



Pharos University in Alexandria
Vice President for Graduate Studies & Research
International Ranking committee



THE Impact Ranking SDG7 Report

7

Affordable and Clean Energy





SDG 7 Affordable and Clean Energy

Pharos University in Alexandria is paying a lot of attention to the affordable and clean energy issues. This is in the form of initiatives, courses, events, projects, and cooperation agreements. The following are some examples of the university's efforts to address energy.

Affordable and Clean Energy Events

“Towards a Sustainable Tomorrow” competition

“Towards a Sustainable Tomorrow” annual competition was held at PUA’s Faculty of Engineering, under the auspices and support of Birla Carbon.

The competition was opened at 9:30 am with a speech from Prof. Dr. Muhammad Gaber Abu Ali, Dean of the Faculty of Engineering. After that, the senior students presented their competing projects Four academic departments participated in the competition, namely:

- Petrochemical Engineering Department (two projects)
- Mechanical Engineering Department (four projects)
- Electrical Engineering Department (two projects)
- Construction Engineering and Management Department (two projects)



URL: <https://www.pua.edu.eg/towards-a-sustainable-tomorrow-competition/>



Mechanical Engineering Department visits Abu Qir Power Plant

Students of the Mechanical Engineering Department visited Abu Qir Power Plant on Saturday morning, May 14, 2022.

This is part of the Thermal Power Plants Operation & Management Course and the Control and Safety of Thermal Systems course for senior students in the Mechanical Power Engineering major.

During the visit, the students learned about the different sections of the plant, namely: (steam and gas turbine room, filtration, purification and water treatment unit, boiler building, pumps room, automatic control and monitoring room).

In addition, the students compiled data and information on the control and monitoring system of the plant and all types of turbines.



URL: <https://www.pua.edu.eg/mechanical-engineering-department-visits-abu-qir-power-plant/>



Faculty of Engineering's Visit to ASPPC

Freshman students of the Basic Sciences Department and senior students of the Petrochemical Engineering Program visited Alexandria Specialty Petroleum Products Company (ASPPC).

This visit comes within the framework of the university's keenness on field training and scientific visits to various entities and bodies. These visits aim at providing the highest standards of quality and efficiency and achieving excellence. This in turn contributes in providing the students with the expertise and skills necessary to keep pace with the actual needs and requirements of the labor market.

The visit began with an introductory lecture on the history and establishment of the company. This was followed by a tour inside the production units and the different laboratories of the company, where the students were familiarized with the different control systems. The students expressed their delight with this visit and how they greatly benefited from it.

In addition, we extend our sincere thanks and appreciation to the company's Public Relations Department for their warm welcome, reception and detailed explanation as they answered all the questions and inquiries posed by the students.

This visit was sponsored by Asst. Prof. Dr. Noha Saeed and T. A. Mahmoud Abd El Aty, and was accompanied by Eng. Amr Kamal, ASPEC's Chairman and Managing Director, and Eng. Ayman Hegazy, Assistant Chairman for Engineering Affairs.





Lecture about Fuel Cells to the Petrochemical Engineering Department

In light of the significant development the world has been witnessing recently in the development and production of hybrid and electric vehicles (HEV/EV) plus the recent developments in high voltage battery technologies due to its environmental advantages, the Petrochemical Engineering Department organized a lecture on fuel cells.

This lecture was held on Monday, May 23, 2022 and delivered by Prof. Dr. Alana Al-Sahrawi, the globally-renowned figure in the field of electric and hybrid cars in the United States of America. as part of the “Energy Conservation” course.



URL:

<https://www.pua.edu.eg/%d9%85%d8%ad%d8%a7%d8%b6%d8%b1%d8%a9-%d8%b9%d9%86-%d8%ae%d9%84%d8%a7%d9%8a%d8%a7-%d8%a7%d9%84%d9%88%d9%82%d9%88%d8%af-%d9%84%d8%b7%d9%84%d8%a7%d8%a8-%d9%82%d8%b3%d9%85-%d9%87%d9%86%d8%af%d8%b3%d8%a9/>



Electrical Engineering Department visits Sidi Kerir Power Plant

The Electrical Engineering Department organized a scientific trip through visiting Sidi Kerir Power Plant of the West Delta Electricity Production Company (WDEPC). The visit was under the auspices of the Student Activities Department, and under the supervision of Prof. Dr. Mohamed Abdel Rahman, Academic Supervisor of the Electrical Engineering Department, and in the presence of Dr. Gamal Mahmoud, Head of Department's Student Activities and Lecturer of Power and Control, Dr. Mohamed El-Naqeeb, Lecturer of mechanical forces who is delegated from the Faculty of Engineering, Alexandria University, and Eng. Eman Abu Al-Khair, Teaching Assistant in the Department's Power and Control Course and member of the Student Activities Committee. In addition to the fifth year students majoring in electrical power and control.

This visit, which was on Wednesday, December 28, 2021, aimed developing the capabilities of department's graduates to meet the needs of the labor market, through linking the academic study with the practical applications. This is done through on-site visits and presence with engineers, technicians, and workers. As well as moving in and examining the plant's components, where theoretical information is being confirmed and linked with the process.

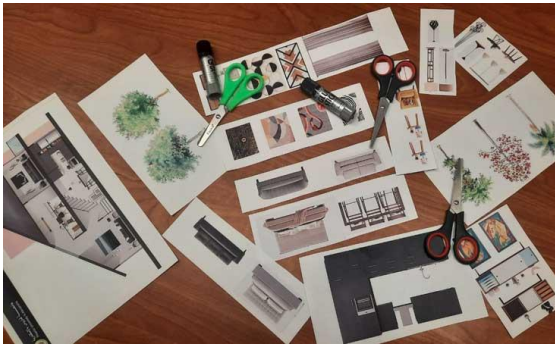


URL: <https://www.pua.edu.eg/electrical-engineering-department-visits-sidi-kerir-power-plant/>



A Student Visit to Exploratory Center for Science and Technology (Décor and Mural Design Departments)

As part of its community services and environment development activities, the Faculty of Arts and Design welcomed a second visit from a group of schools (Exploratory Center for Science and Technology) on Thursday, February 17th, 2022, under the supervision of Prof. Hana Yassen, Dean of the Faculty. Further, the Décor and Mural Design Departments organized various workshops. These workshops were run by Ass. Prof. Nermine Gomaa, Head of the Painting Dept. and Acting Department Head, Dr. Salma Youssef, Lecturer in Décor Dept. and Dr. Aya Fathi, Lecturer in Décor Dept. By the end of the visit, the students took group photos of the outputs of the workshops.



URL: <https://www.pua.edu.eg/a-student-visit-to-exploratory-center-for-science-and-technology-decor-and-mural-design-departments/>



Basic Sciences and Petrochemical Engineering Departments Visit SIDPEC

Within the framework of the Faculty of Engineering's keenness on providing field visit to its students, the Basic Sciences Department, in cooperation with the Petrochemical Engineering Department, organized a field visit to the Sidi Kerir Petrochemicals Company (SIDPEC) for the students of the pre-engineering year. The visit was under the supervision of Ass. Prof. Dr. Noha Said Ibrahim, Associate Professor, Petrochemical Engineering Department, and Dr. Aya Suleiman, lecturer, Petrochemical Engineering Department. The visit was held on Thursday, December 30, 2021 and aimed at giving the students a chance to apply what they studied in the general chemistry course.

The visit was welcomed by Eng. Mahmoud Basal, company's assistant president for production. The visit's program began with an introductory session about the company that included security and safety. Then the students listened to a detailed session about the production and manufacturing of polyethylene in the company. Later, the students visited the ethylene and the polyethylene plants.



URL: <https://www.pua.edu.eg/basic-sciences-and-petrochemical-engineering-departments-visit-sidpec/>



Protocol on Cooperation Between PUA and ANRPC

A highly-ranked delegation from Alexandria National Refine & Petrochemical Company (ANRPC) visited PUA on Wednesday, March 9th, 2022. The delegation was headed by Chem. Salah Gaber Bahnasy, Chairman and Managing Director. It also included Eng. Ghada Abdul Hameed, Technical Office Director-General, Acc. Mohammad Ali Assi, Assistant Director for Financial Affairs, Chem. Essam Qabari, Director-General of Industrial Safety, Chem. Hany Mahmoud, Director-General of Operations, Mr. Abdul Latif Nazrah, Director-General of Public Relations. The delegation was welcomed in PUA's Council Hall in 3rd floor by Prof. Dr. Mahmoud Mohy El Din, PUA's President, Prof. Dr. Ramadan Abu El Ella, Vice-President for Community Service and Environment Development, Prof. Dr. Abbas Anwar, Head of Petrochemical Engineering, Prof. Dr. Mohammad Yehia Al Mekki, Lecturer in the Faculty of Engineering, Chem. Hossam Anwar, Lecturer in Petrochemical Engineering Department, and Dr. Fathy Lecturer in Petrochemical Engineering Department.

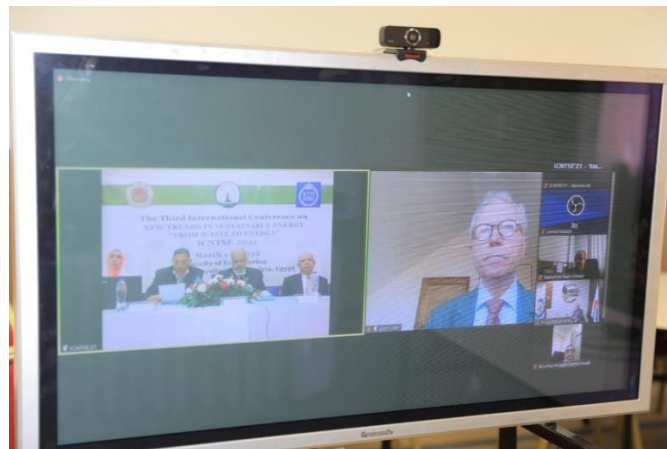


URL: <https://www.pua.edu.eg/protocol-on-cooperation-between-pua-and-anrpc/>



Third International Conference on New Trends in Sustainable Energy (ICNTSE-2021) online

PUA's Faculty of Engineering organizes the Third International Conference on New Trends in Sustainable Energy (ICNTSE-2021) on 1-2 March 2022 via online conference. It is also worth mentioning that the Journal of King Saud University – Engineering Sciences (JKSUES) will publish a special edition for a selected group of the conference's researches, which meet the journal's publishing requirements.



URL: <https://www.pua.edu.eg/third-international-conference-on-new-trends-in-sustainable-energy-icntse-2021-online/>

Third International Conference on New Trends in Sustainable Energy (ICNTSE-2021) (From Waste to Energy):

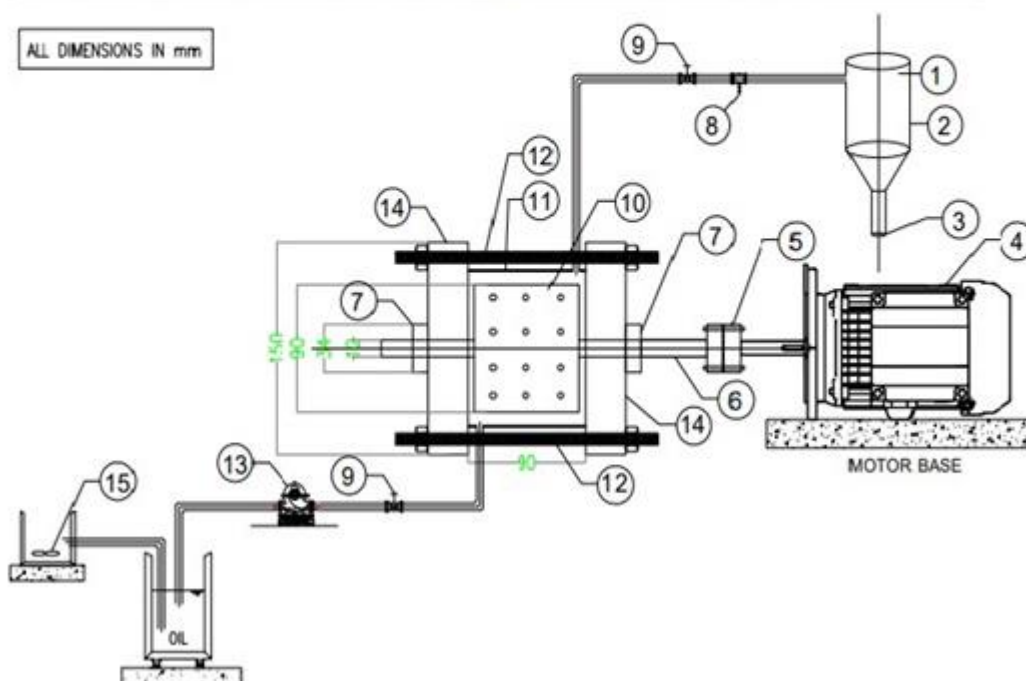
From 1-2 March, 2022 On Line

URL: <https://www.pua.edu.eg/faculty-of-engineering/conferences-2/icntse-2021/>

Production of Biojet fuel using Hydrodynamic Cavitation Reactor in Pharos University

The Petrochemicals Department at the Faculty of Engineering carried out a study aiming at designing a reactor for the production of biofuel using hydrodynamic cavitation technique. This technique is based on intensifying the rate of the reaction and the production of biofuels from non-edible oil by introducing bubbles to the liquid. A model was constructed to explain this process and validate it using experimental data. The reactor has already been implemented successfully and experiments have been conducted to test its effectiveness. This clean biofuel is considered as an alternative to fossil fuel used in industry, in aviation in addition to avoiding the negative impacts of fossil fuel combustion.

NO.	DESCRIPTION	NO.	DESCRIPTION	NO.	DESCRIPTION
01	BIO FUEL	06	MECHANICAL STAINLESS STEEL SHAFT	11	TRANSPARENT STATOR
02	SEPARATION HOPPER	07	HIGH SPEED BEARING	12	8 M THREADED BOLT WITH NUTS
03	GLYCERIN	08	SAMPLING POINT	13	PERISTALTIC PUMP
04	ELECTRIC MOTOR (3000 RPM)	09	GATE VALVE (ISOLATION)	14	FLANGE
05	FLEXIBLE SHAFT COUPLING	10	CYLINDRICAL ABSORTOR	15	MAGNETIC STIRRER



URL: <https://www.pua.edu.eg/production-of-biojet-fuel-using-hydrodynamic-cavitation-reactor-in-paros-university/>



Courses that Support Affordable and Clean Energy

No	Faculty in Pharos University	Course name	Course code	SDG of relevance
1	Engineering	Energy Systems	EE 271	SDG 7
2	Engineering	Energy conservation	EP 330	SDG 7
3	Engineering	Renewable energy and storage systems	EM 333	SDG 7
4	Mass Communication	Communication and Development	COM 103	SDG 1 - SDG 2 - SDG 7 - SDG 9 - SDG 11
5	Mass Communication	The Arts History	GEN 302	SDG 7
6	Tourism and Hotel	Tourism and Globalization	TM 472	SDG 1 - SDG 7 - SDG 8 - SDG 10 - SDG 11 - SDG 13 - SDG 16 - SDG 17
7	Tourism and Hotel	Tourism Impact and Sustainability	TM 354	SDG 1 - SDG 6 - SDG 7 - SDG 8 - SDG 11 - SDG 13 - SDG 14 - SDG 15
8	Tourism and Hotel	Resort and Condominium Management	HM 411	SDG 7 - SDG 9
9	Tourism and Hotel	Hospitality Facilities Planning&Design	HM 451	SDG 6 - SDG 7 - SDG 9 - SDG 11
10	Tourism and Hotel	Hospitality Project 2	HM 482	SDG 7 - SDG 9
11	Arts and Design	Typography (1)	GD 471	SDG 6 - SDG 7 - SDG9 - SDG 14 - SDG 15
12	Arts and Design	Typography (2)	GD 472	SDG 6 - SDG 7 - SDG9 - SDG 14 - SDG 15
13	Arts and Design	Typography (3)	GD 571	SDG 6 - SDG 7 - SDG9 - SDG 14 - SDG 15



No	Faculty in Pharos University	Course name	Course code	SDG of relevance
14	Arts and Design	Graduation Project Research	ID 581	SDG 7 - SDG 9 - SDG 11 - SDG 13
15	Arts and Design	Graduation Project	ID 582	SDG 7 - SDG 9 - SDG 11 - SDG 13
16	Arts and Design	Digital photography	TD 411	SDG 7 - SDG 9
17	Arts and Design	Television Scenery Design	TD 421	SDG 7 - SDG 9
18	Arts and Design	Theatrical Scenery Design	TD 423 - TD 424	SDG 7 - SDG 9 - SDG 12
19	Arts and Design	Audio and Visual	TD 461 - TD 462	SDG 7 - SDG 9
20	Arts and Design	Digital Character Design	TD 521	SDG 7 - SDG 9
21	Arts and Design	Sociology & Psychology of Design	TD 533	SDG 7 - SDG 9
22	Arts and Design	History of Cinema	TD 541	SDG 7 - SDG 9
23	Arts and Design	Technology of Contemporary Theater	TD 562	SDG 7 - SDG 9
24	Arts and Design	Graduation Project Research	TD 581	SDG 7 - SDG 9 - SDG 11 - SDG 12
25	Arts and Design	Graduation Project	TD 582	SDG 7 - SDG 9 - SDG 11 - SDG 12
26	Arts and Design	Interior Architecture Theories	ID 431	SDG 7 - SDG 9 - SDG 11
27	Arts and Design	Architectural Render	ID 551	SDG 7 - SDG 9 - SDG 11



Publications that Address Affordable and Clean Energy

Title	Authors	Year	Citations	Field-Weighted Citation Impact	Sustainable Development Goals (2023)
Performance evaluation of continuous solar still water desalination system	Kabeel, A.E. Abdelgaied, M. Mahmoud, G.M.	2021	21	2.93	SDG 6 SDG 7 SDG 17
LEED v4.1 operations & maintenance for existing buildings and compliance assessment: Bayt Al-Suhaymi, Historic Cairo	ElSorady, D.A. Rizk, S.M.	2020	17	2.06	SDG 7 SDG 11 SDG 12
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.	2019	16	0.72	SDG 6 SDG 7
Hybrid renewable energy/hybrid desalination potentials for remote areas: Selected cases studied in Egypt	El-Hady B Kashyout, A. Hassan, A. Hassan, G. El-Banna Fath, H. El-Wahab Kassem, A. Elshimy, H. Ranjanvepa Shaheed, M.H.	2021	12	0.48	SDG 6 SDG 7 SDG 17
Analysis of the impact of different nanoparticle metal oxides as fuel additives in compression ignition engine performance	Abdallah, A.M. Abdel-Rahman, A.A. Elwardany, A.E.	2020	11	0.73	SDG 3 SDG 7
Novel sea water desalination unit utilizing solar energy heating system	ElHelw, M. El-Maghlany, W.M. El-Ashmawy, W.M.	2020	11	1.33	SDG 6 SDG 7



Title	Authors	Year	Citations	Field-Weighted Citation Impact	Sustainable Development Goals (2023)
Oleosomes Encapsulating Sildenafil Citrate as Potential Topical Nanotherapy for Palmar Plantar Erythrodysesthesia with High Ex vivo Permeation and Deposition	Abdelalim, L.R. Elnaggar, Y.S.R. Abdallah, O.Y.	2020	8	0.87	SDG 7
Magnetohydrodynamic Fluid Flow due to an Unsteady Stretching Sheet with Thermal Radiation, Porous Medium, and Variable Heat Flux	Megahed, A.M. Ghoneim, N.I. Reddy, M.G. El-Khatib, M.	2021	6	0.73	SDG 7 SDG 9
The effect of vortex generators on aerodynamics for sedan cars	Zakher, B.N. El-Hadary, M. Aziz, A.N.	2019	6	0.5	SDG 7
Potential cardioprotective effect of octreotide via NOXs mitigation, mitochondrial biogenesis and MAPK/Erk1/2/STAT3/NF-k β pathway attenuation in isoproterenol-induced myocardial infarction in rats	Khalifa, A.A. El Sökkary, N.H. Elblehi, S.S. Diab, M.A. Ali, M.A.	2022	4	1.59	SDG 3 SDG 7 SDG 9 SDG 12
Fecal carriage of esbl-producing escherichia coli in Egyptian patients admitted to the medical research institute hospital, Alexandria University	Elbaradei, A. Maharem, D.A. Kader, O. Ghareeb, M.K. Naga, I.S.	2020	4	0.27	SDG 7
Comparative Analysis of the Desert and Green Vernacular Architecture in the Oases of Egypt	El Haridi, N.M.A. Ibrahim, M.A. Ayad, H.M. El Sayad, Z.T.	2019	3	0	SDG 7 SDG 12 SDG 17



Title	Authors	Year	Citations	Field-Weighted Citation Impact	Sustainable Development Goals (2023)
Kinetic study of the esterification of unsaturated free fatty acids	Hawash, S.A. Ebrahiem, E.E. Farag, H.A.	2019	3	0.11	SDG 7
Enhanced solar desalination units	Tayeb, A.M. Farouq, R. Shehata, A.Z. Othman, R.H.	2020	2	0.13	SDG 6 SDG 7
Production of sustainable concrete using sawdust	El-Nadoury, W.W.	2021	2	0.23	SDG 7
A Combined Framework for Demand Side Management and Power Quality Enhancement in Smart Grid under Different Distributed Energy Resource Penetration	Sardina, M.A. Abbasy, N.H. El-Gammal, M.	2021	2	1.27	SDG 7
A Comparative Study of Different Electric Vehicle Motor Drive Systems under Regenerative Breaking Operations	Elsayed, M.E. Hebala, O.M. Ashour, H.A. Hamad, M.S.	2021	2	0.7	SDG 7
Phenol Biodegradation and Bioelectricity Generation by a Native Bacterial Consortium Isolated from Petroleum Refinery Wastewater	Shebl, S. Hussien, N.N. Elsabrouty, M.H. Osman, S.M. Elwakil, B.H. Ghareeb, D.A. Ali, S.M. Ghanem, N.B.E.D. Youssef, Y.M. Moussad, E.E.D.A. Olama, Z.A.	2022	2	0.58	SDG 6 SDG 7 SDG 15



Title	Authors	Year	Citations	Field-Weighted Citation Impact	Sustainable Development Goals (2023)
New Performance Modeling Techniques for Photovoltaic Modules and Different Types of Wind Turbines	Abo-Elkhair, E. Kotb, H. Mahmoud, G.M. Abbasy, N.H. Elgammal, M.	2021	1	1.15	SDG 7
Modeling and Analysis of PMSM under Regenerative Braking Operations with Fault-Tolerant for EV/HEV Applications	Elsayed, M.E. Hamad, M.S. Ashour, H.A.	2021	1	0.35	SDG 7
Novel Photovoltaic Modules and Wind Turbine Performance Modeling Techniques Based on Artificial Intelligence and Deep-Learning	Mahmoud, G.M. Elrefaie, H.B. Elsayed, M.E. Abo-Elkhair, E.	2022	0	0	SDG 7
Open-Phase Fault-Tolerant Control Approach for EV PMSM based on Four-Leg VSI	Elsayed, M.E. Hamad, M.S. Ashour, H.A.	2022	0	0	SDG 7
Optimization of International Rating System Evaluation for Adaptive Reuse Projects	Helal, H.M. Maarouf, I. Nassar, D.M.	2022	0	0	SDG 7 SDG 11 SDG 12 SDG 13
The green roof effect on the seismic response of RC frame structures	Elhout, E.A.	2022	0	0	SDG 7 SDG 12
Power quality improvement for electric vehicle using hybrid active power filter	Gado, D.M. Abou El-Ela, A.A. Moussa, S.A.	2021	0	0	SDG 7
Hybrid energy-efficient protocol in delay tolerant networks for IoT systems	Elsaadany, A. Aboulhassan, M.	2019	0	0	SDG 7