

Wen-Ren Yang

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Education

Ph. D. Electrical Engineering, University of Missouri-Columbia, USA, 2006.

M. S. Electrical Engineering, University of Missouri-Columbia, USA, 2002.

B. S. Electrical Engineering, National Taiwan University of Science & Technology, Taiwan, 1998.

Research Summary

1. Wavelet transform and neural network for power quality analysis; CT-12, CT-14, and CT-29 in smart grid.
2. Wavelet transform and neural network for predictive maintenance; wet-etching flow rate and vibration monitoring.
3. Industrial and agricultural IoT applications.
4. Wavelet transform and neural network for edge-diffraction detection.

Journal Papers

1. **Wen-Ren Yang**, "Discrete wavelet transform and radial basis neural network for semiconductor wet-etching fabrication flow rate analysis," IEEE Transactions on Instrumentation and Measurement, Vol. 61, No. 4, pp. 865-875, April 2012.
2. **Wen-Ren Yang** and Chau-Shing Wang, "Current measurement of resistance spot welding using DSP Tamkang Journal of Science and Engineering, Vol. 14, No. 1, pp. 33-38, 2011.
3. Liang-Rui Chen, Hai-Wen Chang, and **Wen-Ren Yang**, "LLC series resonant high-frequency sinusoidal power supplier," International Review of Electrical Engineering, Vol. 5, No. 5, pp. 2546-2552, November-December 2010.

4. Liang-Rui Chen, Shing-Lih Wu, Tsair-Rong Chen, and **Wen-Ren Yang**, "Study of lead-acid battery charging by using sinusoidal current," *International Review of Electrical Engineering*, vol. 5, no. 5, 2010.
5. Chuen-Ching Wang, **Wen-Ren Yang**, Jin-Jia Chen, and Wei-Wen Shi, "A modified flip-chip LED packaging design with enhanced light coupling efficiency for plastic optical fiber networks", *Journal of Electronic Packaging*, vol. 131, no. 4, pp. 041002-1~041002-8, December 2009.
6. **Wen-Ren Yang**, Ying-Shing Shiao, Ding-Tsair Su, and Chau-Shing Wang, "Design and implementation of fuzzy controllers for auto focus, auto exposure and zoom tracking," *Tamkang Journal of Science and Engineering*, vol. 11, no. 3, pp. 305-312, 2008.
7. Chau-Shing Wang, Liang-Rui Chen, and **Wen-Ren Yang**, "A novel voltage flicker measurement based on time-domain calculation," *International Journal on Electrical Engineering*, vol. 15, no. 6, pp. 435-440, 2008.

International Conference Papers

1. **Wen-Ren Yang** and Wen-Xun Yang, "Discrete wavelet transform and short time fourier transform applications: wafer microcrack and voltage sag detection, " *IEEE International Conference on System Science and Engineering*, Taipei, Taiwan. May, 2010.
2. **Wen-Ren Yang** et al, "Flywheel energy storage for voltage sag compensation," *IEEE International Conference on Power Electronics and Drive Systems*, Taipei, Taiwan. November 2009.
3. **Wen-Ren Yang**, Robert M. O'Connell, Chau-Shing Wang, Liang-Rui Chen, "Modeling of a wavelet-based voltage sag monitoring system and design for the mixed-signal integration circuit implementation," *IEEE International Conference on Industrial Technology*, Chengdu, China. April 2008.
4. **Wen-Ren Yang** and Yu-Lin Li, "Optical design and signal processing for a microcrack detection system," *IEEE International Conference on Industrial Electronics and Applications*, Taichung, Taiwan. June, 2010.
5. **Wen-Ren Yang**, "Short time discrete wavelet transform for wafer microcrack detection, " *IEEE International Symposium on Industrial Electronics*, Seoul, Korea. July 2009.
6. **Wen-Ren Yang**, "Spatial scanning-probe array system for silicon-on-insulator integrated circuits," the 51st *IEEE Midwest Symposium on Circuits and Systems*, Knoxville, USA. Aug., 2008.
7. **Wen-Ren Yang**, Po-Chao Huang, and Bill Nunnally, "Objective lens and diffraction characteristics in an electro-optical analog-to-digital converter," *IEEE CLEO/Pacific-Rim Conference*, Seoul, Korea, Aug. 2007.

Patents (Taiwan)

1. Short-time wavelet transform for voltage sag detection methodology, device, and power supply system, I442061.
2. Wafer inspection and methodology based on short-time wavelet transform, I560438.
3. Harmonics analysis system and methodology based on orthogonal frequency division multiplexing transmission, I408860.