

MONDAY MARCH 13
MARY CROSS HALL

Theme	Presenter	Department	Presentation Title	Abstract
Session 1 "Climate Change in the Public Eye"				
10:00-10:15 am	Yasser Elshayeb	PENG	The big picture of climate change research in the Arab world: Insights from bibliometric analysis	Global impacts of climate change are wide-ranging and unprecedented in scope, ranging from shifting weather patterns that threaten a permanent change of the ecosystem on earth (which may severely affect human life, including water and food security), to major events directly affecting human lives, such as natural / climate-related disasters, rising sea levels, etc. With the organization of two successive conferences of the parties (COP) in the Arab region, it became evident that there is extensive attention from governments and regional bodies in the Arab region towards issues related to climate change. In this study, we aim to analyze the research performance of Arab scholars on climate change based via a bibliometric analysis of published research articles in 22 Arab countries. We have used a multivariate approach for data analysis and bibliometric indicators characterization. Many indicators are used to examine scientific performance, as well as the trends of a growing number of publications, number of citations, number of authors, etc. Using a predefined set of keywords related to climate change and UN climate change themes, we were able to assemble a dataset of 68,193 documents (published papers) that were further analyzed to set the scene and show the status of scholarly publications from authors of the Arab world. Saudi Arabia comes on top of the Arab countries in terms of the number of publications in climate change research-related publications, followed by Egypt, Morocco and the United Arab Emirates, while IEEE, Energy Procedia and Arabian Journal of Geosciences are the top three choices for publications related to climate change among the Arab countries.
10:40-10:55 am	Rasha Allam	JRMC	The Role of Solution Journalism in Reporting the Climate Change Crisis	The Role of Solution Journalism in Reporting the Climate Change Crisis
BREAK 15 Minutes				
Session 2 "Climate Change and Art"				
11:15-11:30 am	Bahia Shehab	ARTS	Heaven and Hell in the Anthropocene	After receiving over 3000 thousand visitors at COP27, the interactive artwork "Heaven and Hell in the Anthropocene" will be installed on our beautiful AUC campus. This presentation will highlight the details of the art installation and how gamification was used as an educational tool to create awareness of the challenges we are facing as a humanity with climate change. The talk will also highlight how art can be used as a tool for social change.
BREAK 90 minutes				
Session 3 "Climate Change and the Built Environment"				
1:00-1:15 pm	Tamir El-khouly	ARCH	Combining retrofitting techniques, renewable energy resources and regulations for residential buildings to achieve energy efficiency in gated communities	The purpose of this research is to investigate the impact of a proposed integration method between energy retrofitting techniques and renewable energy resource systems on houses, taking into account the considerations and requirements specified in the Egyptian energy code for residential buildings EECRB, using a gated community in northeast Cairo as a case study. The long-term objective is to achieve net zero energy consumption.
1:15-1:30 pm	Sherif Nader Alphonse Goubran	ARCH	Experimental study of envelope airtightness in new Egyptian residential dwellings	Experimental study of envelope airtightness in new Egyptian residential dwellings
1:30-1:45 pm	Sherif Abdelmohsen	ARCH	Climmersive " A Computational Framework for Architectural Design Studio Education: AUC Campus as a Case Study	Climmersive " A Computational Framework for Architectural Design Studio Education: AUC Campus as a Case Study
BREAK 45 minutes				
Session 4 "Climate Change and the Built Environment" - Continued				
2:30-2:45 pm	Momen El-Husseiny	ARCH	"Cairo Bike" for Women? Planning Parameters for Street Design towards Safe Micro-Mobility in Egypt	In recent years, micro-mobility has proven to be a popular mode of transportation for many users across the globe, providing environmental benefits that help cities adapt to climate change challenges, delivering practical and efficient mobility options that make transit networks more accessible, and promoting physical activity, all of which are pillars to achieving a much-needed transition towards sustainable mobility options. In the transportation sector, gender discrepancies in planning and policy have over time grown to be more widely acknowledged, yet there is still a gap when it comes to planning and promoting gender-responsive micro-mobility systems in the Global South, including Egypt and the MENA region where the notion of micro-mobility, including bike sharing systems, is relatively new. The purpose of this study is to find out how planning criteria extracted from harassment victims' testimonies can direct planners to create a women-safe micro-mobility infrastructure. In addition, the study aims to investigate how the physical, spatial, social, and cultural attributes of the built environment surrounding "Cairo Bike" stations in Downtown Cairo exacerbate women's harassment. Multi-layered mapping and regression models will be used to correlate gender-based crime statistics with characteristics of the built environment where the current and proposed bike-sharing systems are located. In order to comprehend how both men and women use the currently implemented bike stations, field observations, and questionnaires will also be utilized. Additionally, information will be gathered on the social life and air quality in the vicinity of each station at various times throughout the day. Not only will this help in suggesting alternate routes and pathways around Downtown Cairo that are less polluted, characterized by lower traffic, and safer for all to use when riding bikes around the city, but it will also help in promoting active modes of transportation along with developing policies that deliver equitable transportation systems. Keywords: Bike Sharing Systems, Gender- Responsive Micro-Mobility, Spatial Relationships, Socio-Cultural Parameters, Women Safety, Downtown Cairo.
2:50-3:05 pm	Mohamed Nagib AbouZeid	CENG	Protection and Mitigation of Egypt's Coastal Structures against Climate Change ypt against	Egypt's has long stretched coasts over the Mediterranean and the Red Seas. Substantial construction assets of billions of dollars worth are subjected to damage due to the adverse effects of climate change. This study is based on several projects conducted at AUC including a funded-research project all of which aimed at assessing the nature and extent of damage on one hand and providing mitigation and protective measure on the other. Case studies are presented and discussed. Recommendations are provided to the construction industry and the decision-makers to alleviate potential damage and to seek meaningful means for protection.
3:10-3:25 pm	Mohamed Darwish	CENG	Eco-friendly Cost-effective Construction	Humanity has been increasingly suffering from economic and environmental pressures. Extensive usage of reinforced concrete and steel have been causing more pressure on the finances of disadvantaged communities in addition to increasing carbon emissions. Resorting to natural-based solutions such as wood construction and earth construction is the optimal solution however the public and the authorities need to be convinced. The path to convincing both is to construct full-scale prototypes made from naturally based materials that are proven to be durable, cost-effective, and eco-friendly. These prototypes will be the eminent proof that a structure could be cost-effective, eco-friendly while still being durable. These prototypes will be the example to be followed by NGOs and governmental authorities to construct houses for the disadvantaged people.
3:30-3:45	Maram Mahmoud Saady	CENG	Towards a More Resilient Transportation Infrastructures in Egypt: Pavement Greener Solutions	Egypt is giving the transportation infrastructure sector a considerable attention to meet the expected future transportation needs. In order to aid to and backup the country in its needs, this research aims at providing not only a wide transportation network but also a resilient transportation network. Resilient transportation infrastructures are infrastructures capable of dealing with and bearing drastic changes such as the climate change. Constructing roads with permeable asphalt pavements capable of draining sporadic storm rainfalls, without affecting the traffic flow, can help in providing more resilient infrastructures. Moreover, providing greener and more sustainable solutions to the Egyptian pavement problems can play a major role in the fulfillment of a more resilient transportation infrastructures. Two greener scenarios are investigated; the first is using Geopolymers as an environmentally friendly additive to asphalt that can enhance the pavement performance in terms of different pavement distresses and the second is incorporating waste materials such as the recycled rubber, of waste tires, and the plastic into asphalt showing the benefits and shortcomings of this approach. The two investigated scenarios not only aid in the enhancement of the pavement performance and the control of the expected pavement defects/distresses all over the pavement design life, but also help in the management of the industrial waste materials which are used as green additives and modifiers to the asphalt pavements. Results of the first phase of this research demonstrated promising enhancement in the asphalt performance by incorporating different waste materials such as curb rubber, plastic, and waste based Geopolymers. In addition to, designing an initial porous hot asphalt mixture that can be used for the construction of permeable asphalt pavements that can play a major role in managing the consequences of heavy storm rainfalls recently occurred frequently as a result of the climate change.