Nano) fibers manufactured from a substance extracted from the eco-friendly husks of marine crab and then used to remove heavy metals from industrial aqueous solutions of wastewater. The new membranes are characterized by stability in aqueous solutions with a mass loss of only 6%, which is small compared to other Nano-membranes. Other key features of these nano-fibers membranes include a small diameter size, large surface area, high porosity, superior mechanical performance and desired surface functions. The new membrane also decompose biologically with time, do not pollute the environment and do not form solid waste after use compared to other plastic membranes. The new invention contributes to strengthening the application of nano-fiber technology in filtration membranes, in the multi-functional and medical engineering tissues, in the

speed of drug delivery through the skin, and in vascular grafts in surgical operations. The research team consists of professor Waheed Almasry, Dr. Sajjad Haider, Dr. Yousef Alzegier, engineer Fikri Abdel Ragib and Dr. Mohammed al-Haj Kali, all of them are employees of the department of chemical engineering at King Saud University. Both inventions are wholly owned by King Saud University.



Sea Crab



Nano fiber membranes



Eng. Fikri Abdul Rageeb



Dr. Sajad Haidar



Prof. Waheed Almasry



Dr. Youssef ALZegheir



Dr. Mohammed Haj Kali

College Students Honored for Fulfilling Graduation Requirements In Record Time

The College dean, Prof. Khalid Alhumaizi honored two students from who had finished bachelor's degree requirements in time less than the regular period. The two students are "Ali bin Mohammed Abdullah al-Dakhil" from the electrical engineering department who received first class honors, and "Anas bin Ibrahim ben Morirm Alguer" from the mechanical engineering department who received second class honors. The ceremony was attended by the vice dean for development and quality, Dr. Waleed Zahid, the vice dean for academic affairs, Dr. Ahmed al-Sheikh, and the supervisor of student activities and college student council Eng. Adel Al-Yousef.



Competition Organized by the Center of Engineering Innovation

The College Center for Engineering Innovation and in cooperation with the “Elm” company has organized a competition for the purpose of enhancing the spirit of innovation and creativity among the University students. The number of proposed ideas was 14, and 8 of them managed to reach the competition. Student’s teams were organized to design and execute their proposed ideas. Work continued for 50 hours during the weekends for two weeks. A number of innovative models were developed. It should be noted that the college of engineering and in collaboration with “Elm” has organized a number of workshops during this competition in order to enhance the technical and marketing skills of students. The competition ended on Saturday 9 Rajab 1437. The first place was won by the smart lock idea that makes homes safer and earned a SR 20,000 prize. The second prize went to the idea of hajji bracelet that contains the personal information of the haji and carried the price of SR 15,000, while the third place went to the prayer chair that helps praying men performing the prayer rituals without leaving the line or annoying the others praying with him. The prize was SR 10,000.





Evaluating Quality Management Systems of the College B.Sc. Programs

Starting on Sunday, 10 Rajab 1437 H, a team of evaluators from the quality management system at King Saud University (QMS-KSU) began to review and evaluate the quality management systems for seven bachelor's degree programs in the College of Engineering, The "King Saud University quality management system, KSU-QMS" consists of 11 criteria that measure the effectiveness of academic programs, and ensures the quality of inputs and outputs of the program. The system emphasizes the need for a certain methodology of work, the application of this methodology and its improvement in performance over time, as well as the determination of the level of achievement that has been made and comparing it against benchmarks levels.



“Mawhiba” Visit to Center of Engineering Innovation

His highness Dr. Khaled Al-Sabti, Secretary General of King Abdulaziz and his Companions Foundation for Giftedness and Creativity (Mawhiba) has made on April 19, 2016 a visit to the College Center for Engineering Innovation in the College. He was greeted by Dr. Youssef Assiri, the University vice rector for planning and development, Dr. Khalid Alhumaizi, the College dean, the College vice deans and some department chairmen. In the beginning of the visit, Dr. Abdulmohsin Albadah, the College vice dean for graduate studies and scientific research and the Center supervisor made a presentation about the center, presenting its objectives and philosophy. After that, discussions were held on the importance of what the Center presents to the College students and on the cooperation aspects with “Mawhiba”. After that the guests made a tourney around the center and listened to the explanations given to them about the facilities of the center and the projects that students are performing there.



The College Won Most Awards of University Activities

The college of engineering won many awards at the conclusion of the academic year 1436-1437 during the ceremony held on April 18, 20016 by the Deanship of Student Affairs under the auspices of the University Rector Prof. Badran Alomar. More than 200 student activities were organized at

the college of engineering this year and were distributed among the different departmental clubs. The lion share went to the club of civil engineering department who performed 60 activities and won the first place at the university level, followed by the chemical engineering club with approximately 45 activities scoring the second place at the University level. The College also won the first place in the Knights cultural competition organized at the university level. Three students: Fawzi Almutahna, Muhannad Abu Bakr Bahermz and Abdullah bin High-Otaibi represented the college in that competition. Also Saud bin Ibrahim Alsaif, a student from the electrical engineering department received the award for the Ideal Student at the university level.



Guests of the Ceremony



Honoring the wining civil and chemical engineering clubs



Honoring the college team in the knight cultural competition



Honoring the ideal student at the university level (Saud AlSaif)

Research Excellence Day of the College for the Academic Year 1436/1437

Under the patronage of Professor Ahmed Salem Alamri, the vice rector for graduate studies and scientific research, and the presence of the College dean and vice deans, the annual research excellence day was organized on 19/4/2016. An exhibition was opened in the College hall and included graduate students projects in addition to student's projects that have won in the competition organized by the Center of engineering innovation. After that a number of distinguished researchers were honoured with certificates and monetary gifts. It should be noted that the number of candidates for this year was 51. The awards were distributed as follows:

- Six faculty members: (Dr. Majid Abdulrahman Alkanhal; Dr. Youssef Abdullah AlSaloum; Dr. Tariq Ben Hamoud Almousalam; Dr. Abdulrahman Ben Moshaba AlAhmari; Dr. Saeed Mohamed Zahran; Dr. Mohamed Omar Haj Kali).
- Two new faculty members: (Dr. Ahmad Mohamed Anaem; Dr. Mohamed Alrabi Krid).

- Two Ph.D graduate students: (Nafeed Ahmed; Mod Anouar Hussein Abou Taher).
- Two M.Sc graduate students: (Hani Sayed Abdo; Waseem Allah Khan).
- Two M.Sc. graduate students – Posters: (Hadeed Ahmed Sher; Hani sayed Abdo)

Awards were also given to the best departments for publications in ISI-based journals for year 2015: (1) Chemical engineering; (2) Electrical engineering (3) Mechanical engineering



Cooperation between the General Presidency of Youth Welfare and the College Center of Engineering Innovations

A memorandum of understanding (MoU) was signed on 17/7/1437 H between the General Presidency of Youth Welfare and King Saud University represented by the college of engineering innovation center. The MoU was signed by his highness Prince Abdullah Ben Musaid, the general president of the youth welfare and his excellency professor Badran Alomar, the University rector. The MoU aims to strengthen the cooperation between the Presidency and the University to create incentive programs for creativity and innovation for young people in order to raise the level of responsibility among them. The University will contribute by providing specialized courses to raise the moral and skills for youth in applied science and engineering fields. The University will also support the Presidency works through the adoption of the projects performed by the college students in the innovation center and through supporting voluntary work for young Saudis through student clubs. The two parties will also cooperate in the field of local, regional and international competitions and promote participation of Saudi youth by providing moral and material support. These competitions may include, for example, eco-friendly auto racing, robot races, racing small aircraft and civilian applications, or any other competition of engineering character. The signing ceremony was attended by Professor Abdullah Alsalman, the vice reactor, the college dean Prof.

Khalid Alhumaiz, Dr. Walid Zahid, the college vice dean for development and quality, and Dr. AbdulMohsin Albadah vice dean for graduate studies and scientific research and the supervisor of the center of engineering innovation.



Lectures by Saudi BAE Systems to Students of Local Internship Program

Saudi BAE systems has presented on May 2016 two lectures to the college students who are enrolled in the local internship program that was set up within the cooperation framework between the college and the company, which was started four years ago for the goal of sponsoring academically exceptional students.

The first lecture – presented in the Company headquarter - was about Winning Business and was given by the president of business development in the company and included the definitions, the role of all parties in the success, the stages of execution of contracts, how to win contracts and limit the risks and what it is meant by the project management life cycle. The lecture received great interest and interaction beyond expectation.



The second lecture was on Product Safety and was presented in the company headquarter by the president of Company's product safety. The lecture included a number of aspects about the

experience and expertise of BAE systems, the presentation of the most serious mistakes that affect the safety and how to avoid them, in addition to the various experiences earned by the company investigators. The lectures included many real examples. It also included awareness about human mistakes in other aspects of life and an overview of procedures and ways that should be followed to control its effects.



College Annual Meeting for the Academic Year 1436/1437H

The College's annual meeting for its employees was held on Friday, 6 August 1437H. The meeting included a welcome speech by the College dean Prof. Ibrahim Alhumaizi, and included the honoring of the colleagues who have retired (Prof. Khalid bin Ibrahim Duweish and Dr. Hamad bin Saleh Hugail from the electrical engineering department, Dr. Abdullah bin Othman Nhatt from the mechanical engineering department, Dr. Abdul Hakim bin Moqbil AlGhanem and Dr. Abdul Rahim bin Mohamed Arafa from the civil Engineering department, Ahmed bin Ali Kaabi of civil engineering workshops, Abdulrahman bin Sulaiman Howaish of registration unit, Abdulrhaman Ben Solaiman Alhowaish from the registration unit, and Mr. Deeban Fahad Aljamaz, the head of the administration). Honored also: Professor Mossad bin Nasser Alawad on the occasion of the end of his tenure as chairman of the department of petroleum and natural gas engineering and Dr. Mohammed Bin Abdulrahman Al-Sheikh on the occasion of the end of his tenure as vice dean for graduate studies. Colleagues whose contracts ended were also honored (Dr. Zuhair Mohammad

Hijaz, Prof. Shuja Abbasi and Eng. Mohammed Jaafar Mohammed from the department of electrical engineering, Dr. Ali bin Qais Alwatri from the department of mechanical engineering, and Eng. Abdullah Wakeel and Eng. Abdul Sattar from the Department of civil Engineering). Dr. Walid Muhammad Sayeg from the civil engineering department who resigned from the department was also honored, Lecturer. Adel Ben Ali Yousuf, general supervisor of student activities and Eng. Ahmed Nasr Ikdasha the supervisor of physical activity were honored for their efforts in organizing and activating student and sports activities.





Third Meeting of College Alumni

Under the patronage of the KSU rector, Prof. Dr. Badran Alomar, the college vice deanship of quality and development has organized the third meeting of college alumni on May 18, 2016 in the main lobby of the university, as part of efforts by the college to strengthen the relationship and communication with its alumni. His excellency the president of the Communications and Information Technology Commission, Prof. Dr. Abdul Aziz Al Ruwais, honored the ceremony which participated by about 150 college alumni, in addition to the university vice president for educational and academic affairs, Dr. Abdul Aziz Al-Othman, the College dean Prof. Khalid Humaizi, the college vice deans, heads of departments and a number of faculty members and employees of the college administration. The meeting began by a welcome note of the college dean followed by a word from Dr. Abdul Aziz Othman on behalf of His excellency the KSUrector. After that Dr. Abdul Aziz Al Ruwais delivered a speech in which he talked about his experience, the scientific process, his vision for the prestige and the potential of the College of Engineering and the services provided to the community. After that, Dr. Waleed Zahid, the college vice dean for development and quality spoke about the goals of the alumni meeting and the support expected from college alumni, and he floated the idea of the establishment of a Council for alumni to organize the event every year. After that, a dialogue started where a number of participants shared their experience while others addressed questions. The participants were invited at the conclusions of the meeting to a dinner reception.





Honoring Outstanding Graduate Projects for 2016/2017

In coordination with the unit of employment and graduates and the quality unit, the College vice deanship of development and quality has organized on Tuesday 17 Shahban 1437 an exhibition and a ceremony to honor the distinguished student projects for the second semester of the year 1436/1437, an event which was sponsored by the Saudi BAE Systems, represented by the company vice president for strategy and business development (Dr. Abdulatif Mohamed Alsheikh) and the college of engineering represented by the Dean Prof. Khalid Ibrahim Alhumazi. During the ceremony, monetary awards and certificates were distributed by the company to 17 distinguished student projects. These projects were held jointly between the industrial engineering department and college of applied medical sciences, between the mechanical engineering department and the college of dentistry, and between the civil engineering department and the college of architecture and planning. In addition to that, 24 student's graduation projects from the different college departments were honored, together with their supervisors. Ten student's projects from the "Engineering Design" course were also honored.

Memorandum of Understanding between the College of Engineering and the Institute of Research of the Korean Highways Company

In its bid to contribute to the development of the national capacity in scientific research in the field of transport and roads, the college of engineering signed on May 26, 2016 in the capital of South Korea (Seoul) a memorandum of understanding with the Research Institute of the Korean Expressway Corporation. The memorandum was signed by the College dean Prof. Khalid Alhumaizi and the director of the Research Institute Mr. Lee Meonq Heun. The MoU aims to promote the exchange of human resources, technological information and research collaboration in the field of roads and transport.



Patent Awarded to College Researchers for the Invention of A Compound to Absorb Gases

A research team from the College, composed of Dr. Waleed Zahid, associate professor of environment in the department of civil engineering, Dr. Ahmed Abasaheed professor of chemical engineering and Dr. Mohamed Othman, assistant professor of environmental engineering in the civil engineering department has acquired and granted a patent in the US Patent Bureau (US 9,393,547 B2 – July 9, 2016) for the invention of a compound of high efficiency for the absorption of sulfur element from the gases containing it, such as hydrogen sulfide and carbon dioxide, as well as the possibility of using it in applications such as control of odors in the wastewater treatment plants in addition to some industrial applications such as refining of industrial natural gas from poisonous hydrogen sulfides. This achievement comes as result of a Ph.D. dissertation carried out by Dr. Mohamed Othman under the supervision of Dr. Waleed Zahid and the co-supervision of Prof. Ahmed Abasaheed. The three researchers also published an article from this work in the Journal of Hazardous Materials (impact factor of 4.33)



Prof. Ahmad Abaseed



Dr. Waleed Zahid



Dr. Mohamed Othman

Scientific Papers Presented In An International Conference By Students From The Electrical Engineering Department

Two students (Saud Ibrahim Alsaif and Abdullah Omar Alomar) from the electrical engineering department presented two papers during the ANTEM conference held in Montreal, Canada. The conference which was held in the period between 10 and 13 July 2016 and sponsored by the association of electrical and electronics engineers (IEE) dealt with applied topics on electromagnetism and aeriels technologies.

The students, under the supervision of Prof. Saleh Ashbili from the electrical engineering department in addition to Dr. Mohamed Agmad Asharf, the researcher at King Abdulaziz City for Science and Technology participated with two scientific papers on the design of aeriels for fifth generation. The papers were:



Student Abdeulal Alomar



Student Saud Alsaif

- "A Millimeter Wave Vivaldi Antenna with Contoured Platted Vias for Next Generation of Wireless Communication Systems ."
- "Design and Analysis of Millimeter wave Series Fed Microstrip Patch Array for Next Generation Wireless Communication Systems"

Eid-Fitr Celebration

The college of engineering has organized the Eid-Fitr greeting ceremony on Monday, 10/06/1437 H in the presence of the College dean and vice deans.



The College Hosts the “Mawhiba” Enrichment Program

For the second consecutive year, the college of engineering has cooperated with “Mwahiba” program for enrichment. The program started on Sunday August 14, 2016 and consisted of seven units for enrichment: two units for engineering design, one in the encryption and one in the mechanical, electrical engineering and advanced physics. The number of participating students was 140 from mid and high schools. The program was supervised by 5 faculty members from the college of engineering and two from the college of computer science. The students spent three weeks in the college campus receiving intensive scientific programs based on interactive learning, applications and discussion. The program also included various social, cultural and sport activities as well as field studies.



Two College Professors from Electrical Engineering Department were Awarded the Fifteen AlMarai Prize for Scientific Innovation

Associate professors Dr. Ehab Salah al-Din Muhammad and Dr. Mohamed Rami Abdul Aziz from the department of electrical engineering received the fifteen Almarai award for scientific innovation for their invention entitled "A new absorber of large wavelengths infrared light using nanotechnology Plasmon structure". The invention presented a new Plasmon Nano structure using the new structure of chessboard made of gold, which enhance the optical absorption of long-wave infrared light, and can be used in many optical detectors or micro-bolometer applications.



Technical and Consultancy Studies of Electrical Engineering Department

- Dr. Abdullah bin Mohammed al-Shaalan and Dr. Abdul Hamid bin Abdul Wahab Ohaly from the department of electrical engineering completed a study sponsored by the Al-Babtain power and communications company that consisted of conducting tests on special columns for the transfer of power lines of medium voltage according to the conditions and specifications of the Saudi Electricity Company.
- Dr. Abdullah bin Mohammed al-Shaalan from the department of electrical engineering in collaboration with the architect Khalid Bin Abdul Aziz Al-Arfaj from the studies and statistics division of the Saudi electricity company conducted a study on a cardboard and paper mills in Riyadh city in order to inquire about the causes of power outages suffered by the plant that

lead to heavy losses up to nearly three million dollars per annum. The study has resulted in a solution for this problem, which has helped to reduce those losses and improved the level of electrical services to the plant.

- Dr. Abdullah bin Mohammed al-Shaalan and Dr. Essam bin Abdul Aziz Al Amar from the department of electrical engineering conducted a survey to measure the degree of awareness for the rationalization of electricity use in King Saud University. The obtained results showed that there is a significant energy waste, particularly in the air conditioning and lighting facilities. The study also made recommendations to reduce this waste.

Electrical Engineering Students are Studying an E-course Offered by “Juniper Networks”

A number of students from the electrical engineering department had benefited from the agreement signed last year by the College after KSU joined the academic program alliance with the company (Juniper Networks). Students in the department are now required to study and pass a short course offered by the company in the basics of communications networks before taking the course on communication networks. Course professor Dr. Basil AlSadhan explained that the duration of the scheduled course is 5 hours, and is in line with course content taught in the department. Each section of the course content is followed by questions to test student understanding, and at the end of the course, the student must pass the planned study.

Students praised the course offered by (Juniper Networks) in helping them strengthening the information they have studied in the classroom. They also paid tribute to the great extent of visual presentations and animations that contributed to the understanding of the scientific content of the communications networks course.

“Engineer Tariq Alqosaibi Award for Excellence in Civil Engineering in Saudi Arabia” for the Year 1435-1436H

Under the patronage of Dr. Abdullah Al-Salman Vice rector and in the presence of Dr. Abdulaziz Othman, vice rector for educational and academic affairs and Dr. Abdullah Sugair vice rector for projects and the Dr. Abdul Mohsen Al-Baddah, the college of engineering vice dean for graduate studies and Scientific research and Dr. Abdul Hafeez Alshinawi, head of civil engineering department and Eng. Tariq Alqosiabi, a ceremony was held on Tuesday, 23/4/1437H in Derwaza Hall for the presentation of "Engineer Tariq Alqosaibi Award for Excellence in civil Engineering in Saudi Arabia," an award given for scientific research of practical excellence in the field of civil engineering in all its branches in the Kingdom, and which carries a monetary value of fifty thousand SAR .The award aims to strengthen the relationship between Saudi universities and the industrial sector and contribute to the development of applied scientific research in the areas of civil engineering in the kingdom. The number of award candidates for the academic year 1435-1436H

was 87 papers in various civil engineering disciplines. As a result of the review process, two research projects received the same appreciation and were given the prize equally, namely:

The first winning project was from the structural engineering, and entitled:

" Strengthening reinforced concrete using CFRP and wire mesh for improved impact resistance," by Prof. Tarek AlMusalam and his team.

The second winning project was from the environmental engineering, and entitled: "Performance of Aerated Submerged Biofilm Reactor Packed with Local Scoria for Carbon And Nitrogen Removal from Municipal Wastewater" by Dr. Waleed Zahid and Dr. Saber El-Shafai.

At the conclusion of the ceremony, the winners were honored and well as the sponsor of the award, Engineer Tariq Alqosaibi.



News of "the Sustainable Energy Technologies Center"

- **Participation in the competition "A King Ambition for the Future of a Homeland", 28 March 2016.**

The Sustainable Energy Technology (SET) Center participated in the competition entitled "A King Ambition for the Future of a Homeland". The competition gained a great importance because it coincided with the preparation of the national program of transformation in the kingdom, aimed at boosting investment, increasing production and activating the role of the existing private sector to diversify sources of income and not rely only on oil. The competition was launched as a national initiative which was held for the first time at the level of the Saudi universities to review the successful models of creativity by the daughters of the nation in innovation, manufacturing and to highlight the importance of stimulating the national women cadres to have a prominent

role in advancing development of the knowledge economy in light of recent trends followed by the kingdom, and to create a link between the university and the investors in order to ensure the expansion of investment opportunities and increase national production in science, technology and innovation

- **SET organized the fifth series of lectures**

The SET organized on April 5th, 2016 the fifth series of short lectures on sustainable energy technologies. The center has been organizing these lectures every year since 2012. A large number of researchers, students and faculty members have participated in this series of lectures. The center has granted them a certificate of attendance.

- **The Director of the Center participates in the Riyadh Economic Forum**

Dr. Mamdouh bin Saud bin Thunayan Al-Saud, director of the Sustainable Energy Technology Center participated in Riyadh Economic forum during its seventh session held on March 8, 2016, where he confirmed that high temperatures affect solar cells according to the materials used in the production of these cells, indicating that not everything that is made by overseas manufacturers is appropriate for the environment of Kingdom. This came during the second session of the Forum, which was entitled "Economics of alternative and sustainable energy in Saudi Arabia, challenges and future prospects", headed by Prince Dr. Turki bin Saud Al-Saud, Chairman of the King Abdul Aziz City for Science and Technology. The forum was held under the patronage of the Custodian of the Two Holy Mosques.

- **Cooperation Agreement between SET and the Spanish Abengoa company**

An agreement was signed between SET and the global Spanish Abengoa company to study the environmental conditions in the Riyadh region and its effects on the efficiency of solar cells. The company will bear all the costs of construction and the study. It will build a solar cell and accessories at its own expense, and these devices will devolve ownership to King Saud University after the end of the study. The study and work on the project have already begun.

- **Cooperation Agreement between SET and the Swedish University of Boras**

The cooperation between SET and the Swedish university of Boras aims to develop scientific research and academic programs in the areas of sustainable energy and in the field of bio-energy and well as the exchange of experience in how to deploy sustainable energy technologies in the buildings. Both parties will be involved in achieving these tasks. This will include research and academic cooperation in areas of electrical power, cooling and heating from solar, wind and biomass generation such as sewage, sludge, bio-waste and agricultural and municipal waste, and in the production of biofuels from waste dates. This cooperation will lead to new research projects aimed at solving local problems in the recycling of resources, and systems to convert waste to energy (WASTE-TO-ENERGY).

- **Signing of a cooperation between the Sustainable Energy Technology Center and the Korean Agency for structural technical progress**

An agreement was signed between the two parties and aims at developing performance and identifying glitches in energy efficiency of solar cells. The prescribed period for this study is four years at a cost of 400 thousand Saudi Riyals funded by the Korean side. This is in addition to the huge project at a cost of four million and seven hundred thousand riyals during the three-year period, to develop an intelligent system to link electricity in the Middle East in order to localize and transfer the new technologies that have been developed in South Korea to be used in region and to satisfy electrical gaps resulting from the increased demand during the energy peaks of the different countries of this region.

- **Strengthening technical cooperation between the Center and the Schneider Electric company**

The Center received a group of representatives from Schneider Electric company, and discussed aspects of possible technical cooperation between the center and the company in the field of renewable energy. A group of researchers and specialists in the Center made presentations about ongoing research projects in the center, which have gotten the attention of representatives of Schneider Electric, who expressed their willingness to participate in such projects at an advanced level.



- **Signing of a cooperation agreement between the Center and the European Academy of energy**

A high-level delegation from the Academy of European energy from the Netherlands, headed by its academic director Prof. Andrea Vaaj, visited the Center on January 19, 2016. The delegation expressed interest of the academy and its keenness to cooperate with the Center in all technical and academic aspects related to the development of sustainable energy technologies in the Kingdom of Saudi Arabia. It was agreed, during the visit, on all the details of potential cooperation between the Center and the academy.

- **First joint workshop between the Institute of Nanotechnology and SET**

The Center and King Abdullah Institute for Nanotechnology held on January 12, 2016, their first joint workshop. The workshop aimed at discussing joint cooperation and discussion of research developments in the energy and water fields, and learning about the latest research reached by SET and the Institute of Nanotechnology, as well as to discuss ways of joint cooperation between the center and the institute in the relevant scientific topics. The workshop reviewed

areas of work for both the center and the Institute, and discussed an agreement to form a joint working team in areas that require cooperation and scientific research, as was presented adequately by the Director of the Center and Dean of the institute. The findings of the workshop included several resolutions, notably the activation of areas of cooperation through joint research, the establishment of specialized development labs, the translation of research results into products of added economical values, the cooperation with other institutes and specialized centers at the University through the formation of joint research teams.

A research team wins the Emirates Energy Award

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 organized in Dubai a ceremony to honour the winners of the Emirates Energy Award in 2015 in the Armani Hotel Dubai. The second edition of the Award was held this year under the slogan «For a sustainable future», focusing on the most important innovations in the field of energy. The edition saw a wide participation of groups of creative and talented bodies, institutions and leading individuals at the national and regional level .

A total of 112 works have entered the competition. The College team led by Professor Dr. Saeed Bin Mohammed Al-Zahrani and student Ahmed Hafez won the award for research and development in the field of design and implementation of a mobile desalination plant using membrane distillation based on solar energy, through an integrated system that was designed and run in the College.



Structural Engineering Professors Granted a New Patent

Researchers at King Saud University have developed an apparatus for assessing durability of stressed FRP bars which has been recognized internationally through the grant of US patent (US9341553B2, 17 May 2016). Professors Yousef Al-Salloum, Tarek Almusallam, Saleh Alsayed and Husain Abbas from the Department of Civil Engineering, through extensive research and studies have developed an apparatus that can be used for assessing the durability of FRP bars that are used for reinforcing concrete. It is often required to study the effect of environmental exposure of FRP bars under stressed state while embedded in

concrete. This requires investigating the behavior of structural elements reinforced with FRP bars which involves excessive materials and labor even for scaled model testing. Further the transportation of such specimens for desired environmental exposure is also difficult. The present invention provides solution to the problem by developing a new apparatus for preparing representative small size specimen for testing FRP bars embedded in concrete under stressed state during environmental exposure. The desired stress level in FRP bars can be easily maintained during the period of investigation. The dimensions of the test specimens and apparatus are small enough for convenience in portability required for the desired environmental exposure conditions. The inventors are also members of MMB Chair for Research and Studies in Strengthening and Rehabilitation of Structures which is affiliated to Specialty Units for Safety and Preservation of Structures, Department of Civil Engineering.

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