



THE IMPACT RANKING



INDUSTRY, INNOVATION AND INFRASTRUCTURE



SDG 9 – Industry, Innovation, and Infrastructure

9.1. Conferences / Workshops:

 The Petrochemical Engineering Department (Faculty of Engineering) announces the start of a number of online summer training courses. The three-week courses will start on Saturday, 15 August 2020 and the registration opens on Monday, 10 August 2020. It is worth mentioning that the first training course entitles "Trouble shooting in Petrochemical plants" and



will be attended by a number of experienced professionals in the field of petrochemical industry.

https://www.pua.edu.eg/the-petrochemical-engineering-department-holds-thesummer-training-courses/

- On October 10th 2019, staff and students of the faculty of engineering had a field visit to Alex Electricity Distribution Company to explore electrical energy distribution and energy conservation practices, which is inline with SDG 9 (Industry, Innovation and infrast.) and SDG 7 Affordable energy
- ON December 8, 2019, staff and students of the faculty of engineering had a field visit to Sidi Kerier petrochemical company (SidPec), to learn more about polymers and its prodiction, and the quality aspects associated with this industry.
- On December 12 2019, 2019, staff and students of the faculty of engineering had a field visit to Alexandria Company for fertilizers to explore more about this industry, and its production with the minimum use of energy . , which is inline with SDG 9 (Industry, Innovation and infrast.)



- During the period of November 2019, the Faculty of Engineering organized a workshop in cooperation with
- the Plastic Technology Center in Alexandria ,
- ministry of trade and industry,
- SEED project of the USAID,
- Cabinet of chemical industries, and
- The Value Chain Development Center of the Nile Pioneers Initiative

The workshop title was" Degradable plastics and additive technology". The aim pf the project was spreading the awareness of plastic manufacturers in Murgham Complex, on additive technology for degradable plastics.

The workshop, dealt with new technologies in using additives to produce plastics and biodegradable paints instead of traditional plastics, and how to motivate and encourage institutions and companies to use it and reduce the cost of its production. A number of participating companies presented some studies for their production of plastic and biodegradable paints in the presence of a number of Industrial representatives

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Project name		Summary			
1.	Natural Fibers	The usage of natural resources will play a leading role in the			
		sustainable development of the cement and concrete industry			
		during this century. Plant-based natural fibres are used more			
		increasingly in construction materials. Despite the low-cost of such environmentally friendly renewable material, it has the ability to			
		enhance the mechanical properties of construction materials. This			
		project presents extensive experiments on the use of plant based			
		natural fibres as reinforcement for cement-based composites, with			
		a particular emphasis upon fibre types; fibre characteristic, and			
		fibre-cement composites performance			
2.	Smart campus	This project is still proceeding in the academic year 2020/2021 and			
		it aims to construct a smart system for the life of students and staff			
		members in university campus. It helps the education process and			
		provides facilities to check attendance. It also allows students to			
		enter the campus and study rooms with a smart card that can also			
		be used for fees payment.			
3.	Smart traffic	(SDG 11) Make cities and human settlements inclusive, safe,			
	light	resilient and sustainable			
4.	Smart campus	This project is still proceeding in the academic year 2020/2021 and			
		it aims to construct a smart system for the life of students and staff			
		members in university campus. It helps the education process and			
		provides facilities to check attendance. It also allows students to			
		enter the campus and study rooms with a smart card that can also			
		be used for fees payment.			
5.	Design a solar	Statistics these days say that electricity demand increase in air			
	hybrid air	conditioning system, due to increasing in temperature in the most			
	conditioning	of countries, so people suffer from high electricity bills. Integrate			

9.2. Projects of students

compressor solar devices or systems to use heat gain from sun to get					
	system	electricity, and devices that we can use {photovoltaic, solar			
		collector, hybrid system}. The electricity produced can be used to			
		operate compressor that used for compressing the refrigerant in			
		air conditioning system .Three system mentioned above, we			
		should select the best system that give low electricity demand and			
		high efficiency .			
6.	Solar trackers	This project represents a smart power supply by using solar energy			
	for hybrid	as the sources. It reduces the Use of other sources in order to			
	power supply	achieve our goal to generate electricity (during day time). The solar			
		tracker device equipped with the project which is absorbs the			
		ultraviolet (UV) from the sun in maximum condition.			
		The tracker operates with single axis rotation where it can be			
		rotating horizontal. This circuit is activated when light dependent			
		resistor (LDR) detecting the sunshine where four sensors are			
		placed at north and south position.			
7.	Public	This project was done in the academic year 2019/2020 and its main			
	Transportation	goal was to design a smart system for public transport. The system			
	System	uses GPS and GSM system to determine the exact location of vehicle			
		and collect data to provide people with the best choice of public			
		transport to use. The system saves time and money and helps in the			
		concept of building smart cities and includes several industrial			
		innovations.			
		(SDG 11) Make cities and human settlements inclusive, safe,			
		resilient and sustainable			
		(SDG 9) Build resilient infrastructure, promote inclusive and			
		sustainable industrialization and foster innovation.			
8.	Brain	This project was done in the academic year 2019/2020. The main			
	Controlled	objective of the project is to help people that were born with the			
	Wheelchair	inability to move or had experienced accidents, which led to their			
	Based on	loss of this ability. Such situation negatively affected their lives and			
	Mental Task	made them in a permanent need for those who take care of them.			
	Classification	The project used technologies to allow these people to control			
		wheel chair via their brain function.			
		(SDG 9) Build resilient infrastructure, promote inclusive and			
		sustainable industrialization and foster innovation.			
		(SDG 3) Ensure healthy lives and promote well-being for all at all			
		ages			
9.	Smart campus	This project is still proceeding in the academic year 2020/2021 and			
		it aims to construct a smart system for the life of students and staff			
		members in university campus. It helps the education process and			
		provides facilities to check attendance. It also allows students to			
		enter the campus and study rooms with a smart card that can also			
		be used for fees payment.			

9.3. Courses in Curricula

Faculty	Course name	Course code	SDG-relevancy	Торіс
Pharmacy	Project in Pharmacognosy & Natural Products	PG E08	3,12, 9	Sustainable use of natural resources
Pharmacy	Good Manufacturing Practices	PPC E02	12,9	Responsible production consumption techniques in pharmaceutical industry
Tourism	Introduction to Hospitality Industry	HM 101	9, 17	Sustainable industrial practices
Tourism	Entrepreneurship in Hospitality Industry (Elective)		9.17	Economic growth and partnership with tourism companies

9.4. Publications

Heat transfer enhancement in a radial turbulent sink flow cooling system

Sorour, M.M., Fayed, M., El-Din, N.A.

Alexandria University

A Coherent Performance for Noncoherent Wireless Systems Using AdaBoost Technique

Gamal, H., Ismail, N.E., Rizk, M.R.M., Khedr, M.E., Aly, M.H.

Arab Academy for Science Technology, Alexnadria university

A novel nanocomposite of Liquidambar styraciflua fruit biochar-crosslinked-nanosilica for uranyl removal from water

Mahmoud, M.E., Khalifa, M.A., El Wakeel, Y.M., Header, M.S., El-Sharkawy, R.M., Kumar, S.,

Old Dominion University, Alexandria University

A System Dynamics Model of Apparel Supply Chain UnderMass Customization

Issa, M., Elgholmy, S., Sheta, A., Fors, M.N.

Alexandria university

SDG9

ArMTFr: a new permutation-based image encryption scheme

Elkamchouchi, H., Salama, W.M., Abouelseoud, Y.

Alexandria University

Biodegradation of Petroleum Oil Effluents and Production of Biosurfactants: Effect of Initial Oil Concentration

Mostafa, N.A., Tayeb, A.M., Mohamed, O.A., Farouq, R.

Minia university

Design and testing of high-density polyethylene nanocomposites filled with lead oxide micro- and nano-particles: Mechanical, thermal, and morphological properties

Mahmoud, M.E., El-Khatib, A.M., El-Sharkawy, R.M., Rashad, A.R., Badawi, M.S., Gepreel, M.A.

Beirut Arab University, Egypt-Japan University of Science and Technology

Does engineering of nanoshapes have antibacterial synergy with magnetic signal exposure? El-Kaliuoby, M.I., El-Khatib, A.M., Khalil, A.M.

Alexandria University

Effect of square pulsed magnetic field exposure on growth kinetics of Dickeya solani Balabel, N.M., El-Kaliuoby, M.I., Khalil, A.M.

Alexandria University, Agriculture Research Center

Fabrication and characterization of phosphotungstic acid - Copper oxide nanoparticles - Plastic waste nanocomposites for enhanced radiation-shielding

Mahmoud, M.E., M.El-Sharkawy, R., Allam, E.A., Elsaman, R., El-Taher, A

Al-Azhar University, Alexandria University

Graphene Magneto-Electric Antenna on Curved Structures for Millimeter Wave Communications Ghazi, A.M., Hamada, H., Malhat, H.A., Zainud-Deen, S.H

Higher Technological Institute, Menoufia University, Badr University

High gain graphene-based magneto-electric antenna for 5G communications

Zainud-Deen, S.H., Malhat, H.A., Ghazi, A.M.

Badr University in Cairo, Menoufia University

Humans and bots web session identification using k-means clustering

Medhat, M., Hassan, Y.F., Elsayed, A.

Alexandria university

Kinetic study of the esterification of unsaturated free fatty acids

Hawash, S.A., Ebrahiem, E.E., Farag, H.A.

Alexandria University, Minia University

Lupine extract: A promising eco-friendly corrosion inhibitor

Zarraa, R.M., Mahgoub, F.M., Hefnawy, A.

Alexandria university

On the Location of a Constrained k- Tree Facility in a Tree Network with Unreliable Edges

Aboutahoun, A.W., Fares, E.

Zewail City of Science and Technology

Study of some gamma ray attenuation parameters for new shielding materials composed of NANO ZnO blended with high density polyethylene

Alsayed, Z., Badawi, M.S., Awad, R., Thabet, A.A., El-Khatib, A.M.

Beirut Arab University & Alexandria Univeisty

Surface Defects Classification of Hot-Rolled Steel Strips Using Multi-directional Shearlet Features

Ashour, M.W., Khalid, F., Abdul Halin, A., Abdullah, L.N., Darwish, S.H.

University Putra Malaysia

The Effect of Vortex Generators on Aerodynamics for Sedan Cars

Bassem Nashaat Zakher, Mostafa El-Hadary, Andrew Nabil Aziz

City of Scientific Research and TechnologicalApplication , Alexandria university

The Modified Fractional Power Series Method for Solving Fractional Non-isothermal Reaction– Diffusion Model Equations in a Spherical Catalyst

Syam, M.I., Anwar, M.-N.Y., Yildirim, A., Syam, M.M.

UAE University , Ege UniversityTurkey