

RESEARCH CONNECT
@DUBAI
NEWSLETTER



Contents

- 3** Editorial
- 4** Together in Research
- 5** Mission and Objectives
- 6** RSC Editorial Board
- 7** RSC Members
- 8** Sustainability in the UAE
- 13** Industry News
- 22** Knowledge-Based Economy
- 34** Events
- 39** Highlights of Students and Staff Achievements

Editorial RSC Newsletter

Welcome to the first issue of this research newsletter. As the UAE transforms towards a knowledge-based economy, research and development, along with a supporting infrastructure will play a key role. Expo2020 is one of the milestones of this transformation which touches all aspects of our society including technology, innovation and human development, in a manner that shows our responsive role to cater for a sustainable future, whilst capitalizing on the opportunities underpinned by the UAE's socio-economic growth.

'Research Connect @ Dubai' highlights original research, and the application of original research, in a wide range of academic institutions and industries in Dubai. We do this in order to support the UAE's growth towards Expo2020, and beyond. The theme of the first newsletter is Sustainability. In this issue you will find initiatives in both government and private sectors. The articles presented here are not exhaustive but show that sustainability is a core research and development theme in Dubai. You will find details of work across a wide range of subjects and topics, from engineering, to corporate social responsibility, to business leadership.

Sustainability touches all aspects of human lives and hence becomes everyone's responsibility. Technological innovations and government legislations will have a limited effect unless we all, as members of this global society, began to think and transform our ways of life towards sustainability. Schools and higher education institutions can and should play a vital role in driving positive societal change, starting at the grass-roots level, and extending into advanced technologies. This synergy between society, technology and government legislations will ensure that we progress in a responsible manner to create a sustainable future.



Chief Editor
Dr. Rehan Ahmed
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Together in Research

Dubai is witnessing a great moment in higher education and research. International branch campuses are coming together to build a community that will enhance research and collaboration with industry, and contribute to the goals of Expo2020. Research Connect @Dubai is an innovative model to create and showcase research opportunities across Dubai's campuses, ultimately leading to a stronger and more diversified economy.

When we consider the Expo2020 motto of 'Connecting Minds, Creating the Future,' it becomes clear its heart lies in education; in collaboration and in innovation. Reflecting these, Research Connect @Dubai will convene the public and private sectors to conduct research that will lead to greater innovative practices for the benefit of Dubai and its people.

Dr. Warren Fox
Chief of Higher Education
Knowledge and Human Development Authority

Research Steering Committee (RSC)

Mission

To promote the advancement of research and innovation that serves Dubai and the UAE community at large.

Objectives

1. Provide a platform to:
 - a. share information and experiences that encourage research and innovation
 - b. forge mutually beneficial partnerships in research and innovation through collaboration of skills, knowledge and resources
2. promote Dubai as a centre of excellence for the advancement of research and innovation
3. facilitate collaboration with industry, government, and other stakeholders to promote multi-disciplinary research
4. seek out opportunities for global engagement in research and development.

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Sustainability in the UAE

The Role of Research and Innovation

Dr. Kirk Shanks, Dr. Rehan Ahmed, Dr. Hassam Chaudhry,
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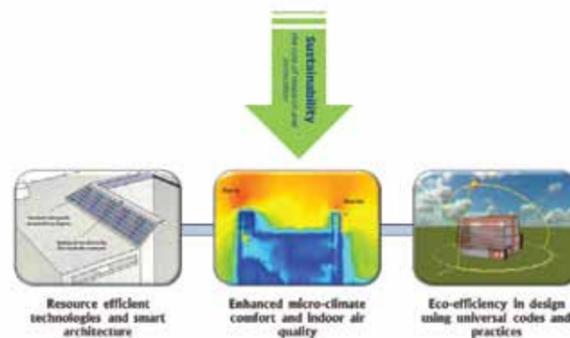


Dr. Kirk Shanks (left), Dr. Rehan Ahmed (centre),
Dr. Hassam Chaudhry (right)

Sustainability is a complex concept that can be viewed from many different perspectives and one that varies between different situations. The complexity of the idea of sustainability has led to many different definitions. However, the most common definition is that the sustainability of development, such as a human activity, process or product, is one that is done in a way that it “meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987). When aiming for this, it is necessary to take into consideration the positive and negative impacts on not only the natural environment but also on economic objectives and features of the society, the activity is taking place within. With these three dimensions of consideration, achieving sustainability is

about reaching a balance of benefits and impacts on environment, society and economic conditions. Pursuing sustainability is now the main organising driver behind many activities in most societies, economies and industries across the world. This is mainly due to there being the shared problem across the globe, of climate change and finding ways to adapt to changes in local climates and prepare for more future dramatic climate changes whilst also reducing the amount of greenhouse gases (GHG) we emit, in fuelling our activities; that are partly causing climate change.

Sustainability, GHG and the world we live in, are all interconnected and the consequences of global warming have no boundaries. Every nation therefore has to play its part in a responsible way for a sustainable future. To this end, the UAE continues its proactive drive towards sustainable growth.



As doing something sustainably involves considering and addressing issues and characteristics of such large scale concepts as the environment, society and economy; it can be seen that knowledge is needed of not only the detailed characteristics of all of these, but also of how these change over time and how they interact and affect each other. For example, whilst generating energy from renewable sources such as the solar cells powered by the sun, the result is much reduced GHG emissions and therefore less of a negative impact on the environment. However, the energy generated is only available when the sun is out. This means it then becomes necessary to find ways to store this electricity for times when the sun is not out, which requires an additional technology or system which, in turn, adds more expense and raises the issue of financial viability. Then, there is the question of the availability of “enabling technologies” which can be perceived as “game changers”. For instance, due to the technological advancements, the computing power available per dollar has increased approximately by a factor of 10 roughly every four years in the last quarter of the century. Although, such order of magnitude advancements in solar cell technology have not yet been achieved, in future other enabling technologies along with solar will also play an important role in the sustainable energy mix.

Enabling technologies like these have the capacity to change the landscape of the way we produce energy in a sustainable manner. Just the availability of technologies doesn't make us sustainable, as the issue of financial viability will have different limits for different consumers in the society. Like all human activities, the further complication is that the context or situation of each issue also changes over time.



The dynamics of change in situations is important as it can make overcoming a problem easier or more difficult. For example, a new solar technology may become available that increases the amount of energy that can be generated or the cost of solar technology drops making the overall cost lower; thereby improving the financial viability of renewable generation from the sun for more consumers. But this is not the only type of change that could happen in this example, as the demand for energy from a consumer rises resulting in a larger solar system being needed, which again has the knock on effect of increasing the total cost and reducing financial viability. However, as the economic situation of a consumer rises thereby the limit of financial viability also rises; the personal objectives of a consumer shifts such that they place more value on reducing their impact on the environment.

The technology, consumer and financial dimensions of the example above are only one type of perspective on sustainability. Another type of perspective on which sustainability can be viewed is one that although is less amenable to quantifying in a technical way is significantly important – these are perspectives that account for socio-cultural and socio-economic dynamics

of growth. Take for example the Burj Khalifa, which is not known for its energy performance but has had a fundamental role to play in the growth of the Dubai economy, society and culture. As an iconic building it has been a beacon for attracting wealth generation and through this the spreading of wealth to people that would otherwise not necessarily have that opportunity. So from an economic and cultural perspective on sustainable development, it has had a very positive role to play not only in the UAE, but the effects of spreading wealth have touched most corners of the region and further afield.

In the UAE we have quite a unique situation where growth in all spheres of human activity have and continue to successfully expand rapidly. Growth of a society and its economy brings new issues to address in terms of pursuing sustainable development and ones which, again, change over time. In this context of growth, creating new problems to solve and issues to address, as well as adaptation to change in societal, cultural, economic and environmental situations is a key strategy. When we consider the changes that have taken place in the UAE over the past and plans for the future, it illustrates the many interesting sustainability issues that are being tackled by government, industry and academic research organisations.

With the UAE population increasing from 3 million in 2000 to over 9.3 million in 2014, representing an increase in 14 years of over 300%, there has been major growth in the building stock, growth in GDP and a related rise in energy demand and GHG emissions. This type of growth also has wider implications of increasing the individual wealth of the population, where GDP/per person is in

the top 10 highest countries in the world. This in turn is a strong benefit for the improved lives of the population including improved financial mobility of consumers of high technology that enhance their daily lives, but which also increases overall total energy demand and GHG emissions. From a socio-cultural perspective, increased financial mobility and dynamics of a vibrant modern society and economy also has an impact on expectations such as the expectation of thermal conditions within buildings which, again, in turn leads to increasing demands for energy and the resultant rise in GHG emissions.

The challenge, which is the same for all modern economies, is how to reduce energy demand and GHG emissions whilst also maintaining societal, cultural and economic benefits. Much is being done to pursue this, and this is most noticeable in the energy generation and buildings (private and commercial) sectors. Public awareness is therefore critical in ensuring that we also use available energy and natural resources in a sustainable manner. A number of initiatives aimed at recycling products and natural resources such as water are therefore critical for a sustainable future. Some of these initiatives may have a long payback period but are very important in terms of public awareness. For example, Solar Impulse 2 project which aimed at First Round-The-World Solar Flight in 2015 began its historic adventure in Abu Dhabi. Although such technology may not be economically viable in near future for air travel, it brings focus to think about sustainability in our daily lives. Energy is probably the most important factor in sustainable development for the next two decades. However, natural resources such as water

will play a much vital role in the longer future. For example, a recent report published by the World Resources Institute puts Mideast high in the ranking of World's most water stressed countries in 2040.



Here in the UAE, key areas to target in the pursuit of the sustainability ideal for development have been identified and work continues at all levels of government, industry and academia to both implement changes in 1) the way things are done and 2) to better understand the dynamics of change so as to stimulate creation of ideas for reducing energy demand and GHG emissions whilst maintaining growth in benefits for the overall economy and society. Take for example, electricity generation which is the main energy source that drives operation of our buildings and thereby maintains the conditions needed within which to conduct modern business, commerce and daily living. The mix of energy sources for electricity generation are continuously being diversified in a determined shift from relying on heavy GHG emitting fossil fuels to renewable sources, such that there will be a seven fold growth in the

amount of total energy generated from renewables by 2020. With no change in the total national amount of energy demand this will reduce GHG emissions per person significantly. Similar to this are a wide range of initiatives already underway to make our buildings and how we use these buildings more sustainable such as Dubai Municipalities Green Building Regulations 2010; Abu Dhabi Urban Planning Councils Pearl Rating system; DEWA's exemplary low energy sustainable buildings; Emirates Green Building Councils building retrofit guidelines; Dubai Silicon Oasis Authority's innovation initiative for development of Smart City solutions; studies on smart materials at Masdar Institute; work on understanding and influencing energy use behaviour and innovations in building integrated power generation and passive cooling technologies at Heriot-Watt University Dubai. The list continues with other initiatives and work across the spectrum of government, industry and academic organisations. These all show a vibrant and widespread effort to adapt sustainably to the demands of a rapidly growing economy and society in a challenging climate.

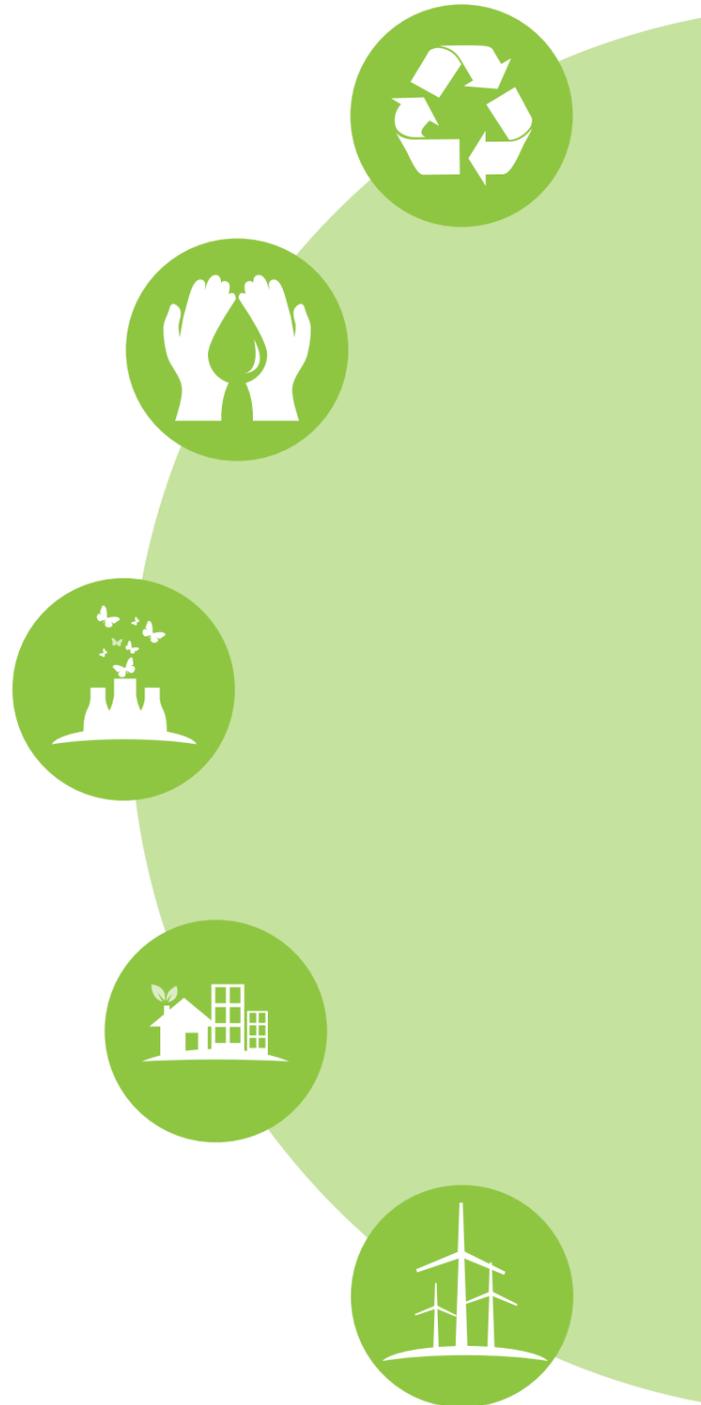


Needless to say, all these initiatives and work are both new and unique to the region and as such will continue to be fuelled by research and innovation. This research and innovation has international value as it is not only relevant to the particular social, cultural, economic and environmental situation of the UAE, but also those of societies and economies across the region and further afield that aim for similar sustainable growth goals. The ongoing dynamic expansion of the higher education and research sector in the UAE is one of the most valuable resources that underpins growth in the knowledge and innovation that help steer national development on a sustainable path. As the UAE prepares to host the much anticipated world Expo 2020 event, it takes us to an exciting time for the country to showcase its rapid transformation into one of the most sustainable economies in the world. With a target to generate 50% of the energy requirements from renewable sources on-site, the Expo 2020 event will showcase the first large-scale application of sustainable technologies for the built environment, thus setting a new benchmark for future mega-events.

In conclusion, as UAE continues to develop globally, it will be the research and development, and public awareness coupled with the government and industry initiatives that will drive further growth sustainably.

References

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INDUSTRY NEWS

Sustainability Approach at DUBAL Aluminium Manufacturing facility in Dubai

Dr. Rehan Ahmed and Dr. Mutasim Nour, Heriot-Watt University Dubai, P.O. Box 294345, Dubai, UAE



Dr. Rehan Ahmed (left) and Dr. Mutasim Nour (right)

“Manufacturing and the knowledge-based and innovative industrial sector currently account for around 11 per cent of total UAE GDP [Gross Domestic Product], with the aim of growing this to 20 per cent in 2020, and 25 per cent in 2025,”

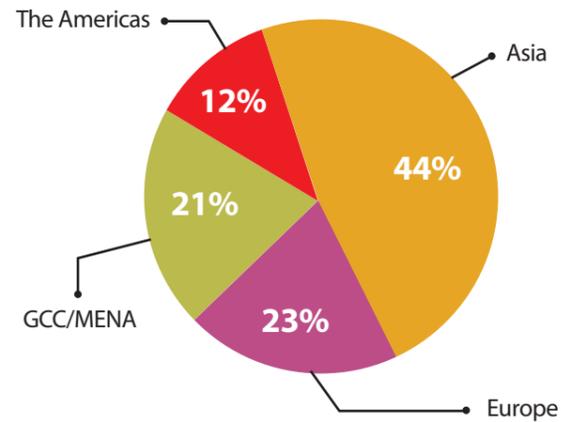
said Al Mansouri while speaking at an event to announce the details of Global Manufacturing and Industrialisation Summit in Abu Dhabi on Tuesday (SOURCE Gulf News, Published: 17:08 June 2, 2015)

The UAE has long been implementing policies to diversify its economy in non-oil based sectors in a sustainable manner. Dubai Aluminium (“DUBAL”) – an operating asset of Emirates Global Aluminium (“EGA”) – has been instrumental in developing and

implementing sustainable manufacturing technologies since its inception in 1979. Currently, EGA has a total production capacity of over 2.4 million tonnes of aluminum per year, which equates to close on 5% of production worldwide. EGA successfully fulfils term-supply contracts for primary aluminium to over 350 customers in about 68 countries around the world. EGA's key markets are Asia, the Middle East and North Africa region, Europe and The Americas.



DUBAL Aluminium Manufacturing facility in Dubai



EGA's key markets

The production of aluminum is an energy-intensive process, with toxic by-products that need to be controlled carefully. The authors of this article conducted an interview with **Tayeb M M H Al Awadhi, Vice President (Power & Desalination), UAE Operations, who is based at Dubai Aluminium PJSC ("DUBAL")**, with a view to understanding how EGA ensures that sustainability is part of the operations' DNA.

Al Awadhi indicated that sustainable technological developments have been achieved **"By continuous improvements of existing operations, and the development and implementation of optimised smelting technologies (e.g. D18+, DX, DX+), the energy required to produce aluminum has been optimised at DUBAL from 15 kWh/kg Al to 13 kWh/kg Al. This resulted in about 26mcsfd gas savings from 2010 till 2015."**



Tayeb M M H Al Awadhi, Vice President (Power & Desalination), UAE Operations, Dubai Aluminium PJSC ("DUBAL")

These improvements have certainly reduced the carbon footprint and increased plant efficiency. EGA also deliberately reduces the toxic waste components. Fluoride waste is an environmentally toxic by-product of aluminium production that also poses human health hazards. Al Awadhi indicated that DUBAL minimises this by-product by implementing measures to contain emissions and thereby protect the environment.

"Controlling emissions during operation of the Reduction cells and by lowering energy consumption in new generation technologies reduces toxic waste. Monitoring equipment is in place to monitor the amount of fluoride released to the environment and ensure this is at acceptable levels. Total fluoride emissions from the DUBAL plant have been reduced by >30% in the past 10 years. GHG emissions from the plant have been reduced by > 13% in the past 10 years,"

Al Awadhi said.

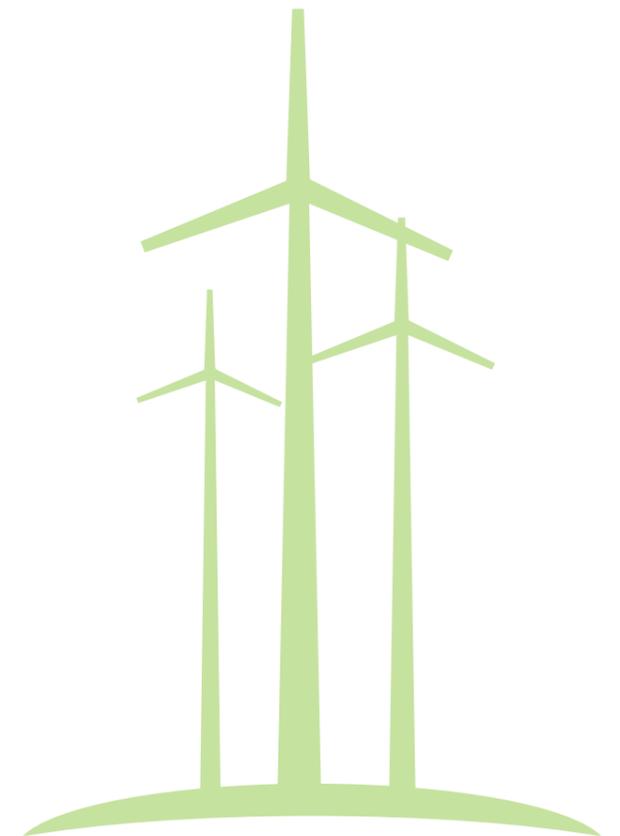
Recycling is becoming an important part of UAE's future strategy. Aluminium recycling also makes smelting a more efficient process and reduces carbon dioxide emissions. This is achieved by improving the quality of products, while reducing scrap and recycled material as part of process optimization. Al Awadhi added: **"Recycling initiatives have helped increase people's contribution to and awareness of protecting the environment. Moreover, spent pot lining – a hazardous waste material from the UAE's aluminium smelting sector – is being supplied to a few UAE industries to reduce the latter's fossil fuel requirements."**

According to WWF Living Planet Report 2012, in the Ecological Footprint Index, the UAE has the third largest carbon emissions footprint per capita in the world (behind Qatar and Kuwait). So the authors asked how the UAE population could be educated to reduce the nation's carbon footprint. They also asked whether future graduates would have the skills to develop environmentally ethical structures? Al Awadhi responded by saying:

"The introduction of energy-saving and environmental protection awareness programmes will reduce energy demand. Educating people can include participation in international and local events and conferences, support for the UAE Vision 2021 and so on. At DUBAL, for example, about 400 power station employees have planted over 800 trees on our smelter site as part of Earth Hour initiatives. This process is being expanded throughout the plant. Future graduates would gain knowledge through internship sessions and summer training at DUBAL's facilities."

He added that energy-efficiency will be the main driver for many future efficiency projects. **"In my opinion, the future energy sector will be more active and focus heavily on renewable technologies – such as solar and wind. This will help the environment and diversify resource usage."**

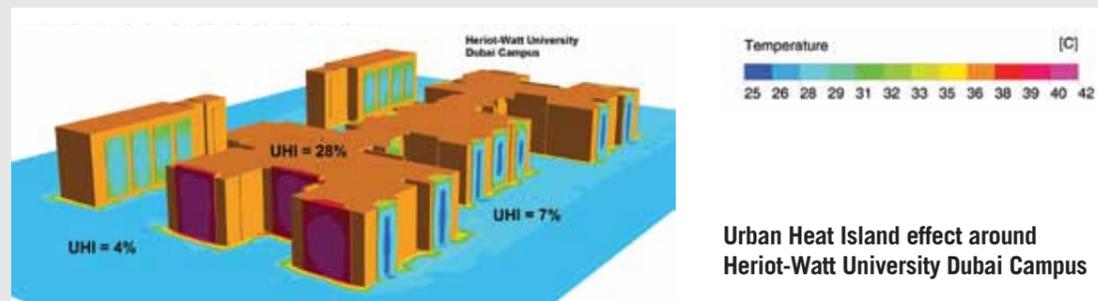
Government, through the authority of the Ministry of Energy, can focus on encouraging the private industrial sector to adopt sustainability and efficiency improvements, Al Awadhi concluded.



Hot and Getting Hotter: Urban Heat Islands in Dubai

Dr. Hassam Chaudhry and Ms. Syeda Firdaus, School of Energy, Geoscience, Infrastructure and Society, Heriot-Watt University Dubai, P.O. Box 294345, Dubai, UAE

In a dynamic environment such as Dubai, the urban landscape can have a significant impact on the local microclimate. Rapid growth and development over the past years in the city has increased the rate at which the urban temperatures are rising. Progressive soaring temperatures significantly influence the formation Urban Heat Islands (UHI) which adds on to the high cooling demands, subsequently leading to large electricity bills in the residential sector. An in-depth study into investigating the local heat island effect at Heriot-Watt University's Dubai Campus was conducted by Dr. Hassam Chaudhry and his student Ms. Syeda Firdaus as part of the undergraduate Architectural Engineering programme. The work analysed the thermal and aerodynamic flow behaviour around the modelled case-study by using computational fluid dynamics and far-field testing. Our findings have indicated that specific locations around the campus experienced a 9% increase in the ambient temperature on average corresponding to a rise of approximately 3°C. The maximum increase however was recorded at over 10°C rise in local temperatures. The formation of heat islands points towards the sensible cooling load escalating by 20% from 986W to 1,227W, thus causing an adverse effect on the electricity demand. This study provides a broad scope for further research by assessing the UHI phenomenon and providing mitigating solutions in the context of climate change.



Air Conditioning System with Ground Source Heat Exchanger

Dr. S.V. Kota Reddy, Manipal University Dubai, Dubai, UAE

The weather of the United Arab Emirates region poses a considerable challenge in terms of the extreme summers where the average ambient temperature exceeds 45°C. The extreme summers result in greater power consumption of the air conditioning systems widely used in the region. The continual increase in energy demand and greenhouse gas emissions decree for efficient use of renewable energy resources. Thus, there is a growing necessity to improve the geothermal techniques in order to cut-down on power consumption for refrigeration and air conditioning applications. The Vertical Looping Method was employed in the implementation of direct exchange ground source heat exchanger. This research presents the experimental results on the performance of the system with medium as still air, water and sand. The experimental results show that the highest coefficient of performance of 3.72 was achieved when the bore hole is filled with water. This work was published in IOSR Journal of Mechanical and Civil Engineering (e-ISSN: 2278-1684, p-ISSN: 2320-334X, Volume 12, Issue 1 Ver. IV (Jan- Feb. 2015), PP 20-24).



Investigation of Energy Savings Potential for a University in Dubai

Parth Anant Berde and Dr. R. Gomathi Bhavani, BITS Pilani Dubai Campus, P.O. Box 345055, Dubai, UAE

UAE and Dubai, in particular, are demonstrating extraordinary leadership in promoting energy saving measures in systems and technologies. Energy saving in buildings is given paramount importance today because it not only saves money but also helps protect the natural resources for a sustainable future. Intelligently planned Buildings Management System (BMS) play a vital role in creating comfortable interiors for the occupants of the building with minimum energy consumption. The research project done at BITS Pilani Dubai Campus, by Parth Anant Berde and R. Gomathi Bhavani aimed to highlight the advantages of BMS and its energy saving potential for a university campus, at Dubai, UAE. BMS employs automation in switching off lights and controlling Heating, Ventilation and Air Conditioning (HVAC) at unoccupied areas of the building. Initial costs and payback period have also been calculated. The study concluded that the saving potential of BMS in HVAC is 15%. This work has been published in the International Conference on National Capacity Building Strategy for Sustainable Development and Poverty Alleviation held at Dubai, UAE on May 26-28, 2015.



Solar Waste Compactor (SWC) for Smart Cities

Dr. Mehdi Nazarinia, Heriot-Watt University Dubai, P.O. Box 294345, Dubai, UAE

The UAE took the lead in organising collection of recyclable materials in the early 1990s. Trucks with an average capacity of 10 tons are used to collect these recyclable/waste materials and transport them to the municipal collection areas, using 17,500 trips/year; the equivalent of half a million tons of CO₂. Collecting recyclable/waste materials using trucks is costly and time consuming, especially at remote locations and high traffic areas. Compaction of waste on-site will result in cost saving as the collection frequency is reduced, which reflects on reducing emissions and the carbon footprint of collection trucks. The idea of SWC provides a practical and low cost method for compacting recyclable/waste materials using clean photovoltaic energy. SWC can also save money by reducing collection frequency and thus truck travel time, which is considered as an important factor.



As a result Dr. Mehdi Nazarinia, Assistant Professor in mechanical engineering at Heriot-Watt University Dubai Campus, initiated this green and sustainable project and his MSc Energy project student, Mr Fady Suwan thus designed, manufactured and successfully tested the first solar waste compactor prototype for soda aluminium cans in the region. There is a great potential to expand this project which ultimately can be used with the waste management departments of UAE government such as DEWA to enhance energy efficiency and sustainability aspects of smart cities, which is indeed one of the major themes of Dubai EXPO 2020.

Corporate Social Responsibility in UAE Organisations

Meera Al-Reyaysa, PhD student in Project Management, The British University in Dubai, Dubai, UAE

Corporate Social Responsibility (CSR) and sustainability are increasingly influential business concepts throughout the world. CSR has evolved over the last two decades and is believed to be at a more developed stage in Western countries. In contrast, CSR in the GCC and MENA countries is generally thought to have not reached the same level of development. A team of researchers based at the British University in Dubai (BUiD), working with Professor Ashly Pinnington (Dean of Research) in collaboration with academics from the University of Strathclyde Abu Dhabi and the University of Southampton UK, is studying medium and long-term developments in CSR in the UAE. This study aims to identify and understand different levels of awareness and implementation of CSR in organisations. The team is using qualitative methods of data collection mainly interviews and case studies. Interviews of managers with CSR/sustainability responsibilities in the last two years have found that a number of large government, semi-government and private sector organisations have advanced well beyond the elementary stages of CSR. Analysis of the data found that a group of large organisations with strong reputation in CSR and sustainability reveal evidence of innovative, integrated and transforming approaches. Findings are to be presented at two international conferences later this year, including the 2015 Corporate Responsibility Research Conference (CRR) at KEDGE Business School, Marseille, France; and the International Conference on Organisation and Management (ICOM) 2015, organized by Abu Dhabi University and the Asia Academy of Management, in the UAE.



Parents as Play Partners, Developing Childhood Learning the Key to a Sustainable Future

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Building a sustainable society requires people with a capacity for sustainable development and the capability for lifelong learning and development. This quest for sustainable education development has to begin with learning and development in early childhood. Parents are the most important people in a child's life. Through parental engagement (Hattie 2008) they can support and advance their child's learning and development through everyday activities and providing opportunities for creative play. Charles Deforges (2003) concluded that the more parents and children talk to each other about meaningful subjects, the better students achieve both in the short and long term. This research explored the meaning of childhood within the realms of play and attachment, drawing upon the work of key theorists including, Bowlby, Athey and Brown. Play in childhood was examined as to why it is such a powerful medium to foster communication and confidence, which are essential elements for pre-school children. Questions asked included; Do children still play? What do they play with? Do parents play with their children? How does technology infiltrate play? What if play is missing in childhood? A pilot study entitled 'Parents as Play Partners', was conducted within the UAE, the objective was to highlight how natural schema based play can positively impact attachment and children's learning and development. Families were filmed before and after the play intervention and play diaries maintained. The results could prove useful to governments and providers of early year's education, as well as parents and practitioners in this field. This research was conducted within the UAE by Dr. Kay Sanderson, Coordinator of Education at Middlesex University Dubai in collaboration with Middlesex University London and was presented at the GCES Conference at the same venue in April 2015.



Town Square for the Sustainable United Arab Emirates City

Issam Ezzeddine, PhD Student, Heriot-Watt University Dubai, P.O. Box 294345, Dubai, UAE

The most internationally accepted definition of sustainable development is people- centred: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1997). The UK government puts it even more simply: "Sustainable development is about ensuring a better quality of life for everyone, now and for generations to come" (DETR, 1988d). The term 'community' has the conventional meanings of 'neighbours' or 'people of a district'. Town Square in the developed sustainable urban strategies is a unique part of the urban setting for many cities worldwide. This research concludes that the UAE cities strive for more liveable public open space such as urban square, despite the significant growth of communities and cities during the last two decades. In addition, substantial improvements to the planning and urban design procedures are required as guidance to community architects and urban planners. Furthermore, this research provides a show-case of how a town square could be introduced into the city when policies are formulated for bringing quality liveable space to the UAE's sustainable cities and communities. As part of the ongoing PhD research project at Heriot-Watt University, this research examines the effectiveness of developing sustainable public squares in the UAE cities, and formulating policies for bringing quality liveable space to cities.



The Old community Square of UAE city

Safety Engineering System in Oil Construction

Ghanim Kashwani, PhD Student, Heriot-Watt University Dubai, P.O. Box 294345, Dubai, UAE

According to LEED (Leadership in Energy & Environmental Design), sustainability is the improvement of human life in relation to the optimal use of natural resources. Saving human life from the daily risks that an individual maybe exposed to in the work environment is an essential element to enforce the sustainability concept in all of its aspects; economic, environmental and social. Lessons have been learned from the historical catastrophes such as Alexander L. Kielland capsized (North Sea, 1980), Piper Alpha Explosion (North Sea, 1988) and Deepwater Horizon Blow Out (Gulf of Mexico, 2010). The loss of human life, environmental damages and financial loss of these catastrophes led the oil construction professionals to continuously improve system safety. Technical, procedural, and behavioural safety studies have been conducted but, there is still a lack of integrated framework that includes these three areas and embraces the involvement of management and operation in the same time. My PhD research project involves developing integrated framework that will help change the approach from reactive to proactive, and give a holistic view of the safety and sustainability challenges in the oil construction industry in the UAE.



COCO2 Tendering will help UAE to achieve sustainability goals

Mohammed Azharuddin, PhD Student, Heriot-Watt University Dubai, P.O. Box 294345, Dubai, UAE

Awareness of sustainable buildings and its benefits is growing in the UAE which is a healthy sign to tackle global warming, thereby safeguarding the interests of the future generations. EXPO 2020 too has a dedicated theme on sustainability, which will lead to a rapid increase in the number of sustainable buildings entering the Dubai built environment. Researchers at the School of Energy, Geoscience, Infrastructure and Society (EGIS) at Heriot Watt University, Dubai are working towards developing "COCO2 Tendering" which is a framework to recommend and modify the existing procurement practices (tendering process) to be based on carbon footprint of the building. This will be in addition to cost, time and quality requirements. These tools and framework will assist the decision makers to quantify the strategies in the building sector to inform policy developers, regarding carbon emissions at the unit, project, city and building sector levels. In future, building approvals and construction can be sustainably regulated based on CO2 emission levels. Dr. Assem Al Hajj who is supervising the project at Heriot Watt University, Dubai says "COCO2 Tendering is a holistic approach to sustainability and is the need of the hour" and recommends the industry to "adapt the carbon based evaluation of bids".



Green Buildings & Accountability

Dr. Mehdi Nazarinia, School of Engineering and Physical Sciences, Heriot-Watt University Dubai, P.O. Box 294345, Dubai, UAE

As the effects of global warming keep increasing due to increasing concentrations of CO2 in the earth's atmosphere, there is a growing effort towards energy saving measures and in particular for the building industry, towards low-carbon buildings. One of the main detractors towards achieving energy efficiency goals in buildings is the underperformance of the building envelopes. Dr. Mehdi Nazarinia, Assistant Professor at Heriot-Watt University, in collaboration with Mr. William Whistler, Managing Director of Green Building Solutions International is working on various sustainable research projects covering different aspects of green buildings and accountability through postgraduate student projects.



One project that he with his team has been working on is measuring effective U-value of wall assemblies for eco-friendly paint coatings as well as in-situ U-value measurements for different wall assemblies. The team is also experimentally investigating the impact of different materials, such as insulated concrete forms on building envelope performance in Dubai. Ms. Sobia Shahid, a postgraduate student of the group, was selected as the winner of EGBC Paper competition, which was presented at the EGBC's 2nd Annual Congress in December 2013. The projects of two other students, Ms. Kalsoom Shahid and Mr Munis Abdul Hameed, were both short-listed as a finalist for the Green Building Research of the Year Award Category and for the Dr. Sadek Owainati Special Student Award, respectively, in 2015.

Investigating Candidate Crops for Cultivation in the UAE

Dr. Neeru Sood, Kiran Menon, and S. Rajeshwari, BITS Pilani Dubai Campus, Dubai, UAE
Nanduri K. Rao, International centre for Biosaline Agriculture, Dubai, UAE

The Department of Biotechnology at BITS Pilani Dubai Campus currently has a number of projects with objectives pertinent to sustainability in agriculture. In collaboration with the International Centre for Biosaline Agriculture, Dubai, oilseed crops such as *Ricinus communis*, *Citrullus colocynthis* and *Brassica juncea* are under study for potential cultivation in the region. The response of these crops to salinity and irrigation with treated wastewater (TWW) is being analysed. More than 100% increase in yield has been observed in Mustard upon irrigation with TWW, highlighting the benefits of utilizing wastewater for irrigation.



Citrullus colocynthis

Another project involves the physiological and genetic basis of response to salinity in cereal crops. There is an expanding market for rice/wheat alternatives due to recent awareness about their health benefits and nutritional value. In this project 112 accessions of Barley and various Millets have been screened for salinity tolerance. Understanding the molecular basis of salt tolerance could help improve tolerance to other stresses like drought and extreme temperatures.



Mustard (*Brassica juncea*)

Environment Management and Sustainability in UAE Aluminium Industry

Abeer Sajwani, PhD Student, Heriot-Watt University Dubai, P.O. Box 294345, Dubai, UAE

Aluminium is the third most abundant element after oxygen and silicon, and the most abundant metal in earth's crust. It is widely used in buildings, construction, transport, packaging and general engineering due to its unique characteristics such as corrosion resistance, durability, structural strength and low-weight. Aluminium manufacturing is an energy intensive industry and a contributor to greenhouse gases such as CO2 and CFC, and PFC. This industry generates waste such as the Bauxite residue from the alumina refinery process and the Spent Pot-Lining (SPL) from the smelting process. These complex environmental challenges increase the role of environmental management and sustainability in the aluminum manufacturing industry. According to the World Aluminium annual statistical report in 2014, UAE is the fourth largest aluminum producer, accounting for over 50% of the Arabian Gulf's aluminum production. The aluminum industry uses recycling and secondary aluminum in its production. The focus of this PhD research project is to explore the ways to reduce aluminum environmental footprint by studying the life-cycle of aluminum and the current environmental management practices in the UAE. This will help in formulating an efficient environmental management framework for sustainable metal production.



Knowledge-Based Economy

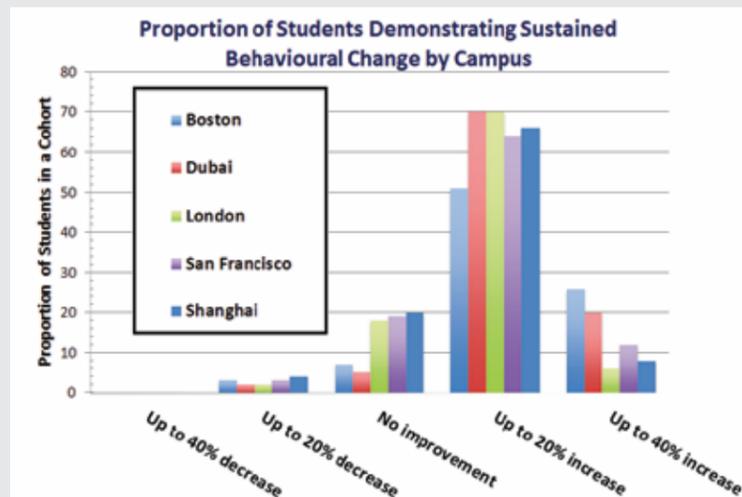
What do Hiring Managers want in Business School Graduates? A Global Study conducted by Hult Labs

Dhanujha Gandhi, Hult International Business School, Dubai Internet City, Dubai, P.O. Box 502988, U.A.E



The MBA degree should prepare graduates for taking leading roles in the world's major organisations. However in 2014, a study by Hult Labs of Hult International Business School found that top employers globally saw major gaps between the skills they found in graduates, and what they actually needed. The survey included employers and CEOs from the US, Europe and the Middle East, including Dubai.

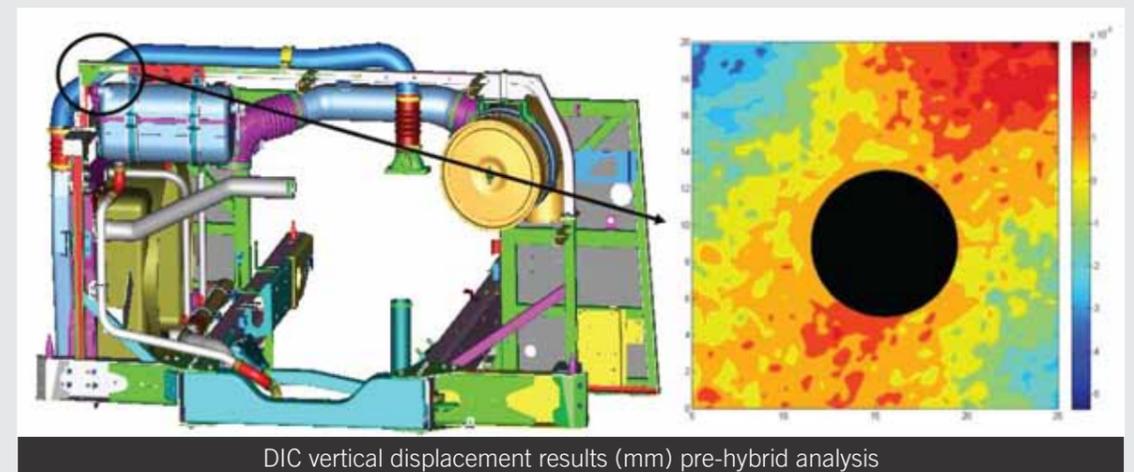
The original plan was to interview 200 executives, but researchers found that interviewees kept giving the same answers. "We were just hearing the same thing again and again. There was really no point in continuing the research further," says Hult President Stephen Hodges. Respondents said students lack self-awareness, can't work in teams, have poor critical thinking skills and come up short on creativity. Many hirers also stressed that MBA graduates often do not do well when situations are ambiguous, with no clear success criteria or existing protocol to follow. As a result, Hult International Business School revised its MBA programme in order to add significant opportunities for students to develop their leadership and interpersonal skills. Results show that 90% of Dubai graduates were able to demonstrate a sustained improvement in leadership skills across the year, as evaluated by peer and professor feedback.



Vehicle Cooling Structure Stress Analysis using Digital Image Correlation

Dr. Wael Abdel-Samad, RIT Dubai, P.O. Box 341055, Dubai, UAE

Dr. Wael Abdel-Samad's latest research project was on a perforated asymmetrical cooling vehicle structure utilising digital image correlation. The major advantage of this work was the ability to achieve full-field stress information when only a single component of displacement was physically measured. He recently presented the findings from this research project at the Society of Experimental Mechanics' annual conference in June 2015 in Costa Mesa, CA, where he also served as a chair of the Infrared Imaging technical session. Further details on this research project can be found in the book: *Advancement of Optical Methods in Experimental Mechanics, Volume 3, 2015* by Springer. Abdel-Samad and his collaborators are currently working on applying similar concepts of hybrid mechanics to unsymmetrically loaded mechanical fasteners in an effort to achieve a full-field separation of thermoelastic stresses at the complex contact region. More recently, and along with other colleagues from RIT – Dubai, Abdel-Samad was awarded a grant from Emirates Global Aluminum, UAE to apply his work on nondestructive testing and evaluation to monitor corrosion levels in aluminum casting facilities; corrosion being a typical problem in such environments as a result of the continuous swing in the cooling water chemistry.



Sulforaphane Reverses The Expression Of Various Tumour Suppressor Genes In Human Cervical Cancer Cells

Arif Hussain, Khan MA, Sundaram MK, Quraishi U, Hamza A, Gunasekera D, Ramesh L, Goala P, AL Alami U, Ansari MZ, Rizvi TA and Sharma C, Manipal University Dubai, Dubai, UAE

Sulforaphane (SFN) is known to treat cancer, however, its molecular mechanisms are unclear. The present study investigates the role of SFN in modifying epigenetic events in human cervical cancer cells, using HeLa cell lines. HeLa cells were treated with SFN ($2.5\mu\text{M}$) for a period of 0, 24, 48, and 72 hours for all experiments. After treatment, expression of DNMT3B, HDAC1, RAR β , CDH1, DAPK1, and GSTP1 were studied using RT-PCR while promoter DNA methylation of tumour suppressor genes (TSGs) was studied using MS-PCR. Inhibition assays of DNA methyl transferases (DNMTs) and histone deacetylases (HDACs) were performed at varying time points.



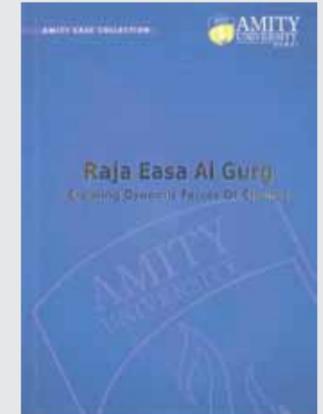
Molecular modelling and docking studies were performed to explore the possible interaction of SFN with HDAC1 and DNMT3B. Time-dependent exposure to SFN decreases the expression of DNMT3B and HDAC1 and significantly reduces the enzymatic activity of DNMTs and HDACs. Molecular modelling, data suggests that SFN may interact directly with DNMT3B and HDAC1 which may explain the inhibitory action of SFN. Interestingly, the time-dependent reactivation of the studied TSGs via reversal of methylation in SFN treated cells correlates well with its impact on the epigenetic alterations accumulated during cancer development. Thus, SFN may have significant implications for epigenetic based therapy. This work was conducted in collaboration with Zayed University, Dubai and UAE University, Al Ain. It was published in the journal Evidence-Based Complementary and Alternative Medicine (eCAM), 2015: 12.



Middle East Focused Case Centre at Amity University Dubai

Priyanka Chandanani, Amity University Dubai, DIAC, Dubai, UAE

Since its inception in 2012, the Middle East focused Case Centre at Amity University Dubai has been publishing cases with an objective to provide a rich and rewarding experience to students on management programmes, and to share the ongoing strategic developments in the Middle East. The faculty at the Case Centre, Amity University Dubai bring out a compendium of Middle East Centric Case Studies every year. This is in addition to the case studies on leaders in industry who have made significant contributions to society and the corporate sector. Two such publications have been brought out in the last two years. The first one was a set of 10 cases focusing on contemporary issues dealing with strategic intent of organisations in the Middle East, government initiatives, as well as the opportunities presented by rising Luxury Retail in the UAE. The second publication was a spotlight on Mrs. Raja Easa Al Gurg, MD of the Al Gurg Group, with a view to introducing students to transformational leadership in organisations. These cases have been well received by business schools globally - Cranfield University, University of Maryland, to name a few - as well as by reputed corporates like McKinsey & Co., USA. The next publication of the Amity Case Centre aims to focus on Expo 2020, with students across higher education institutions in the UAE participating in this initiative.



Influence of psychiatric labelling on social distancing

Dr. Anita Shrivastava, Shareen Koleth, Iman Hassen, Taleen Amawi, Middlesex University Dubai, P.O. Box 500697, Dubai, UAE

Misconceptions and negative stereotypes towards mental illness exist and consequently result in social distancing. A number of factors contribute to the desire to keep social distance, the assigned psychiatric label being one of them. Understanding how description, along with psychiatric and non-psychiatric labels influences the desire to keep distance from mentally ill might facilitate the creation of strategies to reduce the prevalent negative stigma. The present study aimed to assess the influence of psychiatric labelling and description on social distancing. 109 participants from different undergraduate programs of Middlesex University Dubai campus were randomly assigned to one of the four vignettes (Description along with label of 'troubled person', 'non diagnosed person', 'diagnosed as depression' and an 'extravert'), using between subject multi-group designs. These participants were then assessed on Social Distance Scale. Data was analysed using descriptive and One Way ANOVA. The results indicated that the labelling alone did not have significant influence on social distancing. However the description of non-diagnosed (describes psychotic behaviours) vignette influenced social distancing significantly. It can be concluded that behavioural description that is perceived as unusual seems to play a significant role along with labelling when it comes to socializing. This work was published in Gulf Medical journal. 2013;2(1):10-15.

From one Lingua Franca to Many

Dr. Mick King, Middlesex University Dubai, P.O. Box 500697, Dubai, UAE

There was a time when Greek was the lingua franca of Europe and beyond but today we refer to lingua francas; that is, languages - be they fluent, pidgin or broken - which allow us to communicate with each other in specific contexts. My thesis topic area of English medium instruction (EMI) in the UAE fits nicely to this domain. The exploratory study looked at teachers' views on EMI in the federal tertiary sector, where most programmes are offered in English despite most students scoring below the recommended English level on international proficiency exams. The open questionnaire and semi-structured interview responses indicated that the disconnect between ability to study in English and the requirements of undergraduate study meant that programme delivery was enacted by both teachers and students, thereby leading to unintended outcomes which did not align with the global goal of creating internationally-oriented graduates who were fluent in English. In addition, the need for Arabic in both the public and private sector future employment was highlighted. Key recommendations included the implementation of more Arabic in the federal tertiary sector and a rethink on the suitability of EMI as the best model for English acquisition in this particular context. A further recommendation was to encourage researchers to add the emergent body of knowledge on EMI in the Arabian Gulf.



Genetic Polymorphisms in Type 2 Diabetes Mellitus and its Interaction with Obesity Status in Emirati Population

Dr. Naushad Rais, Habiba Al-Safar, Ahmed Hassoun, Shaikha Almazrouei, Wala Kamal, Bachar Afandi, Manipal University Dubai, Dubai, UAE

Genes play an important role in the development of type 2 diabetes through the involvement of Transcription factor 7-like 2 gene (TCF7L2) and peroxisome proliferator-activated receptors- γ 2 (PPAR- γ 2). However, studies in the Arab population are inconsistent and need further investigations. We conducted a case control study to confirm the association of variants rs10885409 of TCF7L2 and Pro12Ala (rs1801282) of PPAR- γ 2 with risk of T2DM and related complications in Emirati population of Arab origin. We also investigated the interaction of these associations with obesity status. DNA was extracted from the saliva samples of 272 T2DM patients and 216 non-diabetic Emiratis. Our case-control study is the first of its kind which establishes TCF7L2 rs10885409 C allele as a T2DM risk factor in Emiratis' and this association is modulated by obesity status. We also confirmed that Pro12Ala mutation in PPAR- γ 2 is not associated with T2DM risk in this population. This work is part of a collaboration with Khalifa University, Abu Dhabi; Dubai Diabetes Centre, Dubai Health Authority, Dubai, and Diabetes Clinics, Tawam Hospital, Al-Ain, UAE. Results of work were published in the journal of Diabetes Research, in April 2015.



Work flow Solutions for Real Life Problems Using Quantitative Methods

Prof Priti Bajpai, BITS Pilani Dubai Campus, P.O. Box 345055, Dubai, UAE

The Department of Mathematics at BITS Pilani, Dubai Campus is involved in solving Queuing Theory, Transportation and Project Management Problems. In one research, Queuing Theory was used to analyse a parking lot in a busy mall in Dubai. In another project, the expansion of a furniture workshop based in Dubai was mathematically analysed and recommendations were made. In both these studies, the existing infrastructure and preparedness for Expo 2020 was checked. Work flow solutions were obtained for a toll booth at the Gurgaon (India), a clinic and a hospital using concepts of queuing theory. Recommendations on export/import strategies were made to a vendor of Dubai fruit and vegetable market based on mathematical modelling and analysis to maximize profits. Such techniques can be adapted for testing Expo 2020 infrastructure for reliability.



Innovation in Procurement from Rural India using Enterprise Mobility Strategy: A Case Study

Dr. Nilanjan Chattopadhyay and Mrinalini Shah, Manipal University Dubai, Dubai, UAE 500697, Dubai, UAE

The fundamental rule for sustenance in the business world for organisations is to explore new ways to discover themselves and to realign the business strategies with the changing environment; apply new management concepts and adopt new technologies so as to have a faster response to the changing business situation. With more than 600 million user base of mobile phones in India, it may be useful for the Indian companies to set up an enterprise mobility strategy akin to their information technology strategy and take maximum advantage of this mobile wave. This research aims to discuss these issues, and considers the methodology adapted to bring in and manage change in its process of procurement in a big organisation "Marico," one of the largest players in the Indian FMCG sector. This study emphasises how innovation models can be followed even to bring change in big corporate houses. Marico is a unique example of continuous innovation and change in procurement from rural India which revolutionised the industry and brought bigger revenue and less hassles for the company. This work was published in World Journal of Entrepreneurship, Management and Sustainable Development. Vol. 10 No. 2, 2014 pp. 143-153.



Attachment Styles, Physical, Proximity, and Relational Satisfaction: A Study of Working Professionals

Dr. Anita Shrivastava and Andrea Burianova, Middlesex University Dubai, P.O. Box 500697, Dubai, UAE

As satisfying relationships are recognised to be essential to one's mental health and overall wellbeing, the identification of its unique characteristics, coping mechanisms and distinct challenges becomes critical. Although the research on relational satisfaction and its accompanying factors still remains controversial, the present study aimed to further explore relationship patterns regarding adult attachment styles and relational proximity by including long distance romantic relationships (LDRR) in a form of 'flying crew' along with proximal (non-flying crew) romantic relationships (PRR). Data were collected by means of questionnaires from 139 professional expatriates living and working in the United Arab Emirates. Results showed a significant association between physical proximity, attachment dimensions of anxiety and avoidance and relational satisfaction as hypothesised. Additionally multiple regression confirmed the role of the avoidant dimension in comparison with that of the anxious dimension, which was found to be a significant predictor of relational satisfaction. The study contributes significantly toward addressing the role of proximity and attachment in relational satisfaction in a new context of geographic separation. This work was published in *Aviation Psychology and Applied Human Factors* 2014; Vol. 4(2):106–112.

Review of Approaches to Learning Adopted by Architecture Students in the Coursework of Architectural Design

Prof. Ashok Ganapathy Iyer, Manipal University Dubai, Dubai, UAE

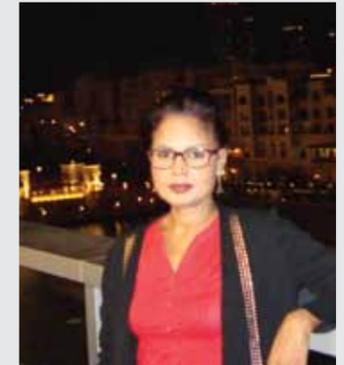
Students' approaches to learning in higher education has been presented in terms of surface and deep approaches (Marton and Säljö 1976). This paper reviews selected literature in architectural education where the definition of approaches to learning adopted by architecture students in the coursework of architectural design is compared with surface and deep approaches. The categorised approaches identified in an earlier study adopted by first and fourth year architecture students (Iyer and Roberts 2014) are correlated to this review to present how the concepts of deep and surface approaches to learning manifest themselves in architectural education. In conclusion, the study (Iyer and Roberts 2014) and the review points towards a more complex set of approaches to learning than just a deep and surface division. It also raises a further question about adapting the categorised approaches from earlier investigations, which point towards a continuum between deep and surface learning. The review of architecture students' approaches to learning is a reflection towards the surface dimension and going in the direction of deeper dimension through years of training and reflective practice in architectural education. This study was published in a peer-reviewed e-journal ISSN 2309-0103 (www.enhsa.net/archidoct) *archi-DOCT* Vol. 3 (1), July 2015 Page 21-30.



Predictive factors of Schizotypy: A study upon creativity, neuroticism, extraversion and gender

Dr. Anita Shrivastava, Middlesex University Dubai, P.O. Box 500697, Dubai, UAE and Fouzia Siddique, University College London, UK

A bulk of research in schizotypy has focused on - its comparison with other disorders and risk of developing psychopathological illness. Researches that specifically focused on establishing link between schizotypy and other factors, have mainly concentrated on creativity while ignoring other personality and demographic factors for example gender. Therefore this research aimed to assess predictive factors of schizotypy. Data was collected from 91 volunteer undergraduate students (30 females and 61 males) of Middlesex University, Dubai using Schizotypal questionnaire (SPQ-A), Creative Analysis Questionnaire (CAQ) and International and Personality Item Pool (IPIP) test. Results of Pearson's r and subsequent stepwise hierarchical regression analysis suggest significant relationship between schizotypy and extraversion ($r = -.449, p < .05$); between schizotypy and neuroticism ($r = .378, p < .05$). Extraversion, neuroticism and gender appeared to be significant predictors (accounting for 31% variance) of schizotypy. Creativity did not emerge as significant predictor. The study suggests that factors other than creativity might predict schizotypy and creativity seems to be mediated by other factors of personality and intelligence. This research was published in *International Journal of Research in Social Sciences*, 2014, Vol.4, Issue 4, 778-789.



Research Connect @Dubai



Events

Third International Conference on Emerging Research Paradigms in Business and Social Sciences; 24th, 25th and 26th November, 2015; Park Hyatt Dubai, Dubai Creek

Middlesex University Dubai takes great pleasure in announcing the Third International Conference on Emerging Research Paradigms in Business and Social Sciences (ERPSS-2015). In this Third International Conference ERPSS 2015 we seek to explore "What's Next?".

The eight tracks of the ERPSS 2015 conference are:

- 1) Accounting, Finance and Economics
- 2) Contemporary Psychology
- 3) Education Training and Development
- 4) Information and Communication Technology
- 5) International Law and International Relations
- 6) Management and Marketing
- 7) Media, Journalism, and Communication
- 8) Tourism and Hospitality

Please visit the conference website for more details and guidelines for submissions:

www.mdx.ac.ae/conference or mail queries to: erpss2015@mdx.ac.



International Psychology Conference Dubai (IPCD), October 30-31st 2015; Heriot-Watt University Dubai Campus, UAE



The school of Life Sciences at Heriot-Watt University Dubai Campus (HWUDC) hosted the annual International Psychology Conference Dubai, now in its third year. The event was organized by Dr. Annie Crookes in collaboration with industry professionals and is held each year at the HWUD campus. IPCD is a professional psychology event aimed at enhancing the industry of psychology in the UAE and GCC region. IPCD 2015 had three parallel streams: Clinical and counselling; Occupational and coaching psychology; Child and education psychology. The aim was not only to provide a knowledge development event but also a chance to strengthen the industry by bringing these different fields together as a professional community.

IPCD is now one of the leading psychology events in the UAE and last year attracted over 230 delegates from around the region and internationally attending over the two days. The agenda included training workshops and forums for discussion of best practice alongside traditional paper presentations. This year keynotes included global leaders in positive psychology and creativity research as well as specialists in workplace counselling, infant development and enhancing well-being in schools.

Website for event: www.psych-me.com

The Pioneers Program in Sustainability Conducted by RIT Dubai in collaboration with the Ministry of Public Works (December 2014 – May 2015)

RIT Dubai conducted a sustainability workshop for the Ministry of Public Works Engineers, over a period of six months in order to train pioneers in various aspects of sustainability. The program was aimed at preparing UAE nationals in the field of sustainability engineering so they can i) contribute to the implementation of the Green Growth strategy of the UAE, ii) improve the institutional efficiency of the ministry employees and project execution, iii) improve the nationals' expertise in cutting edge engineering knowledge and iv) finally increase the rate of jobs nationalisation. Through the program, the participants developed awareness about the fundamentals and tools of sustainability, learn about decision making and risk in sustainable project undertakings, apply sustainability measures and learn about Green Acquisition. The workshop consisted of six modules. The modules were conducted at RIT Dubai and Golisano Institute of Sustainability (GIS) of RIT Rochester campus. At the conclusion of the program, the students submitted and defended their graduation projects in front of the program committee and were issued a diploma in sustainability. The modules were delivered by faculty and sustainability experts from GIS. Dr. Abdullah Ismail and Dr. Ghalib Kahwaji steered the workshop and guided the graduation projects.



Expo 2020 – Students' Aspirations Amity University Dubai organises Expo 2020 – centric event



This day-long event comprised paper presentations, a poster competition and business case analysis, providing opportunities for students from all HEIs in the UAE, to reflect their perspectives and aspirations with regard to Expo 2020, thereby contributing to the phenomenon that has placed Dubai and the UAE on the global visibility spectrum. Dr. Warren Fox, Chief of Higher Education at the KHDA congratulated the University for organising this event, bringing together academicians and students across higher education institutions on a contemporary theme, which brings pride to the UAE. Dr. Atul Chauhan, President & Chancellor, Amity Education Group, outlined Amity's commitment to align with the strategic direction of the UAE and to support the student community in all its endeavours.

In the research paper session, students shared their perspectives pre and post Expo 2020, while the poster competition, showcased their ingenuity regarding the Expo2020 subthemes through creative depictions. In the business case analysis, students presented their insights on three Expo related case studies written by faculty at Amity University Dubai. Experts from industry, and academicians assessed student work. Prizes aggregating to AED 25,000, in the form of AED 10,000 each to the Best Paper and the Best Case Analysis, and AED 5,000 to the Best Poster were awarded. The excitement in the crammed auditorium on the announcement of the winners of the much coveted prizes was electric - and immediately sparked interest and discussion on next year's event.

Current Trends in Biotechnology



The School of Life Sciences, Manipal University Dubai Campus organized an international conference on the topic "Current Trends in Biotechnology, on, March 18-19, 2015. The conference Chief Guest was Mr. Marwan Abdulaziz Janahi, Executive Director, DuBio-tech. EnPark also participated in the event along with over 150 students, professionals and biotech industry experts.

Manipal International Conference on Technology Management (MiCTM)

Manipal International Conference on Technology Management was organized by the School of Engineering & Information Technology on March 26th, 2015. MiCTM 2015 was the 3rd International Conference on Technology Management with participation from the Middle East and across the globe. The first conference in this series was held in 2009.



Heriot-Watt signs MOU with University of Sharjah



The University of Sharjah and Heriot-Watt University have signed a memorandum of understanding that will see both institutions collaborate on research, education and training. The agreement was signed by Professor Muammar Baltayeb, University of Sharjah's Charge D'affaires and Deputy Director for Scientific Research and Higher Studies' Affairs, and Professor Steve Chapman, Heriot-Watt's Vice-Chancellor and Principal in November 2014. The partnership focuses on the importance of international cooperation in teaching, training and scientific research, with the agreement encompassing Heriot-Watt's Dubai and UK campuses.

Professor Ammar Kaka, Vice-Principal and Head of Dubai Campus elaborated:

"Through this Memorandum of Understanding, both universities hope to provide a strong platform for PhD students and give them easy access to the necessary information and tools to further their studies and research".

Manipal International Symposium on Design

The School of Design and Architecture (SoDA), Manipal University Dubai hosted its first Manipal International Symposium on Design (MiSD) on May 6th & 7th, 2015. Dr. Peter Scriver from the University of Adelaide, Australia and Dr. Yasser Elsheshtawy from UAE University (Al Ain), delivered keynote presentations.



EXPO 2020 Management Perspectives

The School of Business, Manipal University Dubai organised its first national conference on the theme "Expo 2020 Management Perspectives" on 20th May 2015. The keynote address was delivered by H.E. Anurag Bhushan, Consul General of India and the conference was attended by students, industry professionals and experts.



Social Media: Impact, Consumption & Gratification



The Media & Communication Research and Analysis Wing (under the aegis of School of Media & Communication, Manipal University Dubai) organised its first international conference themed, "Social Media: Impact, Consumption & Gratification" on 21st May 2015. The keynote speaker was Dr. Meena T Pillai Director, Centre for Cultural Studies, Institute of English, University of Kerala. The conference aimed at providing quality platform for global student researchers in the media impact (MI) domain and to provide vital insight and solutions to the challenging problems that exist in the field of Social Media.

Heriot-Watt University Dubai Campus hosts the Annual Heriot-Watt/MWH/ICE Prestige Lecture on Resilience “Getting into Shape”

Key Note Speaker Prof. Paul Jowitt



Paul Jowitt is a Professor of Civil Engineering Systems at Heriot Watt University. Between 1999 and 2013 he was also Executive Director of the Scottish Institute of Sustainable Technology, a joint venture between MWH Ltd and Heriot Watt University. Paul was Chair of the ICE Presidential Commission - "Engineering without Frontiers" – examining the engineer's contribution to meeting the UN Millennium Development Goals. In 2009 he became the 145th President of the Institution of Civil Engineers. Paul's major interests are sustainable development and systems-level solutions in engineering and the environment, particularly in water resources, risk-based asset management and water distribution systems. He graduated from Imperial College in 1972, and was a Lecturer there from 1974 until he moved to Heriot Watt in 1987, becoming Head of Civil and Offshore Engineering from 1989 to 1999. He was a Board Member of Scottish Water from 2002 to 2008. He was elected a Fellow of the Royal Society of Edinburgh in 2005 and the Royal Academy of Engineering in 2012. He is the Chair of the charity Engineers Against Poverty. In 2011 he was awarded a CBE in the Queen's Birthday Honours List for services to technology.

Abstract:

Infrastructure resilience is crucial for both the developing and developed worlds. Physical and social infrastructures are complex. They interact and are vulnerable to a range of natural and other threats. The role of maintaining and creating resilient physical infrastructure falls to the engineer. The burden of paying for it falls to society, through taxation or user charges. It's time we got all this into shape...

The Lecture was held on:

Sunday 18 October 2015;
Heriot-Watt University Dubai
Campus, Dubai, UAE

Highlights of Students and Staff Achievements

Heriot-Watt University Dubai Campus Student Awarded Runner-up Prize at Phoenix Contact's Xplore New Automation Competition in Germany



Fourth year Electric and Electronics Engineering student, Rakesh Joe Francy, beat 200 global entrants in the Phoenix Contact's Xplore Automation Award 2015, to win second place with his initiative 'Mini Automated Farming.' Taking place every three years the international competition is based on new innovative ideas on the implementation of PLC (Programmable Logic Control) and HMI (Human Machine Interface). There are five categories: building automation, education, environment, recreation and inspiring engineers, of which Francy was the only environmental entrant. Initially 85 teams were short-listed from 29 different countries, and given 1,650 AED/300 GBP to build their projects, sending video updates to the judges on their progress every two months. Francy was selected as one of the top 30 finalists, travelling to Germany for the final round. The four-day final stage saw his invention put on display and he had the opportunity to bring it to life for the judges in person. He beat teams from China, Japan, Russia and Germany in the final and was the only student representing the UAE.

Dr. Cody Morris Paris receives two prestigious tourism research awards in 2014

Along with his co-author, Dr. Jennie Germann Molz, Dr. Cody Morris Paris won the prestigious IFITT Journal Paper of the Year Award (2013) at the 22nd Annual ENTER 2014 Conference on eTourism held in January in Dublin, Ireland for their paper



titled 'The Social Affordances for Flashpacking: Exploring the Mobility Nexus of Travel and Communication' published in the journal *Mobilities*. The award is given each year by International Federation for Information Technology and Travel & Tourism to the most innovative and scientifically rigorous information technology and tourism-related paper published in any academic journal during the year. As a result of the award, the journal *Mobilities* and publisher Taylor and Francis have made the paper Open Access and downloadable through the link below. Germann Molz, J. & Paris, C. (2015) Social Affordances of Flashpacking: Exploring the Mobility Nexus of Travel and Communication. *Mobilities*, 10(2), 173-192. <http://dx.doi.org/10.1080/17450101.2013.848605>

In other good news, Dr. Cody Morris Paris and his co-authors, Prof. Tim Tyrrell and Dr. Vernon Biaett, have been awarded the 2014 Charles R. Goeldner Article of Excellence Award for their paper 'A Quantified Triple Bottom Line for Tourism: Experimental Results', published in the *Journal of Travel Research*. The award is given by the Travel and Tourism Research Association (TTRA) to the article deemed to have been the best article published in the *Journal of Travel Research* (generally considered one of the top 3 journals in the tourism field) in the preceding year. The award was presented at the 45th annual Travel and Tourism Research Association Conference in Bruges, Belgium in June.

Tyrrell, T., Paris, C., & Biaett, V. (2013) A Quantified Triple Bottom Line for Tourism: Experimental Results. *Journal of Travel Research*, 52(3), 279-293. <http://eprints.mdx.ac.uk/17471/>

BITS Pilani, Dubai Campus Scoops the Best Conservation Team Award by DEWA in 2015

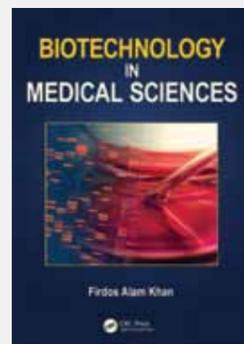


BITS Pilani, Dubai Campus won the Conservation Award in the University Category called the "Conservation-For-A-Better-Tomorrow Award" by DEWA, in 2009 and 2012. A five-member student team led the effort in 2014- 2015 and won the Best Conservation Team Award. Students conducted a number of events and workshops like BITS Conservation Project, Paper Bag Making Session, M.A.D Literary, Poster Making, Capture To Click, Create Best Out Of Waste, Collage Competition and Reachout!!! to bring awareness in conservation of water and electricity to students. Students also led campus' participation in the Earth Day, Earth Hour and Campus Wide Mass Sensitization Program and Clean-up. Carbon emissions due to electricity/water usage, faculty/student transportation and reductions due to measures taken were monitored and estimated to establish the positive impact on the environment.

BOOK PUBLICATION



Dr. Firdos Alam Khan, Professor and Chairperson, School of Life Sciences, Manipal University Dubai Campus has published his 2nd book entitled "Biotechnology in Medical Sciences" in June 2014. This book is published by CRC Press, USA. ISBN-13: 978-1482223675.



Research at Middlesex bags 'Outstanding Research Award'

Dr. Rajesh Mohnot attended and presented a research paper at the 17th Global Conference on Business and Finance Research held in San Jose, Costa Rica in May 2014. His paper 'Resilience of Islamic Financial System during Crisis Period' won two awards. First, it was awarded the 'Best in Session' award, and second the 'Outstanding Research' award. The 'Outstanding Research' award is given to selected papers that are of particular high quality and meet the requirements of publication in one of the top tier journals published by the renowned IBFR – The Institute for Business Finance and Research. Further details can be found at: www.theibfr.com.



Dr. Rajesh Mohnot (first from left) receiving the award from Prof Terrance Jalbert (in center) Conference Organizing Chairman.

BOOK PUBLICATION



Dr. Ravishankar Dudhe, Associate Professor, School of Engineering & Information Technology, Manipal University Dubai Campus has published his book entitled "Ofet Based Electronics Nose Platform For Explosive Detection" in April 2014. This book was published by Scholars Press. ISBN-13: 978-3639713206.



Guest Editor for Special Issue in Journal of Thermal Spray Technology



Dr. Rehan Ahmed of Heriot-Watt University and Prof. Christopher Berndt of Swinburne University of Technology (Australia) acted as Guest Editors for a special issue in "Nanocomposite Coatings".

This issue was part of the Journal of Thermal Spray Technology published by Springer (<http://link.springer.com/article/10.1007%2Fs11666-014-0136-8>). The special issue explored the characteristics and properties of thermal spray coatings that advance this technology by taking an additional step to produce nanocomposites. Dr. Rehan added: "This issue of JTST encompassed papers that deal with modeling; powder and suspension developments; and process parameters for a variety of applications in biomedical, transportation, manufacturing, and energy sectors."

Dr. Cody Morris Paris Elected to the Executive Board of ATLAS

Dr. Cody Morris Paris, Associate Professor at Middlesex University Dubai, was elected to the Executive Board of the Association for Tourism and Leisure Education and Research (<http://www.atlas-euro.org/>). The Association for Tourism and Leisure Education (ATLAS) was established in 1991 to develop transnational educational initiatives in tourism. ATLAS provides a forum to promote staff and student exchange, transnational research and to facilitate curriculum and professional development. ATLAS currently has 218 member institutions in 68 countries.

In addition to his election to the Executive Board, Dr. Cody has also been appointed the ATLAS Middle East Coordinator with the task of establishing a new ATLAS Middle East chapter, and is the co-chair of the Independent Travel Research Group. In this role, he will convene a special session on "Independent Travel and Risk" this October in Lisbon, Portugal at the ATLAS Annual Conference and a conference on "Rights, Responsibilities, and Independent Travel" to be held at the University of South Pacific in Suva, Fiji in December.

Emirates Green Building Award for RIT student

A research project entitled “*Low and Medium Voltage Chiller Drives: A life Cycle Analysis*” Conducted BY Muna Saleh Al-Nahdi in partial fulfillment of her master degree under the supervision of professor Ghalib Y. Kahwaji received the Emirates Green Building Award for the Excellent Graduate Research Award- 2015 Campaign. This research was also presented at the Abu Dhabi International Research and Development Conference, ADRAC 2015, May 24-26 2015, in the Energy Efficiency Track as a paper entitled “*MV versus LV Chiller drives: Comparative Analysis*”.



Student

Anomitra Banerjee is a final year Mechanical Engineering student from BITS Pilani. In November 2014 he became the first Asian and Indian to win the ASME Old Guard Oral Presentation Competition at Montreal, Canada among 14 other students from across the world from USA to France, Egypt to Japan. In June 2015 Anomitra was chosen as ‘The Student Liaison Officer’ at the ‘ASME International Gas Turbine

Institute’ and also received the ‘ASME SAC Student Travel Award’ at the ‘Turbo Expo 2015’. Recently he was chosen to represent MENA region at the SLTC held at the ‘Mechanical Engineering Congress’, Houston, Texas.

Excellent Research Paper Award for Manipal University



Ms K.G. Taramal, Assistant Professor, School of Business, Manipal University Dubai, has been awarded the excellent paper award for her paper entitled “*International Conference on Technology,*

Science, Social Sciences and Humanities Dubai” organized by the International Conference on Technology, Science, Social Sciences and Humanities Dubai. She has also won the best paper award for her research paper “*The Impact of Micro Finance on rural Household in Kerala*” presented at the 2nd International Business Economics Social Sciences Research Association Conference in Dubai in March 2015.

Best Research Paper Award for Innovative Research

Prof. Bhakti More, Associate Professor, School of Design & Architecture, Manipal University, Dubai, received “CIOB Best Research Paper Award for the Most Innovative Research”, for her paper titled,

“*Expatriate Housing and Social Fabric in Dubai*”, at the 12th International Postgraduate Research Conference (IPGRC15), hosted by the School of the Built Environment, College of Science & Technology, University of Salford, at Media City Campus, Manchester, UK. The conference received over 141 paper and poster abstracts.



Design Competition Participation of Students from BITS Pilani at ASHRAE

Mechanical engineering students Atyaab and Arjun Arya have participated under the guidance of Dr. Udayakumar in the prestigious international design competition conducted by the American Society Of Heating Refrigeration and Air Conditioning (ASHRAE). They came fourth place overall, where students from the leading universities all over the world participated. They stood first at the middle east level.

Best Research Paper Presentation Award



The BSc Biotechnology final year students (Varsha Radhakrishnan and Umme Hani Habeeb) of the School of Life Sciences have won the 2nd position in the 3rd UAE Undergraduate Student Research Competition at Abu Dhabi University, Khalifa campus, Abu Dhabi. This competition was held at the national level under the patronage of HE Sheikh Hamdan Bin Mubarak Al Nahyan, the Minister of Higher Education and Scientific Research on 21st May, 2015. Students’ won the cash prize of AED 3000.

Cloud Computing: Rising above the Cloud



Dr. Krishnadas Nanath, Senior Lecturer at Middlesex University Dubai, was invited as a guest speaker at Datamatix Gitex Conference in October 2014. This conference provided a platform to identify the ICT-related issues which influence governmental and

organizational performance, and to further focus on recent innovations within this domain. The talk focused on best practices in cloud computing for UAE Government as the theme of the conference was ‘Empowering GCC Smart Government Technologies’.

ASME Old Guard Oral Presentation Competition Award for BITS Pilani Student



Anomitra Banerjee is a final year Mechanical Engineering student from BITS Pilani. In November 2014 he became the first Asian and Indian to win The ASME Old Guard Oral Presentation Competition at Montreal, Canada among 14 other students from across the world from USA to France, Egypt to Japan. In June 2015 Anomitra was chosen as ‘The Student Liaison Officer’ at the ‘ASME International Gas Turbine Institute’ and also received the ‘ASME SAC Student Travel Award’ at the ‘Turbo Expo 2015’. Recently he was chosen to represent MENA region at the SLTC held at the ‘Mechanical Engineering Congress’, Houston, Texas.

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