https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5936&catid=21&lang=ar-AA

A Project for installing and operating photovoltaic Solar Plant at the university Administration building

Alexandria University adopted a using solar energy as an electricity supplement source using renewable energy.

The project objectives is for project of "supplying, installing and operating the photovoltaic solar plant with a capacity of 20.1 kW to be installed on the roof of the administration building . The project was implemented in coordination with the Arab Renewable Energy Company, in 2020, with a total value of 300,000 (three hundred thousand pounds only). The project duration is for 4 month .It is currently producing about 8% of the total monthly energy consumption of the administration building which consumes about 255 kW / month

- Energy reviews per Faculty							
Paper packages	Solar- Liters	Petrol - leters	Gas - Meter cubed	water-use -Liters	Electricity - Kwatt/HR	Faculty	م
3237	1350	1550	0	5836	238855	Law	1
4000	0	3000	0	14030	275000	LIterature	2
1774	0	4884	0	19233	7906	Commerse	3
2000	5000	10000	1293	86361	274701	SCience	4
7385	0	1666	0	65605	647408	Medicine	5
2500	360	1820	1034	15436	500101	Pharmacy	6
4295	0	8640	22	41871	1100585	Engineering	7
1429	0	8710	3700	99534	1731321	Agriculture	8
575	0	2000	0	1386	97237	Institute of Public Health	9
2136	2000	2500	0	1677	1677	Education	10
1335	245	1126	0	27326	16327	Dentistry	11
3881	400	750	0	73621	229780	Instituteof Medical Rsearch	12
500	2850	2526	0	81755	210716	Vetreneay Medicine	13
650	-	260	-	8313	949	Instotute of Graduate Studies and reserch	14
820	0	957.75	0	3052	400	Tourism	15
1124	0	40	0	23451	4842	Fine arts	16
1000	60	2500	0	89994	455160	Physical Education-boys	17
899	0	1000	0	48209	604725	Physical Education Girls	18
695	520	210	1022	11263	174272	Agriculture- Saba Pacha Branch	19
2888	0	70	0	22263	242764	Nursing	20
450	0	1000	0	3248		Specific education	21
664	0	3920	0	2954		Kindergaten	22
3674	0	0	0	12880	291115	University Administration building	24
47911	**12785**	**59129.75**	**7071**	**759298**	**7105841**	Total	

https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5932&catid=21&lang=ar-AA

Alexandria University – A Green University

Alexandria University is a pioneering University in changing many societal and environmental beliefs and practices that could negatively affect climate changes and carbon emissions. It has an important role in as a leader university and is committed to participate to developing environment friendly infrastructure, arranging universities according to sustainable development processes and adherence to green environment standards.

The university took an initiative towards to implement the state's general policies launched to ensure the role of universities to implement sustainability and a green environment through the university's unity and activities and the product of scientific research and its application.

The implementation green university is in line with of the goals of the United Nations to achieve true sustainable development, whether for the university community or the surrounding community. It is also in line with Egypt's 2030 Sustainable Development Plan and is compliant with the recommendations of the United Nations on the necessity of campus sustainability.

Sustainability indices for green universities is based on 10 basic axes that represent the basic concepts of the principles of preserving the environment, sustainability, environment friendly infrastructure and fulfilling the standards for both energy, climate exchange, waste management, water management, internal transport, environmental quality, and sustainability compliance with environmental laws and legislation.

Alexandria University adopted a set of integrated standards on strategies, tools and resources that the university should adopt and use in order to achieve the principle of sustainability. Such standards should bring about a positive change on the environmental aspect of the university campus, its buildings, reduce environmental impacts, work to reduce the environmental footprint of Alexandria University and raise the positive environmental footprint of the university.

Green economy as a context of sustainable development is one of the important tools available to achieve the areas of development, and it contributes to eliminating waste of resources, achieving economic growth, promoting social inclusion, improving human conditions, creating job opportunities and providing decent work for all. At the same time, this will ensure the sustainability of ecosystems' goods and services and a clear understanding of the interdependence between environmental sustainability and good political practices and effective institutional mechanisms, so that this will be decisive criteria for setting an effective national policy and making a fundamental contribution to the international efforts to achieve sustainable development.

Foundation of a green university has the following objectives:

- spreading the culture of sustainability in Egyptian universities.
- To contribute to having environment friendly buildings in Alexandria University
- Promote university-led social change in relation to sustainability goals.
- Contributing to achieving global goals for preserving the environment.

The criteria to achieve the principle of green sustainability in Alexandria university are as follows:

1. Energy and Climate Change (EC). Using solar energy as a clean source of electricity as an alternative to electricity based on fuels.
2. Providing green spaces on campus.
3. Transfer within the university. Adopting means of transportation inside and outside the university campus for students, staff and faculty members that do not pollute the environment.
4. Waste Management (WS).
5. Water (WR).

Smart Green University Proposal Indicators:

1. Energy and Climate Change (EC)

According to this indicator, solar energy is relied on as a clean and renewable source of electricity instead of relying on traditional sources of electric energy that depend on fossil fuels and pollute the environment. In this context, we suggest:

- The use of lighting poles inside the university campus equipped with solar cells for night lighting.
- Putting solar energy cells on the roofs of buildings inside the campus to provide those buildings with electric energy during work periods.
- Supplying cafeterias on campus with solar energy cells to generate electricity instead of the traditional sources of electric energy
- Adopting the use of LED lighting that save electrical energy inside the campus buildings instead of the traditional lighting that use more electrical energy.

- Taking into account the use of devices that help to save electricity as much as possible on the campus.
- Establishing a mechanism to save the use of electric energy inside the university campus that ensures the ideal use of electric energy inside the classrooms, as well as administrative

offices during non-working hours, to prevent energy waste and achieve optimal use of it while continuing to maintain the efficiency of the educational process.

- Adopting the concept of the smart building in order to accommodate the use of all devices energy saving which means using internet-connected technology, as an integral part architecture engineering to monitor and control structural design elements to share information between users, systems and buildings.

2. Providing green spaces on campus

Designing open spaces inside the university campus in a way that provides the largest possible amount of green spaces and trees, which would reduce the rate of carbon dioxide emissions resulting from activities on the campus.

3. Transfer within from /to the University university

The transportation system plays an important role on the level of carbon emissions and pollution sources in the university. The transportation policy encourages reducing the number of cars in universities, and the use of campus buses and bicycles which collectively create a healthy environment. Also, this policy encourages students, staff, and faculty to walk around, and to avoid using private cars. The use of environmentally friendly public transportation will reduce the carbon level on campus.

- Providing bicycle parking in suitable spaces allows students and workers to use them to move within the university campus effectively as an alternative to traditional means of transportation.
- Providing mass transportation (buses) for staff and faculty members to travel to and from the university campus instead of using private cars as a single means of

transportation, which will reduce carbon dioxide emissions.
- Adopting the state's initiative to provide bicycles announced by the Ministry of Youth and Sports under the slogan "Your bicycle is Your Health" for students and workers with supported prices to expand the base for practicing sports and play sports a lifestyle

4. Waste Management (WS)
According to this indicator, a policy is adopted to recycle waste by separating it from the source into four types:

- Organic waste and food residues.
- Plastic waste and plastic bags.
- Mineral waste and carbonated water cans.
- Paper waste

This allows for the recycling and utilization of as much of that waste as possible instead of disposing of it in landfills, which will eventually lead to its burning and the consequent pollution of the environment and the increase in emissions of greenhouse gases.

Alexandria University adopted a mechanism for healthy food and beverage within university dorms (providing healthy, balanced foods, a mechanism for packaging food and drinks, storing them, and a mechanism for maintaining a healthy atmosphere for dining places on campus).

5. Adoption of a preservation mechanism for water.

Water use in the campus is an important indicator in the sustainability scale. The aim is to urge universities to reduce water use, increase water conservation programs, and protect the environment.

The steps taken are: a water conservation program, a recycling program Water, Using Water-Saving Equipment, and Treating Wastewater . This was carried out through:
- Water-saving appliances are used instead of traditional appliances. This indicates the extent to which water-saving devices are used (for example, using a sensor-controlled automatic hand washing faucet, and highly efficient bathroom appliances.
- Supplying water taps with water saving units.
- Adopting a mechanism for maintaining water pipes to prevent waste resulting from leaks.

• Adopting plans and mechanisms to maintain the university's internal supply networks and taps to prevent water wastage.
• Providing a wastewater treatment plant in the university to make it suitable for irrigation of green spaces and gardens located within the university campus

Alexandria University project on using LEDs as energy-efficient bulbs (2019-2021)

Within the framework of the university's keenness to transform into a green, environmentally friendly university that works to enhance its resources and rationalize energy consumption, the Department of Community Service and Environmental Development has launched a project for the total transformation of the use of LED bulbs instead of the fluorescent ones. The light-emitting diode (LED) bulbs are more efficient and energy-saving compared to fluorescent bulbs, with a relatively longer life span.

The project has been implemented in phases since 2019 based on the preparation of an inventory of the total needs of numbers for all faculties and institutes of the university. The first quarter of the numbers required for the total transformation, which represents the types of 60 cm, 120 com and 9 watts' bulbs, has been spent and installed. In parallel, appropriate measures were taken to dispose of the lost fluorescent lamps through one of the companies concerned with safe disposal.

During the current phase we are processing the second step of purchasing around of 37% of the total needs of the university faculties and institutes.

The table below summarizes the total number of LEDS bulbs that are required for complete transformation into using green energy source

along with the percentage of the bulbs that were already replaced over the last two years.

	60 cm	120 cm	9 watts
The total number required	39198	30799	5190
The number replaced	10142	9874	1678
Percentage of replaced bulbs	28%	34.3%	32%

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RE-NF-MSF

Innovative Renewable Energy (RE) Driven - Multi Stage Flash (MSF) System with Salts Precipitator and Nano Filtration (NF) Feed Water pre Treatment.

Project # C2-S1-148

Arab Republic of Egypt
Research, Development & Innovation (RDI) Program

Egypt and the surrounding MEDA and other regional countries have exceeded the so called water poverty level. The per capita water resources, in Egypt for example, dropped from 1123 m^3/y to 794 m3/y in the period from 1990 to 2005 and expected to drop to 500 - 600 m^3/y in 2025 giving a drop of around 51%. The situation is not better in the other nearby courtiers in MENA, MEDA and EU.

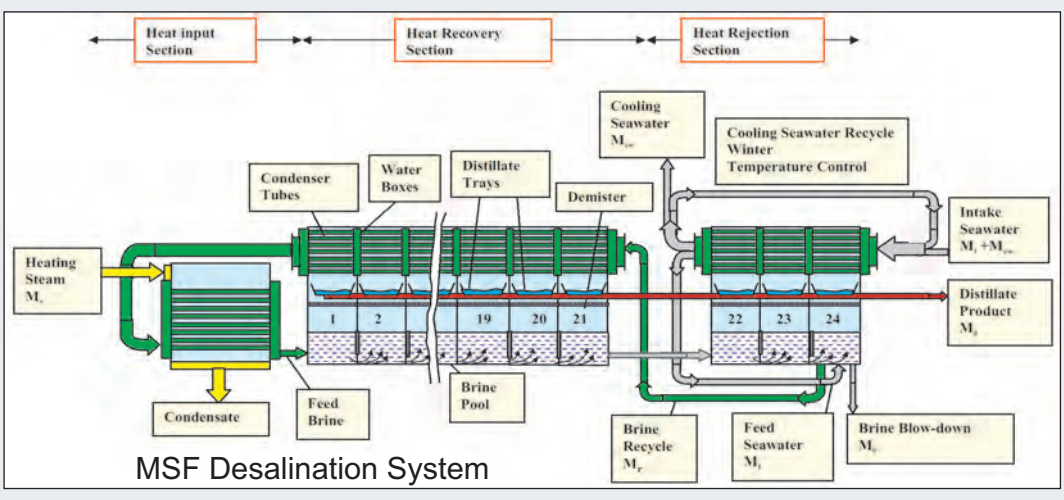
Desalination has become a promising alternative and viable way to shrink the deficit in fresh water supply and has been adopted by 120 countries in the world. Luckily, Egypt and many MEDA countries enjoy a relatively high intensity Renewable Energy (RE) resources (solar & wind). Matching RE with desalination systems present a real challenge, and are the field of this project.

On the other hand, Multi Stage Flash (MSF) has proven to be the most reliable thermal desalination technology and dominates the thermal desalination market. MSF performance and economy can be more superior if the Top Brine Temperature (TBT), which is limited by scale deposits, is increased.

The use of salts precipitators (crystallizers), high TBT anti scalant, and Nano Filtration (NF) for feed water pre treatment can improve the systems performance by removing the divalent and mono-valent ions. This will, therefore, reduces both soft and hard scales which lead to reduction in specific Capital (CAPEX), Operational (OPEX) and water production costs.

The project aims at developing an innovative RE (solar-wind) system integrated with High Performance Multi Stage Flash (MSF) units using salts precipitator & Nano Filtration (NF) for feed water pre-treatment and Cooling Tower (CT) for heat sink. The concentrated brine reject from NF & MSF will be crystallized for salts/minerals recovery, as by-product and leading to near zero brine discharge.

Macroscopic and microscopic analyses will be conducted for the new (RE-NF-MSF) system components. Pilot test unit(s) will be designed and constructed to verify the innovative system performance. Conceptual design of a cost effective "Autonomous Commercial" RE-NF-MSF system of 5000 m^3/day water production capacity will be developed. The targeted performance are; i- Gain Output Ratio >= 15, ii- Specific power consumption of < 2.5 kWh/m^3, and iii- reduction in CAPEX, OPEX. The tools, results, patents and experience will be disseminated to stack holders, investors and companies to support the project sustainability.



MSF Desalination System

Overall project objectives

1. Provide industry with the conceptual design of commercial desalination unit to support the future business plans of SME/SMI and encourage stack holders, investors, companies and utilities to invest in green energy and desalination,
2. Support the development of remote areas and new areas (far from the Nile) through developing a Renewable Energy (RE) Driven water production system to help the population re-distribution and create more job chances, and minimize the internal (and across boarder) migration.
3. Increase the communication & exchange of experience between industries and universities, NGOs and R&D centers and as well as MEDA-EU specialists in water production field using green energy.

Specific objective: Develop the conceptual design of an innovative, high performance, cost effective, and of (near) zero brine discharge "Autonomous Commercial" MSF desalination unit, of 1.0 MIGD (5000 m3/d); named as RE-NF-MSF.

Target group(s): SME/SMI, Community Based Organization, Local authorities, NGOs, Migrants

Final beneficiaries: Industry, Water Supply and Sanitation, Energy, Tourism, General Environmental Protection, Promotion of Development Awareness

Total duration: 18 months starting 21st Oct. 2009

Main activities

1. Comprehensive literature survey, state of art, analysis, and designs of the RE-NF-MSF Integrated system,
2. Develop RE design tool(s) & study on the transient behavior of the RE system on the MSF design & operational performance,
3. Develop a techno-economical computer program for the "Macroscopic" Design & Performance Analysis of the developed NF-MSF system,
4. Develop a CFD computer program & Salts precipitation & recovery modes for "Microscopic" design and performance analysis of developed system. Techno-economical study of the effect of salts precipitators and NF on seawater properties and the recovered salts/ minerals,
5. Construct a pilot test unit to study; i- NF& scale inhibitors testing in MSF, ii- study NF / crystallizer performance, and iii- CFD program verification,
6. Develop the Conceptual Design of a cost effective "Commercial" RE-NF-MSF unit of 1.0 MIGD (5000 m3/d) capacity, of (near) zero brine discharge
7. File patent(s), publish paper(s) and disseminate the results to stack-holder to apply the system in a large scale. Sell the project outcomes for the project sustainability.

w w w . r e - n f - m s f - p r o j e c t . c o m

Project Partners

- Alexandria University (Applicant)
- Tafila Technical Univ. (TTU), Jordan MEDA Partner)
- Clear Water Solution (CWS), Industrial Partner
- Egyptian association for Water & Energy (EWE), NGO Partner

Management Team

- Prof. Hassan El-Banna Fath (PI) / h_elbanna_f@yahoo.com
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- Eng. Ahmed T Hashim (EWE) / a_t_hashim@yahoo.com

EU-Egypt Innovation Fund
Research, Development and Innovation Programme

RE-NF-MSF

تطوير منظومة مبتكرة لتحلية المياه
بالتبخير الوميضى متعدد المراحل ، تستخدم مرسبات الأملاح ،
وأغشية النانو للمعالجة الأوليه ،وتدار بالطاقة المتجددة

Project # C2-S1-148

جمهورية مصر العربية
برنامج البحوث والتنمية والإبتكار

تجاوزت كل من مصر ودول حوض البحر المتوسط وبعض دول المنطقة الأخرى ما يسمى بحد الفقر في المياه. و لقد انخفض المخزون الإحتياطي من المياه في مصر من ١١٢٣متر مكعب عام إلى ٧٩٤ متر مكعبعام في الفترة من ١٩٩٠ حتي ٢٠٠٥ ومن المتوقع أن ينخفض إلى ٥٠٠ – ٦٠٠ متر مكعب عام في عام ٢٠٢٥ ويمثل هذا الإنخفاض حوالي ٥١% من المخزون كما أن الوضع ليس بالأفضل في دول الإتحاد الأوروبي والشرق الأوسط.

ولذلك أصبحت عملية تحلية المياه في الأونة الأخيرة أحد البدائل الهامة والحيوية والوسيلة الواعده لتجاوز أزمة نقص مياه الشرب و لقد تم تطبيقها في أكثر من ١٢٠ دولة في العالم.

تتمتع مصر ودول حوض البحر المتوسط بكثرة مصادر الطاقة المتجددة مثل الرياح والشمس وهي من أكثر الطرق الأمنة لإستخدامها في عمليات تحلية المياه ويمثل هذا النظام تحدياً حقيقياً وهو ما نسعى إلى تحقيقه. ومن الناحية الأخرى أثبت التبخير الوميضي ذو المراحل المتعددة أنه من أكثر التقنيات المستخدمة في تكنولوجيا التحلية الحرارية ويهيمن على سوق عمليات التحلية المختلفة خاصة إذا زادت درجة الحرارة العليا لمحلول الملح والتي تتحكم في نسبة الأملاح المترسبة.

إن استخدام مرسبات الأملاح والتحكم في درجة الحرارة العليا لمحلول الملح مع وجود مضاد للتكلس والمعالجة الأولية بأغشية النانو لمصادر التغذية الأولية يحسن من الأداء وذلك لإزالة الأيونات الأحادية والثنائية التكافؤ، وهذا بالتأكيد يقلل من تكوين التكلسات الصلبة والهشة والتي تؤدي إلى إنخفاض النفقات الرأسمالية والعملية وتكاليف إنتاج المياه الصالحة للشرب.

يهدف هذا المشروع إلى تطوير وإنتاج مياه صالحة للشرب عن طريق استخدام منظومة حديثة تتكون من الطاقة المتجددة وإستخدام التبخير الوميضي المتعدد المراحل ومرسبات الأملاح مع أغشية النانو للمعالجة الأولية للمياه المستخدمة (التغذية) وبرج التبريد.

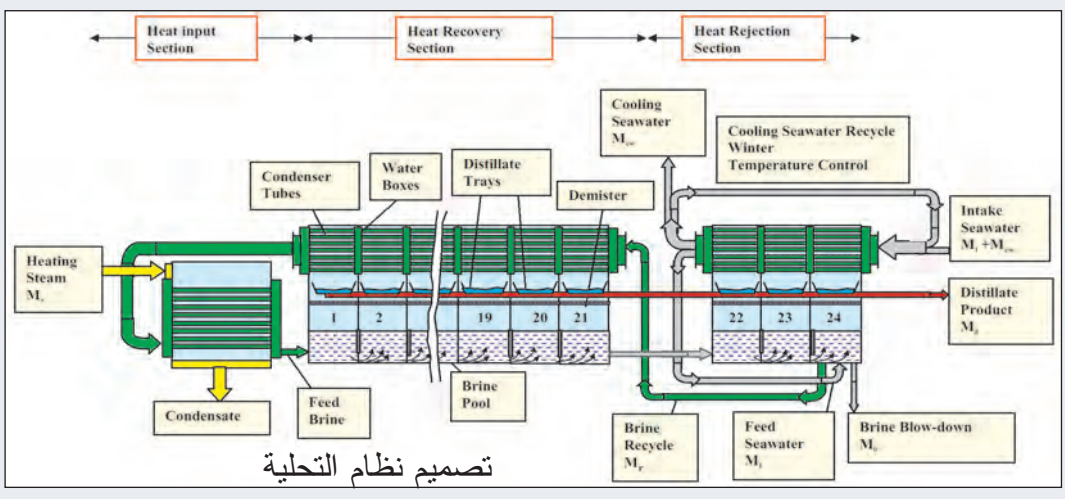
إن محلول الملح المركز المتبقي من هذه العملية يمكن بلورته لإسترجاع الأملاح كمنتج ثانوي وترك المحلول المتبقي خالياً من الأملاح.

سيتم إخضاع منتجات هذه المنظومة سواء الأولية أو الثانوية إلي عدد من التحاليل وذلك للتأكد من سلامة الأداء.

يتم تصميم وإنشاء الوحدة الاختبارية لكي تحقق الأداء الأمثل لهذه المنظومة وفي مرحلة متقدمة سيتم وضع التصميم لوحدة تحلية تجارية بطاقة ٥٠٠٠ متر في مكعب اليوم من المياه الصالحة للشرب وهذه الوحدة سوف تهدف إلى:

- تكون نسبة المخرجات اكبر من او تساوي 15
- إنخفاض التكاليف الرأسمالية والإنتاجية
- أقل إستهلاك للطاقة

أهداف المشروع الرئيسية:



تصميم نظام التحلية

إمداد الصناعة بنموذج تصميم تجريبي
١. لتحلية المياه يدعم الخطط المستقبلية و يشجع المستثمرين و الشركات و حاملي الأسهم و شبكات التوزيع بالاستثمار في الطاقة الخضراء و عملية التحلية.
٢. دعم تطوير و استصلاح المناطق النائية و البعيدة عن نهر النيل من خلال صناعة تحلية تستخدم الطاقة المتجددة مما يساعد على إعادة توزيع الكثافة السكانية و توفير فرص عمل مع الحد من الهجرة الداخلية و الخارجية.
٣. دعم و زيادة التعاون و تبادل الخبرات بين الصناعة و الجامعات و الجمعيات الأهلية و مراكز الأبحاث.

هدف متميز:
تطوير نموذج تصميم خلاق عالي الأداء ، اقتصادي و شبه منعدم الفضلات" و ذلك بتطوير منظومة مبتكرة لتحلية المياة بالتبخير الوميضى متعدد المراحل ، تستخدم مرسبات الأملاح ، وأغشية النانو للمعالجة الأولية ،وتدار بالطاقة المتجددة .

الجهات المستهدفة: الصناعات الصغيرة و المتوسطة، المنظمات المجتمعية، المحليات، الجمعيات الأهلية، المهاجرين.

المستفيدين النهائيين: الصناعة / جهات الإمداد بالماء و الصرف / السياحة / الحماية العامة للبيئة / تطوير الثقافة العامة عن الموضوع.

مدة المشروع : ١٨ شهرا شهرا تبدأ ١٨ يولية ٢٠٠٩

ألانشطة الرئيسية:
١. مسح، دراسة و تحليل تصميم وحدة التحليم المدمجة.
٢. تطوير ادوات طاقة متجددة مع دراسة تأثيراستخدام وحدة الطاقة المتجددة على تصميم و تشغيل واداء نظام التحلية.
٣. تطوير برنامج حاسب آلي اقتصادي لتحليل تصميم و اداء نظام التحلية الذي تم تطويره.
٤. تطوير برنامج حاسب آلي لتحليل الاملاح المترسبة و دراسة التصميم المجهري وتحليل اداء النظام المطور مع الدراسة التقنواقتصادية لأثار مترسبات الاملاح و الفلترة المجهرية على خواص مياه البحر و الاملاح و المعادن المسترجعة.
٥. عمل نموذج اختباري لدراسة اغشية النانو و موانع التكلس في وحدات التبخير الوميضي. دراسة اغشية النانو مع اداء البلورة و اخيرا دراسة حسابات ديناميكة السوائل للمشروع.
٦. تطوير نموذج مبدئي للتبخير الوميضي بسعة ٥٠٠٠ متر مكعب يوميا شبه منعدم الفضلات.
٧. عمل براءات اختراع و نشر اوراق بحثية و توزيع نتائج المشروع على المهتمين لتطبيق النظام على نطاق واسع مع تسويق نتائج المشروع لدعم الاستمرارية.

w w w . r e - n f - m s f - p r o j e c t . c o m

الشركاء

- جامعة الأسكندرية / الشريك الأساسي
- جامعة الطفيلة التقنية-الأردن- شريك المنطقة الجغرافية
- المصرية السويسرية لتكنولوجيا المياه النقية- شريك الصناعة
- الجمعية المصرية للمياه و الطاقة - جمعية اهلية

ادارة المشروع

- استاذ دكتور/ حسن البنا فتح – الباحث الرئيسي–جامعة الاسكندرية
- دكتور/ أسامة السمني –الباحث الرئيسي المشارك – جامعة الاسكندرية
- استاذ دكتور/ بشرى سالم – مدير تنفيذي – جامعة الأسكندرية
- استاذ دكتور / مدحت سرور – الاستشاري التقني
- دكتور ايمن الرواجفة (جامعة الطفيلة التقنية)
- مهندسة بهجة بكر (المصرية السويسرية لتكنولوجيا المياه النقية)
- مهندس أحمد هاشم (الجمعية المصرية للمياه و الطاقة)

Conference on “Role of Engineering Towards Better Environment” RETBE’21

Towards achieving the 2030 vision, the Faculty of Engineering at Alexandria University is hosting the 12th International Conference “Role of Engineering Towards Better Environment” RETBE’21. The theme of the conference this year will be “Vision 2030: Engineering Challenges in the Midst of the Pandemic”.

The conference will be held from 20 to 22 December 2021 in Alexandria, Egypt. It continues to uphold the mission of the preceding successful series of RETBE conferences that started over 20 years ago, emphasizing the challenges facing the environment and the need for innovative actions and policies.

RETBE’21 conference is to bring together innovative Academia, Industry and Government in the fields of: Engineering, Technology and Environment to a common platform where researchers, scientists, and engineers can exchange their findings with global experts and officials.

Within the 2030 vision, the conference provides attendees and participants with the opportunity to share their experiences and ideas with peers from various parts of the world with the purpose of helping delegates to foster business and research relations for collaboration in the future

AGENDA

Day 1: Monday, December 20th, 2021		
08:30 am	Registration (all day)	**Faculty of Engineering**
09:00 am - 10:45 am	Opening Ceremony: **Prof. Rawya Kansoh**, Conference Coordinator, Faculty of Engineering, Alexandria University **Prof. Essam Wahba**, Vice Dean, Faculty of Engineering, Alexandria University **Prof. Said Allam**, Dean, Faculty of Engineering, Alexandria University **Prof. Abdelaziz H. Konsowa**, President, Alexandria University	**Hall A1**
11:00 am - 12:00 pm	**Keynote Speech** Water Scarcity Research and Education in the Eras of Climate Change and Sustainable Development **Prof. Hani Swelliem**, RWTH Aachen University, Germany	**Hall A1**
12:00 pm - 01:00 pm	**Coffee Break**	**SSP Building 1st floor**
01:00 pm - 01:15 pm	**Delta Building Systems**	
01:00 pm - 03:00 pm	Panel Discussion hosted by RETBE'21 **Climate Change and Global Warming « Getting ready for UN COP 27 »** Session Moderator: Prof. Rawya Kansoh, Faculty of Engineering, Alexandria University	**Hall A1**

Technical Virtual Meetings via ZOOM Coordinators: Dr Yousry Taha, Dr Dina Elgayar		
04:00 pm - 05:30 pm	Session #1: **Water Issues** *Chair Person: Prof. Haytham Awad *Co-chair: Dr Mohamed R. Torkomany **Meeting ID: 976 2365 8279** **Password: RETBE21**	Session #2: Sustainable Urbanism *Chair Person: Prof. Hassan K. Abdel Salam *Co-chair: Dr Dina Saadallah Meeting ID: **860 7787 8928** **Password: RETBE21**
	Critic comparative analysis approach for Alexandria port – Alexandria city – Egypt, **Mona Sayed Seifelislam, Amira. A Fathi, Ali Bakr.**	Assessment of Livability in the Urban Built Environment in Alexandria, Egypt, **Heba M. Affara, Hany M. Ayad, Dina M. Saadallah.**
	Assessment of The Long-Term Shoreline Changes of El Alamein Coastal Area, Egypt, **Ahmed Slama. Elstohey, Maysara Khairy El-Tahhan, Walid E. Reda, Hossam M. Moghazy.**	Coastal Cities' Blue-Green Infrastructure Model (BGIM) The Case of New El-Alamin City, Egypt, **Tasneem Amr, Asmaa Hassan, Khalid El Hagla.**

	Risk management and cost analysis of treated wastewater reuse: Proposal for the New Al-Alamein city, Egypt, **Sara AbdelMoula, Mohamed T. Sorour, Samia A. Aly.**	Creating Sustainable Cities: Biomimicry as Conducive Approach, **Sherouk Seif, Walid abdelal, Ali Bakr**
	The Performance of Novel Draw Solutions in Brackish Water Desalination Using Forward Osmosis, **T. M. Zewail, M.A. Dawod, S. M. Abd Elrazik, S.E. Elalfy, M. A. Saad, El-Sh. Ibrahim**	The Influence of Urban Economics on The Growth of Historic Cities (Case Study: Alexandria), **Rahma Hassan, Hassan Abdel Salam, Asmaa E. Hasan**
		Effects of Vertical Densification on the built environment in the city of Alexandria, **Walaa Khaled Helal, Dina M. Saadallah, Dina Taha.**
06:00 pm - 07:30 pm	Session #3: **Renewable Energy** *Chair Person: Prof Wael Elmaghlany *Co-chair: Dr Mohamed Elhelw **Meeting ID: 922 7832 3650** **Password: RETBE21**	Session #4: **Sustainable Architecture** *Chair Person: Prof Dina M. Nassar *Co-chair: Dr Ingi A. El Cherif **Meeting ID: 835 5232 7943** **Password: RETBE21**
	Can Egypt achieve its target of 20% of electric energy from renewables by 2022? **Tarek ElShennawy.**	Architectural Programming and physical Sustainability: Optimizing Adaptability in the Pre-Design Phase, **Sarah Essam, Hassan Abdel Salam, Asmaa E. Hasan**
	Optimization of Green Hydrogen Utilization for Power Generation and Liquefaction for Export, **A. Saleh, D. AbulMaaty, M. Mohsen, R. ElAdawy, Y. Mohamed, D. ElGayar, S. Haddara, H. Warda.**	Morphology of Architectural Structure: An Approach to Assess Quality of Spaces and Performance of The Resulted Built-Forms, **Yara H. Helmy, Ibrahim E. Ma'arouf, Asmaa E. Hasan**
	Validation and Optimization of a Three Floats Wave Energy Converter, **A. R. Bassiouny, Y. Welaya, Khaled A. Geba, T. M. Ahmed.**	Biomimicry Principles as a Tool for Evaluating Buildings, **Basma M. Abdel Aleem, Mohamed A. Fikry**
	Influence of the variations of the geometrical parameters on the flanged diffuser augmented wind turbine performance, **Amr M. Abdelrazek, Ahmad O. Abdelaziz, Sadek Z. Kassab.**	Enhance the Environmental Performance of Existing Office Building Using Passive Cooling Techniques, **Engy F. M. Ishak, Alessandro Rogora, Ibrahim H. Saleh, Zeyad M. Elsayed**
	The Effect of Endplate Addition on the Perf Wind Turbine: A 3-D study, **Sadek Z. Kassab, Chemengich S. Jamar, Eslam R. Lotfy.**	Improving Energy consumption in social housing by using different levels of retrofitting, **Allaa M. Abu Eldahb, Zeyad M. Elsayad, Ali F. Bakr.**

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	Mass transfer Behavoir for a Gas Sparged rotating Cylinder electrode, **H. K. Ali, S. A. Nosier, I. H. Mohamed, G. H. Sedahmed, M. A. El-Naggar**	Behavior of Reusable T-Stub Beam Column Connection, **Mohaymen Moustafa, Ahmed M.Khalifa, Ahmed Shamel Fahmy.**
		Achieving resilience in COVID-19's New Normal: Changes in office buildings and workspaces design according to social distancing and teleworking parameters, **Mohammed S. Ali, Tarek A. Farghaly, Dina M. Saadallah.**
Day 2: Tuesday, December 21st, 2021		
06:00 pm – 07:30 pm	Session #7: **Energy** *Chair Person: Prof. Mohamed Teamah *Co-chair: Dr Ahmed Elwardany **Meeting ID: 939 6738 1304** **Password: RETBE21**	Session #8: **Technology in Architecture** *Chair Person: Prof Dina S. Taha *Co-chair: Dr Asmaa El Sayed **Meeting ID: 847 4126 5750** **Password: RETBE21**
	Numerical Investigation of Planning Hull Resistance Using Different Turbulence Models, **Alsmoual A. Alhassan, Adel A. Banawan, Yasser M. Ahmed, Tamer. M. Ahmed, Maged M. Abdelnaby**	(VIRTUAL HERITAGE) Digital Documentation and conservation of heritage, **Heba Slumah, Mohamed Fikry, Waled Abdel Aal.**
	Sustainable retrofits for high-rise building envelopes in North America: A communication, **H. M. Teamah, M. Teamah.**	Retrofitting Historical Buildings for Fire Resistance, **Renal Salama, Mohamed Anwar Fikry, Ibrahim Marof**
	Reducing Carbon Footprint of Thermal Natural Gas Power Plants Using Cryogenic Carbon Capture Technology, **Abdurrahman A. Alsanousie, Abdelhamid E. Attia, Mohamed Elhelw, Osama A. Elsamni.**	A Holistic Approach for the Digital Documentation of Urban Cultural Heritage Using HBIM, **Lara A. Awad, Khalid S. M. Al-Hagla, Dina M. Nassar**
	COVID-19 & the Nuclear Industry: Review of Impacts and Implications for Newcomer Countries, **Mohamed H. M. Hassan.**	Acoustic Environment and Architectural Characteristics of learning spaces via its Soundscape, **Ayat K. Kamal, Mostafa R. Ismail, Mohammed S. Mayhoub.**
	Spotlight on the influence of various parameters, related to the inlet injection region, on an air-water air lift pump performance, **Sadek Z. Kassab, Abdelrahman A. Abdelrazek, Eslam R. Lotfy.**	Designing Low Rise Green Buildings in Iraq with Emphasis on Structural Design Optimization and Thermal Performance, **Shaymaa Mohammed Abass, A.Shamel Fahmy, Zeyad M.ElSayad, Shreen Moustafa Sewilm.**
	Performance evaluation of a MOF-801 packed in copper foams-based adsorption cooling and desalination system, **Mohamed Rezk, Mahmoud Elsheniti, Osama A. Elsamni.**	Biomimetic Adaptation Techniques in Facades in Coastal Hot Climates, **A.W. Mariam, H. Asmaa, E.H. Khaled.**

* Faculty of Engineering, Alexandria University

https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5936&catid=21&lang=ar-AA

A Project for installing and operating photovoltaic Solar Plant at the university Administration building

Alexandria University adopted a using solar energy as an electricity supplement source using renewable energy.

The project objectives is for project of "supplying, installing and operating the photovoltaic solar plant with a capacity of 20.1 kW to be installed on the roof of the administration building . The project was implemented in coordination with the Arab Renewable Energy Company, in 2020, with a total value of 300,000 (three hundred thousand pounds only). The project duration is for 4 month .It is currently producing about 8% of the total monthly energy consumption of the administration building which consumes about 255 kW / month

Alexandria university plan in place to reduce overall energy consumption

مركز المعلومات والتوثيق ودعم اتخاذ القرار
Information, Documentary and Decision Support Cente

	Entity	LED bulbs	Computers	Airconditions	photocopiers	Surveillance Cameras	Fire extinguishers	Fire Alarm Systems	Fire hydrants	Bathroom Faucets
1	General Administration	2000	403	142	88	37	177	1	10	100
2	General Administration of University Cities	5500	130	234	19	23	729	0	0	55
3	General Administration of Libraries	0	75	9	5	16	168	1	0	8
4	Faculty of Dentistry	4600	169	269	36	61	166	1	0	485
5	Faculty of Pharmacy	5700	444	165	34	85	271	0	0	125
6	Faculty of Medicine	7000	761	186	96	86	571	1	45	10
7	Faculty of Veterinary Medicine	68	238	42	40	4	160	0	0	1
8	Faculty of Nursing	1050	225	92	34	40	155	0	0	100
9	Faculty of Science	3290	500	217	42	32	464	1	65	10
10	Faculty of Engineering	8610	312	23	21	39	375	1	0	42
11	Faculty of Tourism and Hotels	350	122	43	9	0	85	0	0	6
12	Faculty of fine Arts	0	107	53	21	0	300	0	0	10
13	Faculty of Physical Education for Girls	294	193	26	27	25	343	1	4	10
14	Faculty of Physical Education for Boys	100	165	65	20	0	145	0	0	50
15	Faculty of Economics and Political Science	2200	49	19	20	0	50	1	0	10
16	& Faculty of Computer Information Sciences	377	150	41	5	0	51	1	0	12
17	Faculty of Education for Early Childhood	662	50	30	9	0	53	0	14	10
18	Faculty of Law	1300	243	170	65	0	172	1	0	37
19	Faculty of Education	2500	300	73	11	30	134	0	33	10
20	Faculty of Commerce	13404	724	227	25	25	150	0	0	176
21	Faculty of Agriculture Shatby	3300	353	40	45	42	205	0	0	76
22	Faculty of Agriculture Saba Pasha	0	0	0	0	0	0	0	0	0
23	Faculty of Arts	2200	239	126	24	48	83	0	0	22
24	Faculty of Specific Education	344	102	29	20	6	62	0	0	14
25	Medical Research Institute	3256	333	353	17	37	193	0	0	10
26	Institue of Graduate Studies & Research	870	182	80	18	30	116	1	0	216
27	High Institute of Public Health	0	0	0	0	0	0	0	0	0
	Total	68975	6376	2754	751	666	5378	11	171	1605

General Manager
Dr. Nadira Sobhy Mohamed
Nadira 17-10-22