Assistant Professor (Research) Xuejing Sun

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Academic Qualification:

Ph.D. in Applied Physics and Materials Engineering, University of Macau
M.S. in Control Engineering, Xidian University
B.S. in Electrical Engineering and Automation, Inner Mongolia Agricultural University

Teaching Area

Control theory
Automation

Research Area

Vertical axis wind turbine system design, simulation and performance optimization
Vertical axis wind turbine operation status intelligent perception and control
Renewable energy (Low speed wind/water energy) utilization and energy storage management
Control system design and analysis

Working Experience

2024 - Present, Assistant Professor, Department of Engineering Science, Faculty of Innovation Engineering, Macau University of Science and Technology
2022 - 2024, Postdoctoral Fellow, Zhuhai UM Science & Technology Research Institute
2021 - 2022, Research Assistant, Institute of Applied Physics and Material Engineering, University of Macau
2012 - 2018, Engineer, Shanghai Institute of Applied Physics, Chinese Academy of Sciences

Academic Publication (selected)

1. **Sun, X.J.**, Hao, T.W., Zhang, J.T., Dong, L., Zhu, J.Y., The performance increase of the wind-induced rotation VAWT by application of the passive variable pitching blade. International Journal of Low-Carbon Technologies, 2022, 1420-1434.

2. **Sun, X.J.**, Zhu, J., Hanif, A., Li, Z.J., Sun, G.X., Rotation improvement of vertical axis wind turbine by offsetting pitching angles and changing blade numbers. Energy, 2021, 119177.

3. **Sun, X.J.**, Zhu, J.Y., Li, Z.J., Sun, G.X., Effects of blade shape and its corresponding moment of inertia on self-starting and power extraction performance of the novel bowl-shaped floating straight-bladed vertical axis wind turbine. Sustainable Energy Technologies and Assessments, 2020, 38, 100648.

4. Liang, Z.W., Han, L.F., Chen, Y.Z., Han, L.X., Liu, Y., **Sun, X.J.**, Xu, H.X., Software Design for the TMSR Nuclear Energy Radiological and Chemical Control Area Access Control System. Nuclear Electronics and Detection Technology, 2017, 37(3): 295-301.

5. Zhang, N., Wang Q.Q., Guo, B., **Sun, X.J.**, Chen, Y.Z., Redundant state monitoring of the HA devices in reactor I&C system. Nuclear Science and Techniques, 2015, 38: 040603-1-6.

6. Wang, Q.Q., Yin, C.C., **Sun, X.J.**, Han, L.F., Chen, Y.Z., Li, Y.P., Liu, W., PID design and simulation of TMSR nuclear power control system. Nuclear Science and Techniques, 2015, 38: 020601-1-7.

7. Wang, Q.Q., Wei, Y.B., Han, L.F., **Sun, X.J.**, Chen, Y.Z., Li, Y.P., Liu, G., Application of FM353-based Control System for CRDM Testbed. Nuclear Electronics and Detection Technology, 2014, 34: 807-811.

8. Wang, Q.Q., Li, Y.P., Wei, Y.B., Chen, Y.Z., **Sun, X.J.**, TMSR Single Control Rod Drive Mechanism Control System and its Reliability Analysis, Proceedings of 2013 2nd International Conference on Measurement. Information and Control, ICMIC, 2013, 737-741.

Patents (selected)

1. Chen, X.W., Zou, Y., Cao, Y., **Sun, X.J.**, Loading method and loading equipment for fuel balls in molten salt ball bed reactors ,CN109671510A, 2019.
2. Chen, X.W., Zou, Y., Cao, Y., **Sun, X.J.**, Loading device for fuel balls in molten salt ball bed reactors, CN207367616U, 2018.
3. Chen, X.W., Zou, Y., Cao, Y., Yu, X.H., **Sun, X.J.**, The unloading method and apparatus for spherical components in fluid media, CN108022661A, 2018.
4. Han, L.F., **Sun, X.J.**, Chen, Y.Z., Hou, J., Liu, G.M. Laboratory safety monitoring system, CN106297138A, 2017.
5. Guo, B., Chen, Y.Z., Zhang, N., **Sun, X.J.**, Parameter screening and timing query-based alarm system, CN103970811A, 2014.