



# THE Impact Ranking SDG6 Report

# 6

## Clean Water and Sanitation





## SDG 6 Clean Water and Sanitation

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

### Clean Water and Sanitation Events

- **Improving the Performances of Cellulose Acetate membrane for Water Desalination by doping Nano-graphene Oxide: “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)

Together, the competing projects reached 10 projects and were evaluated by a jury comprising of:

- Dr. Mona Gamal El-Din, Dean of the Faculty of Energy, Environmental and Petrochemical Engineering, Egyptian Japanese University
- Dr. Boshra Salem, Dean of Graduate Studies and Research Affairs
- Dr. Mohamed Naim Anwar, Vice Dean of the Faculty of Engineering for Education and Student Affairs
- Dr. Wael El-Maghlany, Head of the Mechanical Engineering Department, Faculty of Engineering, Alexandria University.



Further, the faculty members who supervised the graduation projects along with the competing students were honored and awarded certificates of appreciation.

At 2 pm, the results were declared and in the first place came the Petrochemical Engineering Department with a project entitled **“Improving the Performances of Cellulose Acetate membrane for Water Desalination by doping Nano-graphene Oxide”**. This project was supervised by Dr. Aya Suleiman and Dr. Ashraf Morsi, and was awarded a prize money of EGP 17,000.



Evidence URL:

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

University management plan for water conservation:

Pharos University is implementing a plan for the re-use of water in its premises:

(a) Wastewater and as per the records of the University Administration: Wastewater from washing rooms, kitchens, and laboratories are collected and channeled to a specialized company to manage the recycling process and get rid of toxic material in a safe way. The University has signed a contract with a specialized company for collection and treatment of wastewater in a sustainable way. This company was selected based on its environmental portfolio that ensures that water is reused in an environment friendly way. The company is responsible to treating water for reuse according to the quality of output, mainly in irrigating street trees in the neighborhood.



(b) Reuse of water: The University manages a process for rainwater collection and fresh water disposed from air-condition units. Both water sources are channeled and stored in a 15m<sup>3</sup> water tank for reuse in irrigation of the landscape, and the green playgrounds that reach an area of about 35200 m<sup>2</sup>. This green area has increased since last year where it was 21000 m<sup>2</sup>. With this amount of water, the green areas in Pharos University is expected to increase every year.

(c) Drinking water: Drinking water quality is maintained at the University premises by installing 3-level filters at the source inlet to purify drinking water before use by university members. The amount of freshwater reuse in the campus has decreased due to the above practices. The current average amount is about 2779 m<sup>3</sup> per month.

### Courses that Support Clean Water and Sanitation

No	Faculty in Pharos University	Course name	Course code	SDG of relevance
1	Applied Health Sciences Technology	Environmental Health	MGEH-101	SDG 6
2	Pharmacy	Instrumental Analysis	(PCD 203)	SDG 6
3	Engineering	Water and Wastewater	ES 401	SDG 6
4	Engineering	Water treatment	EP 328	SDG 6
5	Tourism and Hotel	Geography of Tourism	GEN 104_T	SDG 6
6	Tourism and Hotel	Ecotourism	TM 371	SDG 1 - SDG 3 - SDG 5 - SDG 6 - SDG 10 - SDG 11 - SDG 12 - SDG 15
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



No	Faculty in Pharos University	Course name	Course code	SDG of relevance
8	Tourism and Hotel	Safe Food Service Management	HM 434	SDG 3 - SDG 6 - SDG 12
9	Tourism and Hotel	Hospitality Facilities Planning&Design	HM 451	SDG 6 - SDG 7 - SDG 9 - SDG 11
10	Arts and Design	Motion Graphics (1)	MA 323	SDG 1 - SDG 6 - SDG 8 - SDG 11
11	Arts and Design	Typography (1)	GD 471	SDG 6 - SDG 7 - SDG 9 - SDG 14 - SDG 15
12	Arts and Design	Typography (2)	GD 472	SDG 6 - SDG 7 - SDG 9 - SDG 14 - SDG 15
13	Arts and Design	Typography (3)	GD 571	SDG 6 - SDG 7 - SDG 9 - SDG 14 - SDG 15
14	Arts and Design	Graduation Project Research	GD 581	SDG 6 - SDG 8 - SDG 11 - SDG 12 - SDG 13
15	Arts and Design	Graduation Project	GD 582	SDG 6 - SDG 8 - SDG 11 - SDG 12 - SDG 13
16	Arts and Design	Digital Photography (2)	GD 462	SDG 1 - SDG 6 - SDG 8 - SDG 11 - SDG 14 - SDG 15
17	Arts and Design	Digital Advertising Design	GD 522	SDG 3 - SDG 6 - SDG 13 - SDG 14 - SDG 15



## Publications that Address Clean Water and Sanitation

Title	Authors	Year	Citations	Field-Weighted Citation Impact	Sustainable Development Goals (2023)
Chitosan based adsorbents for the removal of phosphate and nitrate: A critical review	Eltaweil, A.S.   Omer, A.M.   El-Aqapa, H.G.   Gaber, N.M.   Attia, N.F.   El-Subruiti, G.M.   Mohy-Eldin, M.S.   Abd El-Monaem, E.M.	2021	74	3.66	SDG 6   SDG 9   SDG 14
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
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.   Abdel-Fattah, T.M.	2019	21	1.04	SDG 6
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
Framework of nano metal oxides N-NiO@N-Fe <sub>3</sub> O <sub>4</sub> @N-ZnO for adsorptive removal of atrazine and bisphenol-A from wastewater: Kinetic and adsorption studies	Allam, E.A.   Ali, A.S.M.   Elsharkawy, R.M.   Mahmoud, M.E.	2021	16	1.88	SDG 6
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 Kasseem, A.   Elshimy, H.   Ranjanvepa   Shaheed, M.H.	2021	12	0.48	SDG 6   SDG 7   SDG 17



Title	Authors	Year	Citations	Field-Weighted Citation Impact	Sustainable Development Goals (2023)
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
Assessment of spatiotemporal patterns of social vulnerability: A tool to resilient urban development Alexandria, Egypt	Waly, N.M.   Ayad, H.M.   Saadallah, D.M.	2021	11	1.84	SDG 1   SDG 6   SDG 8   SDG 11   SDG 13   SDG 17
The combined effects of multisized silver nanoparticles and pulsed magnetic field on <i>K. pneumoniae</i>	El-Khatib, A.M.   El-Kaliuoby, M.I.   Elkhatib, M.   Khalil, A.M.	2019	10	0.83	SDG 3   SDG 6
Synthesis of hexagonal nanozinc by arc discharge for antibacterial water treatment	Khalil, A.M.   El-Khatib, A.M.   El-Khatib, M.	2019	9	0.51	SDG 6   SDG 9
Response surface methodology for optimization of photocatalytic degradation of aqueous ammonia	Farouq, R.   Abd-Elfatah, M.   Ossman, M.E.	2018	8	0.08	SDG 6
Water treatment from MB using Zn-Ag MWCNT synthesized by double arc discharge	Aljohani, F.S.   Elsafi, M.   Ghoneim, N.I.   Toderas, M.   Sayyed, M.I.   Mohafez, H.   Islam, M.A.   Khandaker, M.U.   El-Khatib, M.	2021	7	0.83	SDG 6
Improved anti-biofouling resistances using novel nanocelluloses/cellulose acetate extracted from rice straw based membranes for water desalination	Morsy, A.   Mahmoud, A.S.   Soliman, A.   Ibrahim, H.   Fadl, E.	2022	7	1.77	SDG 6
Optimized Degradation of Eosin Dye Through UV-ZnO NPs Catalyzed Reaction	Farouq, R.   Ismaeel, E.K.   Monazie, A.M.	2022	3	1.01	SDG 6



Title	Authors	Year	Citations	Field-Weighted Citation Impact	Sustainable Development Goals (2023)
Adsorption study of bisphenol-A and chlorpyrifos onto nanobentonite intercalated with magnetite and sodium alginate: kinetics and isotherm models	El-Sharkawy, R.M.   Allam, E.A.   Ali, A.S.M.   Mahmoud, M.E.	2022	3	0.83	SDG 6
New Sustainable Agenda for Slums Future Expansion, Case-Study: Ezbiit El-Matabea, Alexandria, Egypt	Ragheb, R.A.   Barakat, P.N.	2022	2	0.51	SDG 3   SDG 6   SDG 11   SDG 17
Enhanced solar desalination units	Tayeb, A.M.   Farouq, R.   Shehata, A.Z.   Othman, R.H.	2020	2	0.13	SDG 6   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
Use of hydrazide derivative of poly methylacrylate for the removal of cupric ions from solutions	Mahmoud, A.   Nassef, E.   Salah, H.   El-Taweel, Y.	2020	1	0.06	SDG 6
Investigation of Biosurfactants Production from Petroleum Oil Wastes Using Response Surface Methodology	Tayeb, A.M.   Mostafa, N.A.   Olfat, M.A.   Farouq, R.   Monazie, A.M.	2022	0	0	SDG 6
Recycling of Conditioned Alum Sludge Use as an Adsorbent for Decolorization of Effluents From the Textile Industry	Tayeb, A.   Abdelmoez, W.   Farouq, R.   Gedawy, H.	2022	0	0	SDG 6   SDG 9   SDG 12





Title	Authors	Year	Citations	Field-Weighted Citation Impact	Sustainable Development Goals (2023)
Effect of PEG on structure and physical properties of PVA/CMC nanofiber	Nabat, K.Y.   Farag, H.   Ossman, M.E.   Taha, M.   Taha, N.A.	2021	0	0	SDG 6
Treatment by agricultural by-products of Industrial effluents polluted with heavy metals	Tayeb, A.M.   Farouq, R.   Mahmoud, M.A.   Daher, A.M.   Amer, T.E.   Magdy, Y.H.	2022	0	0	SDG 6   SDG 11   SDG 12
Characterizing Ecosystem Services to Human Well-Being in Groundwater Dependent Desert Environments	King-Okumu, C.   Abdelkhalek, A.   Salem, B.	2021	0	0	SDG 6   SDG 17