



الجامعة الأورومتوسطية بفاس
EUROMED UNIVERSITY OF FES
UNIVERSITÉ EUROMED DE FÈS

SDG7 report

AFFORDABLE AND CLEAN ENERGY

2025



Introduction.....	3
Training	3
Lifelong learning	5
Research and Development	5
Eco-campus and energy	13
Activities.....	18
2024: Euromed University of Fez at the heart of action for the SDGs.....	21
2025: Euromed University of Fez intensifies its commitment to the SDGs.....	25

SDG7 Report: Clean and affordable energy

Introduction

The Clean and Affordable Energy theme is one of the priorities of the UEMF's strategic plan. It is both a training and research theme, and a topic on the agenda for 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 for industry, transport and energy for the "Mechanics and Industrial Engineering" course,
- in the fields 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 "Electrical 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 (EPS)

Main activities:

Learn to:

- design and implement civil engineering 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 building.
- 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 take the best decisions in a complex energy context

Course: Master's in Transport and Sustainable Mobility (EPS)

Modules taught in relation to energy

- Energy and climate change;
- Freight transport 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 energy 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 design of an efficient building;

Specialized Master: Functional Materials and Additive Manufacturing (EPS)

Modules taught in relation to energy:

- Ceramic, polymer and metallic 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's: Environmental Engineering and Water Management (EPS)

The program aims to train managers with a cross-disciplinary vision of environmental issues and water management in particular. The development of clean technologies (processes, methods, or tools) to solve environmental problems attributable to human activities is emphasized, 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 and GIS tools, national and international policy, green economy, etc.) and energy efficiency.

Architecture department

Main energy activities:

Learn to:

- Promote urban planning and architectural choices that prioritize 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 environmental impact and low energy consumption.
- Promote the use of renewable energy and/or low-polluting fuels.
- Opt for the choice of “smart” equipment (low-consumption lighting and household appliances, efficient and correctly sized heating, etc.).

Lifelong learning

The UEMF also offers a wide range of continuing education courses in the energy field.

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

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

Research and Development

Innovation structures

Agro Energy TIC Valley

It is a joint 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	Efficienne 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

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 being conducted on the subject 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 Energies-Storage and Energy Efficiency, Digital Engineering 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 (3D printing) platform 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 manufacture of 3D printing machines has been created by 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

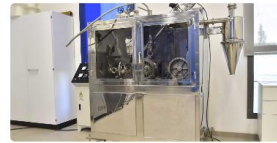
Plateforme de fabrication extractive et de prototypage



Laboratoire de mise en œuvre



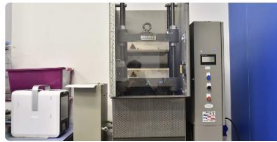
Extrudeuse et mélangeur batch



Broyeur cryogénique



Broyeur à couteaux



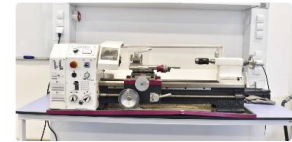
Presse hydraulique



Simulateur CMS



Centre d'usinage 3 axes



Tour manuel



Electrospinning

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

Process Engineering and Civil Engineering Platform

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

Material transfer - Heat exchanger - Temperature measurement Heat transfer - Compression machine - Reactors, etc.

Laboratoire procédés et thermique



Transfert de matière



Mesure de température



Transfert de chaleur par ébullition



Convection forcée



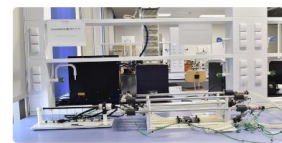
Transfert de chaleur



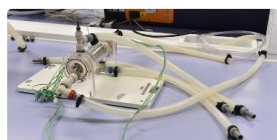
Tour de refroidissement



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



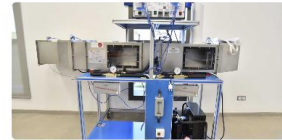
Sécheur supercritique



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-technologiques/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 physicochemical characterization. Several research projects are conducted 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

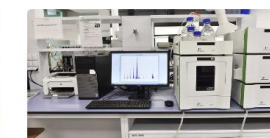
Caractérisation physico-chimique



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

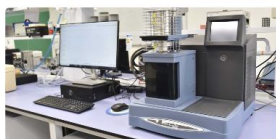


Osmométrie (Densité)

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 spectroscope à réseau



Interféromètre de Michelson



Banc de focométrie

<https://ueuromed.org/plateformes-technologiques/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



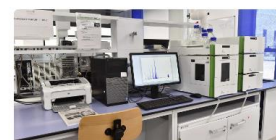
Centrifugeuse



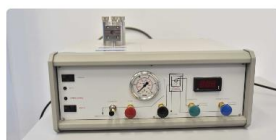
Système de purification d'eau



GCMS (Chromatographie en phase
gazeuse et spectro de masse)



HPLC (Chromatographie en phase
liquide)



Sécheur supercritique



BET (Porosité)

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

Renewable Energy, Storage and Energy Efficiency Platform

The Renewable Energy, Storage, and Energy Efficiency Platform encompasses several facilities for the design, manufacturing, and characterization of devices that meet sustainable energy development criteria. In addition to this intramural infrastructure, the university also has open-air laboratories, including a house equipped with several types of sensors for energy efficiency research.

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



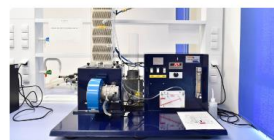
Transfert de chaleur par ébullition



Convection forcée



Transfert de chaleur



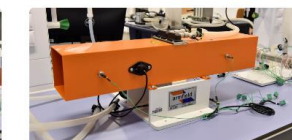
Tour de refroidissement



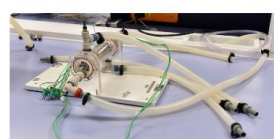
Échangeur de chaleur



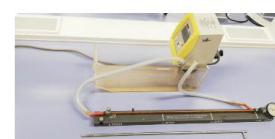
Conduction dans une tige (gauche) et
Échangeur tubulaire (Accessoires de)



Échangeur air-liquide



Échangeur à calandre



Expansion thermique des solides

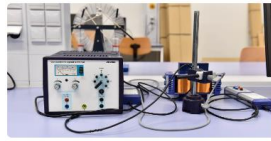


Détermination du coefficient
adiabatique des gaz

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)

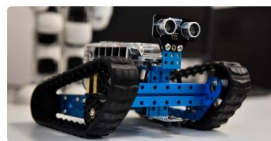
<https://ueuromed.org/plateformes-technologiques/plateforme-energies-renouvelables-stockage-et-efficacite-energetique>

Digital Engineering and Artificial Intelligence Platform

UEMF has created the first Engineering School entirely dedicated to Digital Engineering and Artificial Intelligence (EIDIA) in the Euro-Mediterranean-African 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's 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-technologiques/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 and the development of new materials aimed at increasing energy efficiency in the production, storage and distribution of renewable energies.
- Management and control of the various study phases (installation, operation, maintenance of electrical installations and equipment);
- Improvement of processes and devices related to energy engineering;
- Integration of renewable energies into industrial processes;
- Mastery of the different methods of calculating energy and thermal systems;
- Development of identification and prognosis methods for wind generators (Project to be developed with the EDF Energies Nouvelles group);

- Systems for cleaning, aligning and maintaining solar parks to maintain 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);
- Nano-devices 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 electric machine solutions 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 development and optimal management of carpooling networks);
- Development of tools for real-time processing of vehicle fleet control in open environments and data security management;
- Modeling and dynamic identification of non-linear structural joints between carbon fiber plates and shells (Project in definition phase with European partners).

Environmental Engineering:

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

Eco-campus and energy

The UEMF project was designed using the Negawatt approach:

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

- The UEMF campus is an Eco-Campus that meets the highest international standards in terms of sustainable development. It has been certified by COP 22 and recently obtained the Francophone label for responsible innovation.
- 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, open architecture ensuring maximum natural light and brightness, clean and renewable energy sources: installation of photovoltaic panels on large areas of the building roofs for the production of electrical energy with real-time measurement of the recovered energy, installation of 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 of sorting bins for waste throughout the Eco-campus, creation of sports, leisure and relaxation areas, use of a circular economy (minimizing waste by optimizing the value generated by resources), installation of charging stations for electric cars on the UEMF Eco-campus. These stations are the only ones in the Fez-Meknes region and the only ones on a university campus in Morocco. Billboards have been placed in several places in the city of Fez inviting motorists to come and recharge the batteries of their electric cars for free on the UEMF Ecocampus, total accessibility and in all University buildings for people with reduced mobility (PRM), installation on all floors, in front of all doors, in stairways and in elevators of braille signs for the blind and visually impaired, installation on all floors and in all buildings of sanitary facilities (toilets) for people with reduced mobility.

UEMF Energy Efficiency Policy 2023-2026

The UEMF demonstrates its commitment to effectively contributing to Morocco's 2030 goals and aims to move towards carbon neutrality. In this regard, the 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-energetique-de-luemf-2023-2026.pdf>

PHOTOVOLTAIC POWER PLANT MONITORING SYSTEM

A monitoring system (SmartLogger) has been integrated into each photovoltaic power plant. This plant plays the dual role of alerting 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 plant's status at any time. From the web console, it is thus possible to obtain the performance values of the PV plants established from the collected data:

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





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

AVERAGE PRODUCTION EVALUATION (2020-2021-2022)

- 2 photovoltaic power plants with power injection into the building.
- 1,246 m² of solar panels installed.
- Total peak power of 197.8 kWp.
- Theoretical production of 300 MWh/year by the two power plants.
- 248 MWh produced in 2019 / 441 MWh since November 2017.
- Actual yield of 83% of theoretical production.
- Average annual savings of 200,000 DH/year on energy bills.
- Return on investment (undiscounted) over twelve years, based on maintaining current performance.

Responsible Innovation Label



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



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

The "Responsible Establishment of the Year" category recognizes UEMF's commitment to the SDGs and its lasting impact in becoming a

responsible organization with regard to the challenges of the transition.

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

Activities

UEMF promotes electric mobility! (May 6, 2022)



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 an initial 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 smart COP 25 torch, "Light Us", "made in UEMF", has arrived safely



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 electric cars, the "Light Us" caravan was warmly welcomed by the Euromed University of Fez community. Upon arrival, the crew members were welcomed by

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

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

As a reminder, the "Light Us" project is COP22-certified 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>

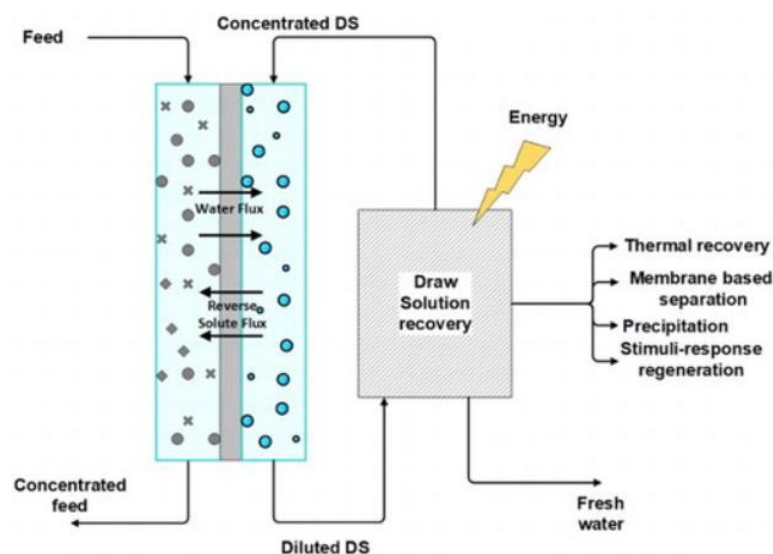
Water desalination by forward osmosis: stretch solutes and recovery methods – review

Imane Chaoui

Prof. Souad Abderafi

Prof. Sébastien Vaudreuil

Professor Tijani Bounahmidi



Water production has become a serious concern these days due to numerous environmental and social factors. Conventional desalination processes are considered energy-intensive, as energy consumption accounts for 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 was performed. Finally, the challenges, opportunities, and future prospects of FO technology were discussed.

[Water Desalination by Forward Osmosis: Suction Solute 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, rampant global inflation, environmental and political crises, and the war in Ukraine—all disasters have led to unprecedented disruptions and unpredictability in supply chains. This delicate situation has challenged the planning process of businesses around the world.

The ADDAPT framework, which stands for "Anticipate, "Detect", "Diagnose", "Activate resources for", "Protect Against" and "Track Risks", is particularly relevant to ecosystem disruptions, specifically those related 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-explique-comment-reagir-efficacement-aux-perturbations>

www.medias24.com/chronique/se-preparer-aux-ruptures-dapprovisionnement-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 environmental protection and the promotion of 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 Dr. Andreas Meurer, a leading expert from the German Aerospace Center (DLR). The Power-to-X (P2X) theme covered a wide range of technologies for converting electricity into various forms of energy or chemical products. These innovations are essential for the integration of renewable energy 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.

This event was aimed at a diverse audience, including professors, researchers, and students, all engaged in the field of energy and sustainable development. The conference provided a unique opportunity to exchange ideas, discuss future prospects, and build 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 to 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-demi-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



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

The summit culminated in the Call for Investment in the Future, read out on February 16 at the 8th Summit of Speakers of Parliaments of the Union for the Mediterranean. This call underscores the need to strengthen cooperation between Europe and Africa through concrete projects, allocate pledged funds for climate resilience, and 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-entendre-la-voix-des-jeunes-africains-et>

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



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

Participants, including members of the HVM (Hydrogen Green Marine) Consortium, discussed global trends in green hydrogen and its benefits, sharing their expertise on sustainable solutions for carbon-free energy production. The presence of UEMF professors allowed them 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>

2025: Euromed University of Fez intensifies its commitment to the SDGs

UEMF at the heart of discussions on renewable energies at EnerGaïa



The Euromed University of Fez participated, as part of the Moroccan delegation led by the Green H2 Cluster, in the renewable energy forum EnerGaïa from December 10 to 12, 2024.

Several contacts have been made, in particular with the Vice-Presidency for the Economy of the Occitanie Region for partnerships in terms of training with universities and institutes in the Region, incubation and cultural and sporting activities with the ambition of initiating lines of research in these fields alongside the creation of courses in sports and team management.

Green hydrogen and the entire inherent value chain were also at the center of discussions with France Hydrogène, as were the theme of water and the underlying technologies, in addition to the Agritech or precision agriculture sector.

The participation of the Euromed University of Fez in the Technocampus Hydrogène Occitanie, which aims to be the largest center in France for research, testing, technological innovation and teaching in the field of green mobility, was also discussed.

<https://ueuromed.org/actualites/recherche-developpement/luemf-au-coeur-des-echanges-sur-les-energies-renouvelables>

Moroccan Parliament: Professor Mostapha Bousmina presents Morocco's strategy for energy transition and sustainable development



The Moroccan Parliament, in collaboration with the Fondation des Rencontres du Futur, the Chamber of Deputies and the Senate of the Republic of Chile, hosted the "Congress of the Future" on December 17 and 18, 2024 at the Parliament headquarters in Rabat.

This event brought together several Moroccan and Chilean ministers and parliamentarians. It provided an opportunity to discuss future issues. On this occasion, the President of the Euromed University of Fez, Professor Mostapha Bousmina, presented Morocco's strategy for energy transition and sustainable development, highlighting the country's commitment to these crucial areas.

He also presented the Moroccan renewable energy plan, the production of green hydrogen and its applications, including ammonia production, seawater desalination, battery and electric vehicle production, as well as the Nigeria-Morocco gas pipeline project. The focus was on the achievements, challenges, and areas of concern, while emphasizing technological and research-innovation challenges in these different areas.

<https://www.ueuromed.org/actualites/personnalites/parlement-marocain-pr-mostapha-bousmina-presente-la-strategie-du-maroc-en>

Doctoral Thesis Defense in “Chemical Engineering” by Mr. Ali Seid ALI



The Euromed University of Fez (UEMF) is pleased to announce the upcoming doctoral thesis defense in Chemical Engineering by Mr. Ali Seid ALI. The defense will take place on June 21, 2025, at 10:00 am, in The Great Hall of the Incubator (LOC001994) at UEMF. The thesis, titled “Analysis of Photovoltaic Thermal (PVT) Driven Forward Osmosis and/or Membrane Distillation Water Desalination”, explores innovative and sustainable methods for water desalination using renewable energy technologies. This research contributes to advancing scientific knowledge in the fields of clean energy, water resource management, and environmental sustainability.

<https://ueuromed.org/actualites/cedoc/soutenance-de-these-de-doctorat-en-chemical-engineering-par-mr-ali-seid-ali>

THE Impact Ranking 2025: 1st at the regional level and 2nd at the national level in the SDG 7 category:

Rank ▲	Name ▼	Affordable and clean energy ▼	Overall ▼
101–200	Ibn Tofaïl University Morocco	60.8–66.9	70.3–76.1
301–400	Euromed University of Fez Morocco	52.7–56.7	65.6–70.2
301–400	Mohammed V University of Rabat Morocco	52.7–56.7	60.9–65.5
401–600	International University of Rabat Morocco	45.7–52.6	70.3–76.1
601–800	Abdelmalek Essaâdi University Morocco	37.8–45.6	60.9–65.5
601–800	Université Sultan Moulay Slimane Morocco	37.8–45.6	1.7–49.7