



الجامعة الأورومتوسطية بفاس
EUROMED UNIVERSITY OF FES
UNIVERSITÉ EUROMED DE FÈS

SDG7 Report

Clean and affordable energy

2024



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SDG7 report: Clean and affordable energy

Introduction

The theme of Clean and Affordable Energy constitutes one of the priority areas of the UEMF strategic plan. It is both a training and research theme, and a topic on the agenda in the development of the eco campus.

Training

Mechanical and Energy Engineering (EPS)

Main activities: Learning to define the specifications, design, model, develop, optimize, implement and manage production systems for goods and services:

- in the fields of R&D services in industry, transport and energy for the “Mechanics and Industrial Engineering” course,
- in the areas of heat transfer, waste treatment and the development of process reactors for the “Energy Environment” course.

Electrical Engineering (EPS)

Main activities: Learn to design and implement electrical systems and acquire multidisciplinary skills in automation, signal processing, electronics and industrial computing.:

- The “Electric Energy” option trains engineers involved in the production, transport, distribution and transformation of electrical energy and renewable energies.
- The “Embedded Systems” option trains engineers capable of designing and implementing complex technological systems integrating components from different technologies (electronic components, computer and telecommunications hardware, software, networks, mechanical devices)

Civil Engineering sector (EPS)

Main activities :

Learn to :

- design and implement structures using various types of energy: electrical, mechanical, hydraulic, solar, wind, oil, etc.
- use sustainable construction standards to best integrate ecology during each stage of the construction, renovation or rehabilitation of a structure.
- identify the environmental impacts of projects throughout their life cycle.
- participate in the design and sizing of the envelope and equipment of high energy efficiency buildings.
- make the best choices and make the best decisions in a complex energy context

Sector: Master in Transport and Sustainable Mobility (EPS)

Modules taught in relation to energy

- Energy and climate change;
- Freight transportation systems
- Environmental and transport economics;
- Sustainable development ;
- Sustainable transport and mobility
- Environmentally friendly vehicle engineering;
- Operation of rail and guided transport;
- Choice of transport infrastructure and sustainability;
- Logistics infrastructure engineering;
- Supply Chain Management;



Master: DESIGN AND ENGINEERING OF GREEN BUILDINGS (CIBV)

Modules taught in relation to energy:

- Transfer phenomena;
- Fluid mechanics ;
- General and applied thermodynamics;
- Materials for energy efficiency in buildings;
- Standards and climate;
- Ventilation and lighting of the building;
- Air conditioning, heating and energy integration;
- Renewable energies for buildings;
- Eco-design of a building;
- Energy analysis and economic evaluation of the building;
- Green and smart buildings;
- Sustainable development and waste management;
- Preliminary project for an efficient building;

Specialized Master: Functional Materials and Additive Manufacturing (EPS)

Modules taught in relation to energy:

- Ceramic, polymer and metal materials
- Design adapted to additive manufacturing;
- Energy beam additive manufacturing;
- Industrial manufacturing processes;
- Mechanics and aging of materials;
- Additive manufacturing for the aeronautics and automotive industries;
- Additive manufacturing for the medical field;
- Biomaterials and their applications;

Specialized Master: Environmental Engineering and Water Management (EPS)

The sector aims to train executives with a transversal vision of environmental issues and water management in particular. The development of clean technologies (processes, methods or tools) in order to resolve environmental problems attributable to human activities is highlighted with a focus on the Euro-Mediterranean region.

To do this, the student acquires in this sector advanced knowledge in the field of the environment (scientific and technical methods, knowledge of ecosystems, techniques for analyzing and treating pollutants, water management and treatment, remote sensing tools and GIS, national and international policy, green economy, etc.) and energy efficiency

Architecture sector

Main energy activities:

Learn to :

- Promote urban planning and architectural choices that favor natural resources, integrate bioclimatic principles and guarantee good thermal insulation of the entire building envelope while respecting current legislation.
- Use materials that consume little energy for their manufacture, transport and implementation.
- Use construction techniques with low impact on the environment and energy consumption.
- Promote the use of renewable energies and/or low-polluting fuels.
- Opt for the choice of “intelligent” equipment (low-consumption lighting and household appliances, efficient and correctly sized heating, etc.).

Lifelong training

The UEMF also has a rich offering of continuing training in the energy field.

<https://ueuromed.org/formations-courtes>

It also defines offers in response to the needs of local and regional partners.

Research

Innovation structures

Agro Energy TIC Valley

It is a mixed platform for testing, research and training in the fields of bioenergy and energy storage, created jointly by the EuroMed University of Fez and the Institute for Research in Solar Energy and New Energies. (IRESEN).

Energies Renouvelables	Stockage de l'Energie	Efficiency Energétique, Digitalisation et IA
Solaire et Applicatifs	Stockage Thermique/Thermo chimique	Agro-Industrie '4.0'
Biomasse: Biogaz & Combustion	Stockage Electrochimique & Applications	Agriculture <u>Efficiente et Intelligente</u> – 'Smart Farming'
Hybridation et Systèmes de Gestion Intelligente de l'Energie (EMS) (TIC, AI, IoT, D2D, V2G, etc.)		

Publications and scientific partnerships

The UEMF contributes to international scientific production in the fields of energy: energy efficiency, renewable energies, intelligent energy management, thermal energy, etc.

<https://ueuromed.org/innovation/scientific-production>

Several doctoral theses are carried out on the theme of energy

<https://ueuromed.org/formation-doctorale/formation-doctorale-sciences-de-lingenieur>

The UEMF also carries out a large number of projects, some within a cooperation framework:
<https://ueuromed.org/innovation/research-project>

Technology platforms

UEMF has several high-level technological platforms in different fields: Additive Manufacturing (3D) and Prototyping, Process Engineering and Civil Engineering, Materials-Synthesis and Characterization, Biotechnology and Biomedical Engineering, Renewable Energy-Storage and Energy Efficiency, Engineering Digital and Artificial Intelligence.

Additive Manufacturing (3D) and Prototyping Platform

The Platform contains both extractive and additive technologies to design, manufacture and characterize a wide spectrum of materials and shapes: 1. Polymers, 2. Metals, 3. Composites, 4. Ceramics and 5. Concrete. It is the largest additive manufacturing platform (3D printing) in Morocco and probably on an African scale. It includes around fifty 3D printing machines, some of which are designed and manufactured at UEMF. A startup for the design and manufacturing of 3D printing machines has been created by the UEMF. Currently several research contracts are being carried out in partnership with the aeronautics and aerospace, automotive and biomedical sectors.

Plateforme de fabrication additive et de prototypage



SLS Polymères Haute-Température PEEK



SLM et SLS



FDM 5 filaments- Multicouleurs



FDM (20cmx30cmx30cm)



FDM (100cmx100cmx30cm)



FDM (45cmx45cmx65cm)



FDM (30cmx30cmx30cm et 20cmx20cmx20cm)



Post-fabrication et finition



Post-fabrication et finition



Finition par vibration

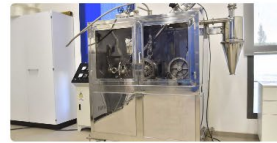
Plateforme de fabrication extractive et de prototypage



Laboratoire de mise en œuvre



Extrudeuse et mélangeur batch



Broyeur cryogénique



Broyeur à couteaux



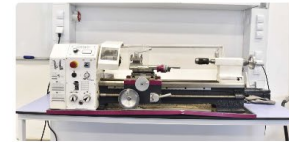
Presse hydraulique



Simulateur CMS



Centre d'usinage 3 axes



Tour manuel



Electrospinning

<https://ueuromed.org/plateformes-technologique/plateforme-fabrication-additive-3d-et-prototypage>

Process Engineering and Civil Engineering Platform

The "Process Engineering and Civil Engineering" platform includes several design equipment for both materials and processes as well as their characterization:

Material transfer -Heat exchanger-Temperature measurement Heat transfer-Compression machine-reactors, ...

Laboratoire procédés et thermique



Transfert de matière



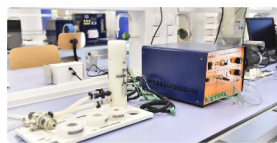
Mesure de température



Transfert de chaleur par ébullition



Convection forcée



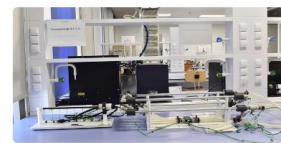
Transfert de chaleur



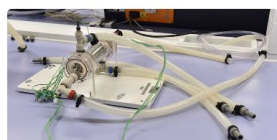
Tour de refroidissement



Échangeur de chaleur



Conduction dans une tige (gauche) et
Échangeur tubulaire



Échangeur à calandre

Laboratoire de Mécanique des Fluides



Diffusion dans les liquides et dans les gaz



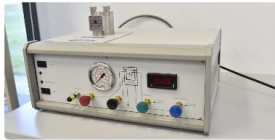
Mesure du débit avec le tube de Venturi



Banc d'hydrologie



Etude des pertes de charge régulières et singulières



Sécheur supercritique



Mesure du coefficient de diffusion des gaz



Banc d'étude de la régulation des procédés



Unité de conditionnement d'air



Banc de soufflerie pour l'étude en aérodynamique



Canal à pente variable - Ecoulement à surface libre



Impact d'un jet sur un obstacle - Théorème d'Euler

Laboratoire de Génie Civil



Bain thermostatique avec groupe réfrigéré



Scie à béton



Maniabilimètre à béton



Table à secousses



Essai de rétention d'eau



Consistomètre VEBE



Mesure de la perméabilité à l'air

Laboratoire de Génie Civil / Résistance des matériaux



Machine de compression 3000 kN



Plasticimètre à béton



Carotteuse électrique



Banc d'étude des réacteurs continus (à piston, tubulaire, agité, en cascade)



Banc d'étude de la flexion



Banc d'étude de la torsion



Banc d'étude de la flexion combinée (Système hyperstatique)

<https://ueuromed.org/plateformes-technologique/plateforme-genie-des-procedes-et-genie-civil>

Materials, Synthesis and Characterization Platform

This platform includes several laboratories for chemical synthesis, for the implementation of materials and for their physical and physico-chemical characterization. Several research projects are being carried out with academic and industrial partners in the field of active molecules, bio-sourced molecules, composites, nanomaterials, biomaterials and ceramics.

Microscopie et Spectroscopie



Vidéogranulométrie



Microscopie électronique à balayage



Microscopie optique et électronique



Imagerie morphologique (taille et forme des particules)



FTIR-ATR



UV

Synthèse



Hottes et sorbonnes de synthèses chimiques



Mise en œuvre des céramiques



Synthèse micro-onde



Synthèse micro-onde



Lyophilisateur



Centrifugeuse



Spin coater



Broyeur Planétaire à Billes



Sécheur supercritique



Etuve



Etuve



Four à moufle

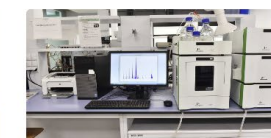
Caractérisation physico-chimique



BET (Porosité)



GCMS (Chromatographie en phase gazeuse et spectro de masse)



HPLC (Chromatographie en phase liquide)



Pycnomètre : Mesure de densité



Conductivité thermique



M-DSC (Modulated Scanning Calorimetry)



Angle de contact

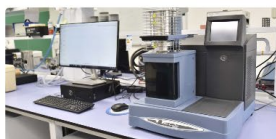


Osmométrie (Densité)

Caractérisation Mécanique et Thermo-mécanique



Dureté Vickers et Dureté Rockwell



TMA : Thermal Mechanical Analyzer



Dynamic Mechanical Analyzer



Rhéométrie dynamique et continue



Linkam : Rhéo-optique

Caractérisation Optique



Laboratoire d'optique Laboratoire d'optique géométrique et physique



Dispersion et pouvoir de résolution du prisme et d'un spectroscopie à réseau



Interféromètre de Michelson



Banc de focométrie

<https://ueuromed.org/plateformes-technologique/plateforme-materiaux-synthese-et-caracterisation>

Biotechnology and Biomedical Engineering Platform

The biotechnology and biomedical engineering platform is equipped with several instruments and laboratories for training and research in the fields of medicines, agri-food, diagnostic tests, genomics and microbiology.

Laboratoire de synthèse en biomédical et biotechnologie



Spectroscopie UV



Spectroscopie Infrarouge à transformée de Fourier UV



Synthèse micro-onde



Lyophilisateur



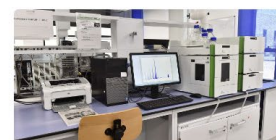
Centrifugeuse



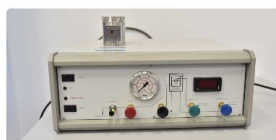
Système de purification d'eau



GCMS (Chromatographie en phase gazeuse et spectro de masse)



HPLC (Chromatographie en phase liquide)



Sécheur supercritique



BET (Porosité)

<https://ueuromed.org/plateformes-technologique/plateforme-de-biotechnologie-et-de-genie-biomedical>

Renewable Energy, Storage and Energy Efficiency Platform

The "Renewable Energy, Storage and Energy Efficiency" Platform includes several design, manufacturing and characterization equipment for devices meeting sustainable development criteria in energy matters. In addition to this intramural infrastructure, the university also has open-air laboratories including a house equipped with several types of sensors for research on energy efficiency.

Lab 01



Chauffe-eau solaire



Turbine à vapeur



Banc de test des membranes d'osmose directe

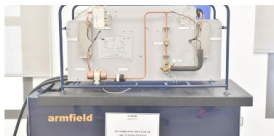


Panneau photovoltaïque test



Unité de conditionnement d'air

Caractérisation thermodynamique et thermique



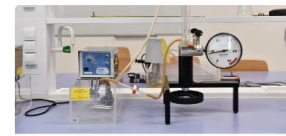
Réfrigération par compression / détente



Réfrigération par absorption



Chaleur spécifique des gaz et de la détente de Joule-Thomson



Étude de l'équation d'état thermique et du point critique



Étude de l'équation d'état thermique et du point critique



Étude de l'équation d'état thermique et du point critique



Osmomètre



Transfert de matière



Mesure de température



Transfert de chaleur par ébullition



Convection forcée



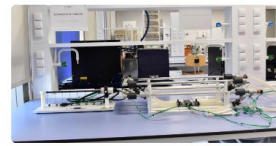
Transfert de chaleur



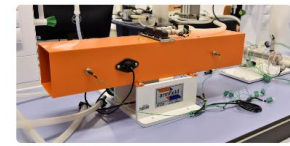
Tour de refroidissement



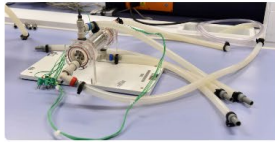
Échangeur de chaleur



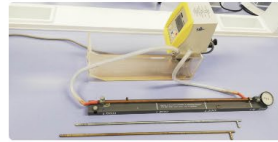
Conduction dans une tige (gauche) et
Échangeur tubulaire (Accessoires de



Échangeur air-liquide



Échangeur à calandre



Expansion thermique des solides

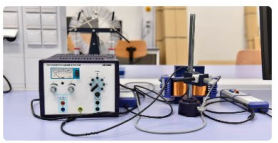


Détermination du coefficient
adiabatique des gaz

Laboratoire de mesures électriques



Machine électrostatique de
Wimshurst (à induction
électrostatique)



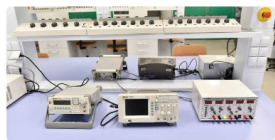
Champ magnétique de bobine - Loi de
Biot et Savart



Mesure de la constante diélectrique
des matériaux



Induction magnétique - Hystérésis
ferromagnétique



Equipements de métrologie électrique



Circuits électriques (RL-RC-RLC)

<https://ueuromed.org/plateformes-technologique/plateforme-energies-renouvelables-stockage-et-efficacite-energetique>

Digital Engineering and Artificial Intelligence Platform

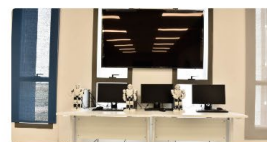
UEMF has created the first Engineering School completely dedicated to Digital Engineering and Artificial Intelligence (EIDIA) in the Euro-Mediterranean-Africa Area. This School is equipped with several cutting-edge infrastructures with the largest digital platform in Morocco: 3D System Platform from Dassault Systèmes, Huawei, Microsoft, IBM and others. EIDIA research teams work on big data, deep learning, virtual reality, robotics and cobotics (human-machine interaction) for applications in various fields: Cybersecurity, medical, profiling, mobile, connected car, etc.



Programmation robot



Intelligence-Robot



Coordination multi-Robots



Salle de programmation



Postes de programmation



Poste électrique et électronique



Labo génie électrique



Montage électrique-électronique

<https://ueuromed.org/plateformes-technologique/plateforme-dingenierie-digitale-et-dintelligence-artificielle>

Research topics

Renewable energies and energy efficiency:

- Technological and operational development of solar thermal, photovoltaic, wind and hydroelectric production technologies. This work will cover both possible technical developments in current energy production and storage technologies as well as the development of new materials aimed at increasing energy efficiency in the production, storage and distribution of renewable energies.
- Conduct and control of the different phases of studies (implantation, operation, maintenance of installations and electrical equipment);
- Improvement of processes and devices related to energy engineering;
- Integration of renewable energies into industrial processes;
- Mastery of different calculation methods for energy and thermal systems;
- Development of identification and prognosis methods for wind generators (Project to be developed with the EDF Energies Nouvelles group);
- Cleaning, alignment and maintenance systems for solar parks to preserve high transformation efficiency (Project to be developed with the EDF Energies Nouvelles group).
- Materials, Nanomaterials and Additive Manufacturing
- Bioactive substances and phosphorus dendrimers: medical applications;
- Improved bioceramics for bone regeneration: manufacturing, testing and validation for medical implantation;
- Fatigue resistance of Inconel 718 from additive manufacturing (Project to be developed with the CEROC, SANDWIK, AEROCENTRE groups);
- New classes of nano-composite and bio-composite polymers (Project to be developed with the PSA group for the design of materials with minimal ecological impact and mechanical characteristics suitable for the construction of automobile shells);
- Nanodevices based on 2D materials.

Vehicles and land mobility / Aeronautics and aerospace:

- Development of lightweight and innovative meta-materials for optimal acoustic insulation of electric vehicles (Project to be developed with the PSA group for the creation of acoustic insulation plates suitable for very light vehicles);
- Innovative solutions for electric machines for the advanced electrification of passenger transport (Project to be developed with the PSA group for the study of multi-phase electric motors for traction);
- I.MOVE: Innovative MObility serVicEs for non-car owners: Prospective scenario based on participatory design (Project to be developed with the PSA group for the shaping and optimal management of carpooling networks);
- Development of tools for real-time processing of vehicle fleet control in an open environment and data security management;
- Dynamic modeling and identification of non-linear structural joints between carbon fiber plates and hulls (Project in the definition phase with European partners).

Environmental genius :

- Development of innovative technologies for water depollution, filtration and desalination;
- Development of innovative technologies for air pollution control and sequestration of CO₂ and VOCs (Volatile Organic Components);
- Valorization of certain natural plant resources, in particular the argan tree.

Eco-campus and energy

The UEMF project was designed with the Negawatt approach:

The constructions at UEMF are new and less than 7 years old. The UEMF reconfirms its firm commitment to guarantee that all renovations, restorations or new constructions comply with the highest standards of energy efficiency and sustainable development:

- the UEMF campus is an Eco-Campus which respects the best international standards in terms of sustainable development. It was certified by COP 22 and recently obtained the French-speaking responsible innovation label
- the buildings of the UEMF Eco-campus are built according to the "High Environmental Quality" approach limiting any harmful environmental impact through precise choices: low-energy local materials, materials ensuring good thermal and sound insulation, architecture open ensuring maximum natural light and luminosity, clean and renewable energy sources: installation of photovoltaic panels on large areas of building roofs for the production of electrical energy with real-time measurement of the energy recovered, installation and thermal solar panels for the production of hot water, ongoing installation of pipes and basins for rainwater recovery, recirculation of gray water (in progress), construction/rehabilitation of positive energy buildings, installation on the entire Eco-campus of sorting bins for waste, creation of sports, leisure and relaxation spaces, use of a circular economy (minimizing waste by optimizing the value generated by resources), installation on the UEMF Eco-campus with charging stations for electric cars. These terminals are the only ones in the Fez-Meknes region and the only ones on a university campus in Morocco. Advertising panels have been placed in several places in the city of Fez inviting motorists to come and recharge the batteries of their electric cars free of charge on the UEMF Ecocampus, total accessibility and in all University buildings to people at reduced mobility (PRM), installation on all floors, in front of all doors, on staircases and in elevators of Braille signage for the blind and visually impaired, installation on all floors and in all buildings of sanitary facilities (toilets) for PMRs.



UEMF energy efficiency policy 2023-2026

The UEMF displays its desire to contribute effectively to Morocco's 2030 objectives and has the ambition to move towards carbon-neutrality. In this regard, this policy implemented aims to:

- Develop energy management processes;
- Establish rules for optimal energy management.

The UEMF has implemented concrete actions to inform and raise awareness among members of the university community in order to limit environmental impact and global warming.

<https://www.ueuromed.org/sites/default/files/upload/files/politique-defficacite-energitique-de-luemf-2023-2026.pdf>

MONITORING SYSTEM FOR PHOTOVOLTAIC POWER PLANTS

A monitoring system (SmartLogger) has been integrated into each photovoltaic plant. This central unit plays the dual role of warning the operator of any major failure (or other abnormal situation) as well as collecting the electrical power produced in "real time". The data collected every 5 minutes is accessible through a web service, which allows remote monitoring of the state of the plant at any time. From the web console, it is possible to obtain the performance values of the PV plants established from the data collected:

- the daily cumulative power that was injected into the electricity network;
- the cumulative power that has been injected into the electrical network since initial commissioning;
- the instantaneous power produced by the plant(s), updated every 5 minutes;
- the income calculated on the basis of the electricity tariff;
- CO2 reduction through the use of photovoltaics.





<https://www.jetenergy.ma/en/projects/ombrie%C3%A8re-solaire/ombriere-uemf>

AVERAGE PRODUCTION EVALUATION (2020-2021-2022)

- 2 photovoltaic power plants with power injection into the building.
- 1,246m² of solar panels installed.
- Total peak power of 197.8 kWp.
- Theoretical production of 300 MWh/year by the two plants.
- 248 MWh produced in 2019 / 441 MWh since November 2017.
- Real yield of 83% of theoretical yield.
- Average annual saving of 200,000 DH/year on the energy bill.
- Return on investment (not discounted) over twelve years, based on maintaining current performance.

Responsible innovation label



The Responsible Innovation Label was awarded to the UEMF during its first 2020/2021 edition. A jury specializing in responsible innovation selected the first 3 projects which are being deployed in the member universities of the Agence Universitaire de la Francophonie (AUF), including that of the UEMF entitled “**Sustainable UEMF program**”.

The Responsible Innovation Label is intended for higher education and research establishments. Its objective is twofold: **map and promote responsible innovations from French-speaking university establishments around the world, but also deploy the responsible innovation network to promote synergies between universities, civil society and the socio-economic sector working for the development of a responsible society.**

40 ha Eco-Campus certified by COP22 (in 2016)



Responsible Campus of the Year



The Euromed University of Fez was named winner of the “RESPONSIBLE CAMPUS OF THE YEAR” Prize, during the ceremony organized in Paris, on Tuesday October 4, 2022, under the effective presidency of the Minister of Higher Education and French Government Research.

The “Responsible Establishment of the Year” category rewards UEMF’s commitment to the SDGs and its lasting impact to become an organization

responsible for the challenges of the transition.

<http://ueuromed.org/actualites/annonces-diverses/luemf-laureate-du-prix-campus-responsable-de-lannee>

Activities

The UEMF promotes Electric Mobility! (06 May 2022)



The UEMF has entered into a new partnership with the Moroccan start-up “POGO”, which consists of the development of soft and electric mobility within the UEMF eco-campus.

For a first incubation phase, “POGO” deployed a fleet of 12 electric scooters for internal travel needs within the campus, in addition to 10 electric motorcycles for external travel.

POGO will benefit from the services offered by the UEMF incubator, namely technical assistance, individualized monitoring, access to technological platforms and access to the UEMF partner network.

The sustainable and intelligent COP 25 torch, “Light Us”, “made in UEMF”, has arrived



Sustainable development - The Euromed University of Fez welcomed the MIPAI-Mediterranean Institute of Intelligence and Public Affairs association to its eco-campus during its stopover in the city of Fez.

Arriving aboard Tesla brand electric cars, the “Light Us” caravan was warmly welcomed by the community of Euromed University in Fez. Upon their arrival, the crew members were

received by the Vice-President of the University, the faculty and administration as well as the students, all proud and happy to receive the convoy. For his part, the President of the Association (MIPAI), Ayoub Makhoulfi, expressed his enthusiasm for this noble cause of raising awareness of the issue of sustainable development, supported both by his association and by the Euromed University of Fez.

The photovoltaic torch which will mark the symbolic transition from COP 24 (Katowice in Poland) to COP 25 (in Santiago, Chile) was manufactured in the additive manufacturing and 3D printing laboratories of the University with the help of the Professor Sébastien Vaudreuil, teacher-researcher at UEMF. Today, this torch which combines artificial intelligence and sustainability has become a strong and meaningful universal symbol. Proudly displaying the colors of the Moroccan flag upon the arrival of the "Light Us" crew in the territory, it undoubtedly recalls the desire of its creators Zacharia Saha and Ayoub Makhoulfi, young Franco-Moroccans, to underline the importance of the objectives sustainable development to save the planet.

As a reminder, the "Light Us" project is labeled COP22 and supported, among others, by the Prince Albert II of Monaco Foundation, the Union for the Mediterranean (UfM), the Council of the Moroccan Community Abroad (CCME), MEDEF, CGPME, CGEM and IRESEN. The MIPAI team will be welcomed at COP25 in the presence of Polish, Chilean and Moroccan authorities.

<https://ueuromed.org/en/news/visits/sustainable-and-intelligent-torch-cop-25-light-us-made-uemf-has-arrived-safely>

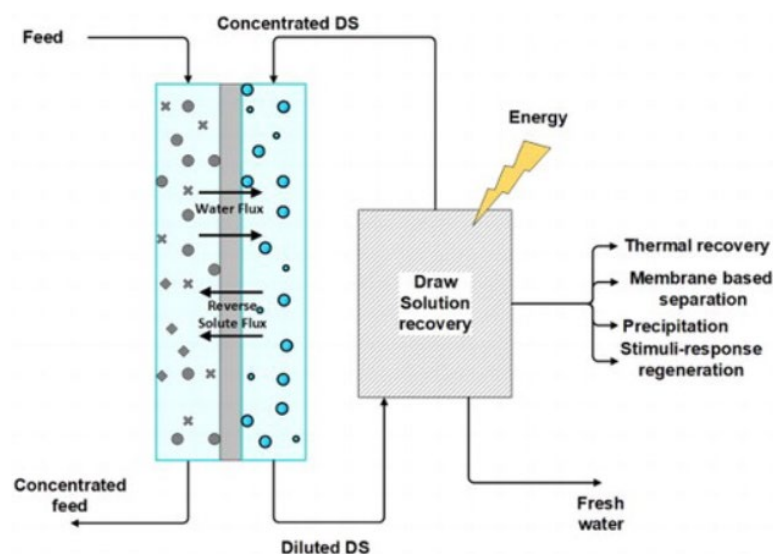
Water desalination by forward osmosis: drawing solutes and recovery methods - review

Imane Chaoui

Teacher. Souad Abderafi

Teacher. Sébastien Vaudreuil

Professor Tijani Bounahmidi



Water production has become a serious concern nowadays due to many environmental and social factors. Conventional desalination processes are considered energy-intensive, as energy consumption represents 50 to 60% of the cost of water production.

In this article, a state-of-the-art update of newly developed suction solutes such as deep eutectic solvents, ionic liquids, smart materials, and conventional FO suction solutes has been carried out. Finally, the challenges, opportunities and future prospects of FO technology were discussed.

[Forward osmosis water desalination: suction solutes and recovery methods – review: Environmental Technology Reviews: Vol 8, No 1 \(tandfonline.com\)](#)

Pr. Othmane Benmoussa explains how to respond effectively to ecosystem disturbances in his article on Média 24, November 11, 2022



The Covid-19 pandemic, galloping international inflation, environmental and political crises and the war in Ukraine, so many disasters that have caused unprecedented disruption and unpredictability in supply chains. A delicate situation which has called into question the planning process of businesses around the world.

The ADDAPT framework for “Anticipate”, “Detect”, “Diagnose”, “Activate resources for”, “Protect Against” and “Track Risks” intervenes in particular in the case of ecosystem disturbances, precisely those relating to supply.

Pr. Othmane Benmoussa responded to this relevant issue by identifying the main actions to be undertaken through his article on Média 24

<https://ueuromed.org/actualites/articles/pr-othmane-benmoussa-exple-comment-reagir-efficacement-aux-perturbations>

www.medias24.com/chronique/se-preparer-aux-ruptures-dalimentation-leadership-et-capacites-organisationnelles/

2024: Euromed University of Fez at the heart of action for the SDGs

Conference on the theme: “Power to X: Opportunities and Challenges” by Mr. Andreas Meurer



The Euromed University of Fez had the pleasure of organizing, on the occasion of World Environment Day, the conference “Power-to-X: Opportunities and Challenges”, which was held on June 5, 2024 at the University’s eco-campus. This conference is part of the University’s commitment to protecting the environment and promoting the eco-responsible approach through the adoption of civic and ecological actions on a daily basis within an ideal setting offered by the UEMF Eco-campus.

The conference was moderated by Mr. Andreas Meurer, a leading expert from the German Aerospace Center (DLR). The Power-to-X (P2X) theme covered a wide range of technologies that convert electricity into various forms of energy or chemicals. These innovations are essential for the integration of renewable energies and the reduction of carbon emissions in industrial sectors. Mr. Meurer shared his expertise on recent advances and challenges to maximize the potential of P2X technologies.

The event was aimed at a diverse audience, including teachers, researchers and students, all engaged in the field of energy and sustainable development. The conference offered a unique opportunity to exchange ideas, discuss future perspectives and create partnerships to promote sustainable energy technologies.

<https://ueuromed.org/actualites/journee-specifique/conference-sur-le-theme-power-x-opportunities-and-challenges-par-m>

Second Semi-final of the Greentech Roadshow Challenge at UEMF: A Crucial Step towards Green Innovation in Morocco



The second semi-final of the “Greentech Roadshow Challenge” was held on July 10, 2024 in Fez, in partnership with BMCI Groupe BNP Paribas, the Euromed University of Fez (UEMF) and the Regional Investment Center (CRI) of Fez-Meknes. This event, organized at UEMF, brought together key players in the entrepreneurial ecosystem to evaluate startups in the fields of green technologies, such as low carbon, Agritech and the blue economy. It provided a platform for entrepreneurs to present their innovations in front of a jury of experts and investors. The event is part of a series of initiatives aimed at supporting Moroccan startups and promoting the ecological transition.

<https://ueuromed.org/actualites/annonces-diverses/deuxieme-semi-finale-du-greentech-roadshow-challenge-luempf-un-pas>

UEMF students make the voices of young Africans and Euro-Mediterraneans heard before the Parliamentary Assembly of the Union for the Mediterranean



Students from the Euromed University of Fez organized a summit on February 14, 2024 under the theme "Euro-Mediterranean and Transatlantic Opening" with more than 200 participants from 30 countries. This summit addressed topics such as energy ethics, sustainable development, transport, climate change, and the challenges of Africa.

The summit culminated in the Call for Investment in the Future, read out on 16 February at the 8th Summit of Speakers of Parliaments of the Union for the Mediterranean. The call highlights the need to strengthen cooperation between Europe and Africa through concrete projects, to allocate the funds promised for climate resilience, and to support initiatives such as the Nigeria-Morocco gas pipeline.

The students also welcomed Morocco's initiatives for economic integration, infrastructure and education in Africa, while calling for a "Marshall Plan" for education and research in Africa, as an investment in the future to combat poverty, terrorism and illegal immigration.

<https://ueuromed.org/actualites/annonces-diverses/les-etudiants-de-luemf-font-heure-la-voix-des-jeunes-africains-et>

UEMF at the World Power-to-X Summit: Green Hydrogen and Innovation



At the World Power-to-X Summit in Marrakech, Professors Tijani Bounahmidi and Othmane Benmoussa represented the Euromed University of Fez (UEMF). The UEMF-HACE Side Event, held on October 9, brought together experts, decision-makers and industrialists to discuss green hydrogen technologies, highlighting innovations and value chain optimization in this booming sector.

Participants, including members of the HVM (Hydrogène Vert Marin) Consortium, discussed global trends in green hydrogen and its benefits, providing their expertise on sustainable solutions for carbon-free energy production. The presence of UEMF professors made it possible to showcase their expertise in sustainable development and establish promising partnerships during the B2B meetings. These collaborations aim to develop technological solutions to make green hydrogen accessible and efficient.

<https://ueuromed.org/actualites/congres-et-colloques/luemf-au-world-power-x-summit-hydrogene-vert-et-innovation>