Nursultan Koshkarbay

Tel: +7 (771) 453 23 68
E-mail: koshkarbay.n@kaznu.kz,
koshkarbay.nursultan@gmail.com

https://www.scopus.com/authid/detail.uri?authorId=57257861100

• Academic Degrees

– PhD Candidate in Radio Engineering, Electronics, and Telecommunications, Al-Farabi Kazakh National University, Almaty, Kazakhstan

– Master's Degree in Solar Energy, Al-Farabi Kazakh National University, Almaty, Kazakhstan

– Bachelor's Degree in Space Engineering and Technology, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan

• Professional Experience

Since 2022 — Lecturer at the Department of Physics and Technology, Al-Farabi Kazakh National University.

Since 2023 — Researcher in the state-funded project "Improving the Energy Efficiency of Mobile and Static Wireless Sensor Nodes Indoors and Outdoors."

Since 2022 — Researcher in the state-funded project "Enhancing the Efficiency of Photovoltaic Systems Based on Solar Trackers Under Various Weather Conditions."

• Research Interests

Neural Networks
Machine Learning
Deep Learning
Solar Trackers
MPPT Controllers

• Computer Skills

Python
PyCharm
LabVIEW
MATLAB
COMSOL

• Languages

English
Kazakh

• Publications :

1. Koshkarbay, N., Mohammed, K. K., Mekhilef, S., Kuttybay, N., Almen, D., Saymbetov, A., & Nurgaliyev, M. (2025). Improved MPPT technology for PV systems using Social Spider optimization (SSO): Efficient handling of partial shading and load variations. *Electric Power Systems Research*, *247*, 111822.

2. Orynbassar, S., Barkana, D. E., Yershov, E., Nurgaliyev, M., Saymbetov, A., Zholamanov, B., ... & Almen, D. (2025). Development of bimodal emotion recognition system based on skin temperature and heart rate variability using hybrid neural networks. *IEEE Access*.

3. Zholamanov, B., Bolatbek, A., Saymbetov, A., Nurgaliyev, M., Yershov, E., Kopbay, K., ... & Koshkarbay, N. (2024). Enhanced Reinforcement Learning Algorithm Based-Transmission Parameter Selection for Optimization of Energy Consumption and Packet Delivery Ratio in LoRa Wireless Networks. *Journal of Sensor and Actuator Networks*, *13*(6), 89.

4. Nurgaliyev, M., Bolatbek, A., Zholamanov, B., Saymbetov, A., Kopbay, K., Yershov, E., ... & Koshkarbay, N. (2024). Machine Learning Based Localization of LoRa Mobile Wireless Nodes Using a Novel Sectorization Method. *Future Internet*, *16*(12).

5. Koshkarbay, N., Mekhilef, S., Saymbetov, A., Kuttybay, N., Nurgaliyev, M., Dosymbetova, G., ... & Bolatbek, A. (2024). Adaptive control systems for dual axis tracker using clear sky index and output power forecasting based on ML in overcast weather conditions. *Energy and AI*, *18*, 100432.

6. Orynbassar, S., Almen, D., Mekhilef, S., Kapparova, A., Dosymbetova, G., Nurgaliyev, M., ... & Bolatbek, A. (2024). Minimum solar tracking system for a Fresnel lens-based LCPV. *Renewable Energy*, *237*, 121607.

7. Kuttybay, N., Mekhilef, S., Koshkarbay, N., Saymbetov, A., Nurgaliyev, M., Dosymbetova, G., ... & Bolatbek, A. (2024). Assessment of solar tracking systems: A comprehensive review. *Sustainable Energy Technologies and Assessments*, *68*, 103879.

8. Dosymbetova, G., Mekhilef, S., Orynbassar, S., Kapparova, A., Saymbetov, A., Nurgaliyev, M., ... & Koshkarbay, N. (2023). Neural Network-Based Active Cooling System With IoT Monitoring and Control for LCPV Silicon Solar Cells. *IEEE Access*, *11*, 52585-52602.

9. Dosymbetova, G., Mekhilef, S., Saymbetov, A., Nurgaliyev, M., Kapparova, A., Manakov, S., ... & Koshkarbay, N. (2022). Modeling and simulation of silicon solar cells under low concentration conditions. *Energies*, *15*(24), 9404.