



Consultation services to local industry with the aim of improving energy efficiency and clean energy implementation, 2020



JAN,01-2020 - PRESENT

Mutah University

Authored by: Training, Consultation and
Community Communication Center

Mutah University,

Mutah University is located in the town of Mutah in the Karak Governorate, 135 km south of the Jordanian capital Amman and 12 km from the ancient Karak Castle. The university was established by royal decree in 1981, and it is a two-pronged university, civil and military. The military wing began its work in 1984, and in 1986 the Council of Higher Education decided to establish a civilian wing in it.

The area of the university in its main site is 400 acres, 15 colleges, including 7 scientific colleges: science, engineering, medicine, pharmacy and nursing, and 7 humanities colleges: public arts, law, Sharia, educational sciences, sports sciences and a college for graduate studies, in addition to two deanships, namely: the Deanship of Scientific Research, and the Deanship of Student Affairs, and the university offers 105 academic programs, including 53 programs at the bachelor's level, 42 programs at the master's level, 9 programs at the doctoral level, and one program at the higher diploma level.

Toward
"Green University-Surplus Energy University"

The Training, Consultation and Community Communication Center

The vision

We aspire for the Training, Consultation and Community Communication Center to be a distinguished center in the field of human cadres and qualifying them to contribute to the comprehensive development of the country in general and the local community in particular, through its various services provided

The Training, Consultation and Community Communication Center was established by Deans Council Decision No. (606/2014) dated 11/19/2014, which is the legal and administrative successor to what was called (The South Center for Training and Consultations). The Center's instructions issued pursuant to Deans Council Decision No. (104/2015) dated 17/3/2015 are the legal, administrative and technical reference for the work of the Center, which is administratively linked to the President of the University. The center performs the following tasks:

- Providing training and advisory services, studies, software marketing and technical services to members of the local community and institutions inside and outside the Kingdom.
- Develop the university's capabilities in providing services and encouraging workers to contribute to community service.
- Organizing and managing seminars, conferences, and training courses with the aim of developing capabilities, expertise, and scientific qualification of the participants from the local community to enable them to contribute to the task of building that society.

The plan of the Training, Consultation and Community Communication Center for 2020, with this diversity and comprehensiveness, was presented, in the belief of the Center in the importance of keeping pace with everything new in the world of training, which witnesses every day a new update and development in various topics, in line with scientific and technological progress, especially in the field of energy and dissemination Awareness about best practices for using energy with the highest efficiency among members of the local community. Hence, the center coordinated a series of courses for a number of target audiences to spread awareness about high-efficiency energy systems among community members.

The Center, through the Consulting Department, created a cooperation group aimed at providing consultations, studies, and analysis to the local industrial sector with the aim of encouraging the trend towards high-efficiency energy systems and the transition to using and relying on renewable energy sources to meet the needs of the local industrial sector. Among these companies are what is shown in the table below.

List of the publication for that aim:

1. Al-Najideen, M.I. and S.S. Alwashdeh, *Design of a solar photovoltaic system to cover the electricity demand for the faculty of Engineering- Mu'tah University in Jordan*. Resource-Efficient Technologies, 2017. 3(4): p. 440-445.
2. Alwashdeh, S.S., *Determining the optimum tilt solar angle of a PV applications at different sites in Jordan*. Journal of Engineering and Applied Sciences, 2017. 12(Specialissuell): p. 9295-9303.
3. Alwashdeh, S.S., *Comparison among solar panel arrays production with a different operating temperatures in Amman-Jordan*. International Journal of Mechanical Engineering and Technology, 2018. 9(6): p. 420-429.
4. Alwashdeh, S.S., *Predicting of energy production of solar tower based on the study of the cosine efficiency and the field layout of heliostats*. International Journal of Mechanical Engineering and Technology, 2018. 9(11): p. 250-257.
5. Alwashdeh, S.S., *The effect of solar tower height on its energy output at Ma'an-Jordan*. AIMS Energy, 2018. 6(6): p. 959-966.
6. Alwashdeh, S.S., *Investigation of the energy output from PV racks based on using different tracking systems in Amman-Jordan*. International Journal of Mechanical Engineering and Technology, 2018. 9(10): p. 687-694.
7. Alwashdeh, S.S., *Assessment of the energy production from PV racks based on using different solar canopy form factors in Amman-Jordan*. International Journal of Engineering Research and Technology, 2018. 11(10): p. 1595-1603.
8. Alwashdeh, S.S., *Energy production evaluation from a linear fresnel reflectors arrays with different array orientation*. International Journal of Engineering Research and Technology, 2018. 11(11): p. 1811-1819.
9. Alwashdeh, S.S., *Investigation of Wind Energy Production at Different Sites in Jordan Using the Site Effectiveness Method*. Energy Engineering: Journal of the Association of Energy Engineering, 2019. 116(1): p. 47-59.
10. Alwashdeh, S.S., *Energy production assessment of solar tower based on the study of the mirror shadowing and blocking effects*. Universal Journal of Mechanical Engineering, 2019. 7(2): p. 71-76.

11. Alrwashdeh, S.S., *An energy production evaluation from PV arrays with different inter-row distances*. International Journal of Mechanical and Production Engineering Research and Development, 2019. 9(5): p. 1-10.
12. Alrwashdeh, S.S. and F.M. Alsaraireh, *Wind energy production assessment at different sites in Jordan using probability distribution functions*. ARPN Journal of Engineering and Applied Sciences, 2018. 13(20): p. 8163-8172.
13. Saad S. Alrwashdeh, F.M.A., Mohammad A. Saraireh, *Solar radiation map of Jordan governorates*. International Journal of Engineering & Technology (UAE), 2018. 7(3): p. 1664-1667.
14. Alrwashdeh, S.S., *Assessment of photovoltaic energy production at different locations in Jordan*. International Journal of Renewable Energy Research, 2018. 8(2): p. 797-804.
15. K. M. Alawasa, Y. A. I. Mohamed and W. Xu, "Active Mitigation of Subsynchronous Interactions Between PWM Voltage-Source Converters and Power Networks," in *IEEE Transactions on Power Electronics*, vol. 29, no. 1, pp. 121-134, Jan. 2014, doi: 10.1109/TPEL.2013.2251904.
16. M. M. Almomani, A. Odiyat, S. F. Al-Gharaibeh and K. Alawasa, "The Impact of Wind Generation on Low Frequency Oscillation in Power Systems," *2021 IEEE PES/IAS PowerAfrica*, 2021, pp. 1-5, doi: 10.1109/PowerAfrica52236.2021.9543283.

And many others....

The project with the local industry :

Project name	Partners	Time	Responsible of the program from Mutah University
Energy and Exergy Analysis for a Combined Cycle Power Plant (CCPP) in Jordan	KOREA SOUTHERN POWER CO., LTD KOSPO-Jordan	2020-Now	Dr. Saad S. Alrwashdeh
Evaluation and minimisation of energy consumption in a medium-scale reverse osmosis brackish water desalination plant	Arab potash		Dr. Alanood A. Alsarayreh
Wind energy mapping	Al-Mashish Renewable Energy Company		Prof.Dr. Marwan Mousa
Solar energy mapping	Al-Mashish Renewable Energy Company		Dr.Saqer S. Alja'afreh
Power Quality Assessment and Analysis	Alfaris Energy		Dr. Khaled Alawasa



Mutah University



Mutah University Partners



الفارس للطاقة
AL-FARIS ENERGY



شركة المشيخ للطاقة المتجددة ذ.م.م



البوتاس العربية
Arab Potash



Within the framework of the strategic plan of Mutah University, the university has taken upon itself to adopt consultation programs for the local industry in the field of energy efficiency to help in the spread of awareness about the optimal uses of the energy.

