

近年研究成果目錄(1995~迄今):

A. Journal Papers:

1. Kuo-Kai Shyu and Yung-Chang Chen, "Robust Tracking and Model Following for Uncertain Time-Delay Systems," *International Journal of Control*, Vol. 62, No. 3, pp. 589-600, 1995.
2. Kuo-Kai Shyu and Jun-Juh Yan, "Robust Stabilization of Uncertain System with Time-Varying Delay Using Variable-Structure Control" *Proceedings of the NSC-Part A: Physical Science and Engineering* Vol. 19, No. 5, pp. 447-451, 1995.
3. Kuo-Kai Shyu and Kuei-Yuh Liaw, "D-Stability Analysis for Discrete Delay Systems," *Journal of the Chinese Institute of Engineering*, Vol. 18, No. 4, pp. 575-581, 1995.
4. Kuo-Kai Shyu and Hsin-Jang Shieh, "Variable Structure Current Control for Induction Motor Drives by Space Voltage Vector PWM," *IEEE Transactions on Industrial Electronics*, Vol. 42, No. 6, pp. 572-578, 1995.
5. Kuo-Kai Shyu and Shaw-Keung Wu, "Adaptive Control for Uncertain Systems with Input Delay," *Journal of Control Systems and Technology*, Vol. 3, No. 3, pp. 221-226, 1995.
6. Kuo-Kai Shyu and Ching-Yao Lin, "Adaptive Sliding Mode Control for Variable Structure Systems with Constraint Control Input", *Dynamics and Control*, Vol. 6, No. 1, pp. 19-61, 1996.
7. Kuo-Kai Shyu and Shang-Ru Chen, "Estimation of Asymptotical Stability Region and Sliding Domain of Uncertain Variable Structure Systems with Bounded Controllers," *Automatica*, Vol. 32, No. 5, pp. 797-800, 1996.
8. Kuo-Kai Shyu, Peng-Hsien Chu and Li-Jen Shang, "Control of Robot Manipulators via Combination of Adaptive Sliding Mode Control and Compensated Inverse Dynamics Approach," *IEE Proceedings-Control Theory and Applications*, Vol. 143, No. 3, pp. 283-288, 1996.
9. Kuo-Kai Shyu and Hsin-Jang Shieh, "A New Switching Surface Sliding-Mode Speed Control for Induction Motor Drive Systems," *IEEE Transactions on Power Electronics*, Vol. 11, No. 4, pp. 660-667, 1996.
10. Kuo-Kai Shyu, Peng-Hsien Chu and Li-Jen Shang, "Tracking Control of Robot Manipulators with Parametric Uncertainty," *Journal of the Chinese Institute of Electrical Engineering*, Vol. 3, No. 3, pp. 253-259, 1996.
11. Kuo-Kai Shyu and Chih-Yuan Liu, "Variable Structure Controller Design for Robust Tracking and Model Following," *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 19, No. 6, pp. 1395-1397, 1996.

12. Kuo-Kai Shyu, Hsin-Jang Shieh and Sheng-Shang Fu, "Model Reference Adaptive Speed Control for Induction Motor Drive Using Neural Networks," *IEEE Transactions on Industrial Electronics*, Vol. 45, No. 1, pp. 180-182, 1997.
13. Faa-Jeng Lin, Sheng-Lyin Chiu, and Kuo-Kai Shyu, "A Novel Sliding Mode Position Controller for PM Synchronous Servo Motor Drive," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 34, No. 2, pp. 532-542, 1998.
14. Hsin-Jang Shieh, Kuo-Kai Shyu, and Faa-Jeng Lin, "Adaptive Estimation of Rotor Time-constant for Indirect Field-oriented Induction Motor Drive," *IEE Proceedings-Electric Power Applications*, Vol. 145, No. 2, pp. 111-118, 1998.
15. Kuo-Kai Shyu, Yao-Wen Tsai, and Chiu-Keng Lai, "Sliding Mode Control for Mismatched Uncertain Systems," *IEE-Electronics Letters*, Vol. 34, No. 24, pp. 2359-2360, 1998.
16. Hsin-Jang Shieh and Kuo-Kai Shyu, "Nonlinear Sliding Mode Torque Control with Adaptive Back Stepping Approach for Induction Motor Drive," *IEEE Transactions on Industrial Electronics*, Vol. 46, No. 2, pp. 380-389, 1999.
17. Kuo-Kai Shyu, Faa-Jeng Lin, Hsin-Jang Shieh, and Bor-Sen Juang, "Robust Variable Structure Speed Control for Induction Motor Drive," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 35, No. 1, pp. 215-224, 1999.
18. Faa-Jeng Lin, Kuo-Kai Shyu, and Yueh-Shan Lin, "Variable Structure Adaptive Control for PM Synchronous Servo Motor Drive," *IEE Proceedings-Electric Power Applications*, Vol. 146, No. 2, pp. 173-185, 1999.
19. Faa-Jeng Lin, Kuo-Kai Shyu, and Y.S. Lin, "DSP-based Minimax speed Sensorless Induction Motor Drive with Sliding Mode Model-following Speed Controller," *IEE Proceedings-Electric Power Applications*, Vol. 146, No. 5, pp. 471-478, 1999.
20. Kuo-Kai Shyu, Yao-Wen Tsai, and Chiu-Keng Lai, "Stability Regions Estimation for Mismatched Uncertain Variable Structure Systems with Bounded Controllers," *IEE-Electronics Letters*, Vol. 35, No. 16, pp. 1388-1390, 1999.
21. Rong-Jong Wai, Faa-Jeng Lin, and Kuo-Kai Shyu, "A Toggle Mechanism Servo System with Variable-Structure Model-Following Control," *International Journal of Systems Science*, Vol. 30, No. 11, pp. 1213-1225, 1999.
22. Kuo-Kai Shyu, Cheng-Yuan Chang, and Ming-Chu Kuo, "Self-tuning Controller with Fuzzy Filtered-X Algorithm," *IEE-Electronics Letters*, Vol. 36, No. 2, pp. 182-184, 2000.
23. Kuo-Kai Shyu, Chiu-Keng Lai, and Yao-Wen Tsai, "Optimal Position Control of Synchronous Reluctance Motor via Totally Invariant Variable Structure Control," *IEE Proceedings-Control Theory and Applications*, Vol. 147, No. 1, pp. 28-36, 2000.
24. Kuo-Kai Shyu and Cheng-Yuan Chang, "Modified FIR Filter with Phase Compensation Technique to Feedforward Active Noise Controller," *IEEE Transactions on Industrial Electronics*, Vol. 47, No. 2, pp. 444-453, 2000.

25. Kuo-Kai Shyu, Yao-Wen Tsai, Yung Yu, and Chiu-Keng Lai, "Decentralized Dynamic Output Feedback Controllers for Interconnected Systems with Mismatched Uncertainties Using New Sliding Mode Control," *International Journal of Systems Science*, Vol. 31, No. 8, pp. 1011-1020, 2000.
26. Kuo-Kai Shyu, Yao-Wen Tsai, Yung Yu and Kuang-Chiung Chang, "Dynamic Output Feedback Sliding Mode Design for Linear Unmatched Uncertain Systems," *International Journal of Control*, Vol. 73, No. 16, pp. 1463-1474, 2000.
27. Kuo-Kai Shyu, Yao-Wen Tsai, and Chiu-Keng Lai, "Dynamic Output Feedback Controllers for Mismatched Uncertain Variable Structure Systems," *Automatica*, Vol. 37, pp. 775-779, 2001.
28. Faa-Jeng Lin, R.J. Wei, Kuo-Kai Shyu, and T.M. Liu, "Recurrent Fuzzy Neural Network Control for Piezoelectric Ceramic Linear Ultrasonic Motor Drive," *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, Vol. 48, No. 4, pp. 900-913, 2001.
29. Kuo-Kai Shyu, Yao-Wen Tsai, and Chiu-Keng Lai, "Estimating Stability Regions for Mismatched Uncertain Variable Structure Systems with Bounded Controllers," *International Journal of Systems Science*, Vol. 32, No. 5, pp. 621-627, 2001.
30. Yao-Wen Tsai, Kuo-Kai Shyu and Kuang-Chiung Chang, "Decentralized Variable Structure Control for Mismatched Uncertain Large-Scale Systems: A New Approach," *Systems & Control Letters*, Vol. 43, pp. 117-125, 2001.
31. Cheng-Yuan Chang, Kuo-Kai Shyu and Tzu-Neng Chuang, "Active Noise Controller with Fuzzy Filtered-U Algorithm," *IEE-Electronics Letters*, Vol. 37, No. 8, pp. 543-545, 2001.
32. Kuo-Kai Shyu, Chiu-Keng Lai and John Y. Hung, "Totally Invariant State Feedback Controller for Position Control of Synchronous Reluctance Motor," *IEEE Transactions on Industrial Electronics*, Vol. 48, No. 3, pp. 615-624, 2001.
33. Faa-Jeng Lin, Kuo-Kai Shyu, and Rong-Jong Wai, "Recurrent Fuzzy Neural Network Sliding Mode Controlled Motor Toggle Servomechanism," *IEEE/ASME Transactions on Mechatronics*, Vol. 6, No. 4, pp. 453-466, 2001.
34. Kuo-Kai Shyu and Chiu-Keng Lai, "Incremental Motion Control of Synchronous Reluctance Motor via Multi-Segment Sliding Mode Control Method," *IEEE Transactions on Control Systems Technology*, Vol. 10, No. 2, pp. 169-176, 2002.
35. Cheng-Yuan Chang and Kuo-Kai Shyu, "A Self-Tuning Fuzzy Filtered-U Algorithm for the Application of Active Noise Cancellation," *IEEE Transactions on Circuits and Systems-I: Fundamental Theory and Applications*, Vol. 49, No. 9, pp. 1325-1333, 2002.
36. Kuo-Kai Shyu, Chiu-Keng Lai, Yao-Wen Tsai and Ding-I Yang, "A Newly Robust Controller Design for the Position Control of Permanent-Magnet Synchronous Motor," *IEEE Transactions on Industrial Electronics*, Vol. 49, No. 3, pp. 558-565, 2002.

- 37 Faa-Jeng Lin, Kuo-Kai Shyu, and Chih-Hong Lin, "Incremental Motion Control of Linear Synchronous Motor," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 38, No. 3, pp. 1011-1022, 2002.
- 38 Po-Lei Lee, Li-Fen Chen, Yu-Te Wu, Hsiu-Feng Chiu, Kuo-Kai Shyu, Tzu-Chen Yeh, Jen-Chuen Hsieh, "Classifying MEG 20Hz Rhythmic Signals of Left, Right Index Finger Movement And Resting State Using Cascaded Radial Basis Function Networks," *Journal of Medical and Biological Engineering*, Vol. 22, No.3, pp.147-152, 2002.
- 39 Wen-Der Chiou, Faa-Jeng Lin, and Kuo-Kai Shyu, "Incremental Motion Control of Induction Motor Servo drive via genetic algorithm based sliding mode controller," *IEE Proceedings-Control Theory and Applications*, Vol. 150, No. 3, pp. 209-220, 2003.
- 40 Kuo-Kai Shyu, Wen-Cheng Liu and Kou-Cheng Hsu "Decentralized Variable Control of Uncertain Large-scale Systems Containing a Dead Zone," *IEE Proceedings-Control Theory and Applications*, Vol. 150, No. 5, pp. 467-475, 2003.
- 41 Cheng-Yuan Chang and Kuo-Kai Shyu, "Active Noise Cancellation with a Fuzzy Adaptive Filtered-X Algorithm," *IEE Proceedings-Circuit, Devices Systems*, Vol. 150, No. 5, pp. 416-422, 2003.
- 42 Faa-Jeng Lin, Hsin-Jang Shieh, Kuo-Kai Shyu, and Po-Kai Huang, "On-line Gain-tuning IP Controller Using Real-coded Genetic Algorithm," *Electric Power Systems Research*, Vol. 72, No. 2, pp. 157-169, 2004
- 43 Kuo-Kai Shyu, Li-Jen Shang, Hwang-Zhi and Ko-Wen Jwo, "Flux Compensated Direct Torque Control of Induction Motors for Low Speed Operations," *IEEE Transactions on Power Electronics*, Vol. 19, No. 6, pp. 1608-1613, 2004.
- 44 Jun-Juh Yan, Kuo-Kai Shyu and Jui-Sheng Lin, "Adaptive Variable Structure Control for Uncertain Chaotic Systems Containing Dead-zone Nonlinearity," *Chaos Solitons & Fractals*, Vol. 25, No.2, pp. 347-335, 2005.
- 45 Jun-Juh Yan, Wei-Der Chang, Jui-Sheng Lin and Kuo-Kai Shyu, "Adaptive Chattering Free Variable Structure Control for a Class of Chaotic Systems with Unknown Bounded Uncertainties," *Physics Letters A*, Vol. 335, No. 4, pp. 274-281, 2005.
- 46 Chiu-Keng Lai and Kuo-Kai Shyu, "A Novel Motor Drive Design for Incremental Motion System via Sliding Mode Control Method," *IEEE Transactions on Industrial Electronics*, Vol. 52, No. 2, pp. 499-507, 2005.
- 47 Kuo-Kai Shyu, Wen-Cheng Liu and Kou-Cheng Hsu, "Design of Large-Scale Timed-Delayed Systems with Dead-Zone via Variable Structure Control," *Automatica*, Vol. 41, pp. 1239-1246, 2005.
- 48 Kuo-Kai Shyu and Yun-Yao Lii, "Compensation and Control of Dither-Smoothed Nonlinearities," *JSME International Journal: Mechanical Systems, Machine Elements and Manufacturing*, Vol. 49, No. 2, pp. 512-519, 2006.

- 49 Yao-Wen Tsai, Kai-Hsin Mai and Kuo-Kai Shyu, "Sliding Mode Control for Unmatched Uncertain Systems with Totally Invariant Property and Exponential Stability " *Journal of the Chinese Institute of Engineers*, Vol. 29, No. 1, pp. 179-183, 2006.
- 50 Po-Lei Lee, Jen-Chuen Hsieh, Chi-Hsun Wu, Kuo-Kai Shyu, Shyan-Shiou Chen, Tzu-Chen Yeh, and Yu-Te Wu, "The Brain Computer Interface Using Flash Visual Evoked Potential And Independent Component Analysis," *Annals of Biomedical Engineering*, Vol. 34, No. 10, pp. 1641-1654, 2006.
- 51 Jun-Juh Yan, Jui-Sheng Lin and Kuo-Kai Shyu, "Adaptive variable structure control of uncertain systems containing unknown gain reduction tolerance" *Asian Journal of Control*, Vol. 9, Issue 1, pp. 087-091, 2007.
- 52 K. K. Shyu and Ching-Ming Lai, "A Single Stage AC/DC Converter Based on zero voltage switching LLC Resonance Topology," *IET Proceedings-Electric Power Applications*, Vol. 1, Issue. 5, pp. 743-752, 2007.
- 53 C.Y. Lee, P. C. Tung, K. K. Shyu, and C. Y. Wu, "Development of an Automatic Arc Welding System Using a Variable Structure Model Reference Scheme," *The International Journal of Advanced Manufacturing Technology*, Vol. 35, No. 9-10, pp. 978-986, 2008.
- 54 K. K. Shyu, Ming-Ji Yang, Yen-Mo Chen and Yi-Fei Lin, "Model Reference Adaptive Control Design for a Shunt Active Power Filter System," *IEEE Transactions on Industrial Electronics*, Vol. 55, No. 1, pp. 97-106, 2008.
- 55 Po-Lei Lee, Jen-Chuen Hsieh, Chi-Hsun Wu, Kuo-Kai Shyu, and Yu-Te Wu, "Brain Computer Interface Using Onset and Offset Flash Visual Evoked Potentials," *Clinical Neurophysiology*, Vol. 119, pp. 605-616, 2008.
- 56 Kuo-Kai Shyu, Ming-Huan Lee, Yu-Te Wu and Po-Lei Lee, "Implementation of Pipelined FastICA on FPGA for Real-Time Blind Source Separation," *IEEE Transactions on Neural Networks*, Vol. 19, No. 6, pp. 958-970, 2008.
- 57 Po-Lei Lee, Li-Zen Shang, Yu-Te Wu, Chih-Hung Shu, Jen-Chuen Hsieh, Yung-Yang Lin, Chi-Hsun Wu, Yu-Lu Liu, Chia-Yen Yang, Chia-Wei Sun, and Kuo-Kai Shyu, "Single-Trial Analysis of Cortical Oscillatory Activities During Voluntary Movements Using Empirical Decomposition (EMD)-Based Spatiotemporal Approach," *Annals of Biomedical Engineering*, Vol. 37, No. 8, pp. 1683-1700, 2009.
- 58 S-Y Chen, F-J Lin, and Kuo-Kai Shyu, "Direct decentralized neural control for nonlinear MIMO magnetic levitation system," *Neurocomputing*, Vol. 72, No. 13-15, pp. 3220-3230, 2009.
- 59 F-J Lin, S-Y Chen, and Kuo-Kai Shyu, "Robust Dynamic Sliding-Mode Control Using Adaptive RENN for Magnetic Levitation System," *IEEE Transactions on Neural Networks*, Vol. 20, No. 6, pp. 938-951, 2009.
- 60 Li-Zen Shang, and Kuo-Kai Shyu, "A method for extracting chaotic signal from noisy environment," *Chaos Solitons & Fractals*, Vol. 42, No. 2, pp. 1120-1125, 2009.

- 61 Ming-Ji Yang, Hong-Lin Jhou, Bin-Yen Ma and Kuo-Kai Shyu, "A Cost-Effective Method of Electric Brake with Energy-Regeneration for Electric Vehicles," *IEEE Transactions on Industrial Electronics*, Vol. 56, No. 6, pp. 2203-2212, 2009.
- 62 Kuo-Kai Shyu and Yun-Yao Lee, "Vibration Control on a Pulse and Ramp Driven System with Friction," *Journal of Sound and Vibration*, Vol. 15, No. 12, pp. 1763-1781, 2009..
- 63 Kuo-Kai Shyu and Yun-Yao Lee, "Identification of Electromechanical Actuators within Limited Stroke," *Journal of Sound and Vibration*, 2009 (Accepted).
- 64 Yu-Te Wu, Kuo-Kai Shyu, Chii-Wen Jao, Zun-Yun Wang, Bin-Wen Soong, Hsiu-Mei Wu, and Po-Shan Wang, "Fractal Dimension Analysis for Quantifying Cerebellar Morphological Change of Multiple System Atrophy of The Cerebella Type (MSA-C)," *NeuroImage*, 2009 (To be published).
- 65 Yu-Te Wu, Kuo-Kai Shyu, Tzong-Rong Chen, Hui-Yung Chen, Hui-Hsin Wu, and Wan-Yuo Guo, "Using Three-Dimensional Fractal Dimension to Analyze the Complexity of Fetal Cortical Surface from MR Images," *Nonlinear Dynamics*, 2009 (To be published).

B. Conference Papers:

1. Kuo-Kai Shyu, Sheng-Shing Fu, and Hsin-Jang Shieh, "Artificial Neural Network Speed Control for Induction Motor Systems," *Proceedings of the Symposium on Electrical Power Engineering*, R.O.C., pp. 135-139, 1995.
2. Kuo-Kai Shyu and Kou-Cheng Hsu, "Decentralized Variable Structure Control Design for Uncertain Large-Scale Systems," *IASTED Conference: Modelling, Identification and Control*, Austria, 1996.
3. Kuo-Kai Shyu, Kou-Cheng Hsu and Peng-Hsien Chu, "Tracking Control of Robot Manipulators with Parametric Uncertainty," *IASTED Conference: Modelling, Identification and Control*, Austria, 1996.
4. Kuo-Kai Shyu and Yao-Wen Tsai, "Sliding Mode Control for a Class of Mismatched Uncertain Systems," *National Symposium on Automatic Control*, R.O.C., pp. 515-521, 1996.
5. Faa-Jeng Lin, Sheng-Lyin Chiu, and Kuo-Kai Shyu, "Adaptive Control of PM Synchronous Motor Drive Using VSS Approach," *Proceedings of the 1996 IEEE IECON*, Vol. 3-3, pp. 1740-1745, Taiwan, 1996.
6. Kuo-Kai Shyu, Hsin-Jang Shieh, and Cheng-Chiian Liu, "Adaptive Field-Oriented Control of Induction Motor with Rotor Flux Observation," *Proceedings of the 1996 IEEE IECON*, Vol. 2-3, pp. 1204-1209, Taiwan, 1996.

7. Kuo-Kai Shyu, Hsin-Jang Shieh, and Bor-Sen Zhuang, "DSP-Based Adaptive Field-Oriented Control for Induction Motor Drive," *Proceedings of the 17th Symposium on Electrical Power Engineering*, R.O.C., pp. 273-277, 1996.
8. Hsin-Jang Shieh and Kuo-Kai Shyu, "Robust Nonlinear Torque Control for Induction Motor Drive," *National Symposium on Automatic Control*, R.O.C., pp. 456-461, 1997.
9. Kuo-Kai Shyu, Hsin-Jang Shieh, and Kuan-Daa Pan, "Rotor Time-Constant Estimation for Indirect Field-Oriented Control of Induction Motor Drive," *Proceedings of the 18th Symposium on Electrical Power Engineering*, R.O.C., pp. 580-584, 1997.
10. Kuo-Kai Shyu, Yao-Wen Tsai, and Chiou-Keng Lai, "Estimation of Stability Regions of Mismatched Uncertain Variable Structure Systems with Bounded Controllers," *National Symposium on Automatic Control*, R.O.C., pp. 494-499, 1998.
11. Kuo-Kai Shyu, Chiu-Keng Lai, and John Y. Hung, "Position Control of Synchronous Reluctance Motor via Invariant Variable Structure Controller," *Proceedings of the 20th Symposium on Electrical Power Engineering*, R.O.C., pp. 421-425, 1999.
12. Kuo-Kai Shyu, John Y. Hung, and James C. Hung, "Total Sliding Mode Control of Robotic Manipulators," *Proceedings of the 1999 IEEE IECON*, San Jose, 1999.
13. Kuo-Kai Shyu and Cheng-Yuan Chang, "Fuzzy Adaptive Noise Control System," *National Symposium on Automatic Control*, R.O.C., pp. 529-533, 2000.
14. Kuo-Kai Shyu and Chiu-Keng Lai, "A Comparison for the Transient Torque Control of Synchronous Reluctance Motor with Dampers," *Proceedings of the 21st Symposium on Electrical Power Engineering*, R.O.C., pp. 421-425, 2000.
15. Kuo-Kai Shyu and Yao-Wen Tsai, "Sliding Mode control of Mismatched Uncertain Large-scale Systems Using Two Switching Surfaces," *National Symposium on Automatic Control*, R.O.C., pp. 184-189, 2001.
16. Kuo-Kai Shyu and Cheng-Yuan Chang, "Phase Compensated Algorithm to Adaptive Noise Control in Ducts with Fixed-point Type DSP Processor," *National Symposium on Automatic Control*, R.O.C., pp. 355-360, 2001.
17. Kuo-Kai Shyu and Kuan-Daa Pan, "Self-Decoupling Control of High Performance Induction Motor Drive," *Proceedings of the 2001 IEEE IECON*, Denver, 2001.
18. Cheng-Yuan Chang and Kuo-Kai Shyu, "A self-tuning fuzzy filtered-U algorithm with the application of active noise control," *Proceedings of the 2001 IEEE IECON*, Denver, 2001.
19. Kuo-Kai Shyu, Hsin-Jang Shieh, and Kun-Hsin Chiang, "DSP-based Variable-Structure PI and Fuzzy Control for Induction Motor Drives," *Proceedings of the 23th Symposium on Electrical Power Engineering*, R.O.C., pp. 1427-1431, 2002.
20. Kuo-Kai Shyu, Chiu-Keng Lai and Pi-Un Chen "Torque Sensitivity for Synchronous Reluctance Motor with Cage Rotor," *Proceedings of the 23th Symposium on Electrical Power Engineering*, R.O.C., 2002.

21. Cheng-Yuan Chang and Kuo-Kai Shyu, "Fuzzy Filtered-U Algorithm of Active Noise Cancellation," *National Symposium on Automatic Control*, R.O.C., 2002.
22. Cheng-Yuan Chang and Kuo-Kai Shyu, "A PD Based Fuzzy Control System for Crane," *National Symposium on Automatic Control*, R.O.C., 2002.
23. 徐國鎧、賴秋庚、張育源, "無刷直流馬達無感測器驅動系統之研製," *Proceedings of Taiwan Power Electronics Conference TPEC'02*, R.O.C., 2002.
24. Lee, P-L, Wu, Y-T, Chiu, H-F, Chen, L-F, Shyu, K-K, Yeh, T-C, Hsieh, J-C, "Classifying MEG Data of Left, Right Index Finger Movement And Resting State Using Radial Basis Functions Network. pp. 1027-1029. *Proceedings of the 13th international conference on Biomagnetism*. Aug. 10-14, Germany, 2002.
25. Kuo-Kai Shyu and Cheng-Yuan Chang, "Antiwindup Controller Design for Piezoelectric Ceramic Linear Ultrasonic Motor Drive," *Proceedings of the 2003 IEEE IECON*, USA, 2003.
26. Kuo-Kai Shyu, Ming-Ji Yang and Fang-Lin Chang, "Design and Implementation of Fast Response for Reverse Pulse Plating Power System," *Proceedings of the 23th Symposium on Electrical Power Engineering*, R.O.C., 2003.
27. Kuo-Kai Shyu, Yun-Yao Lee and Ruh-Hua Wu, "A Stability Study on Ramp-Controlled Pointing Systems," *National Symposium on Automatic Control*, R.O.C., 2003.
28. Chiu-Keng Lai and Kuo-Kai Shyu, "Drive Design for Motor Motion Control via Sliding Mode Control Method," *National Symposium on Automatic Control*, R.O.C., 2003.
29. 張政元, 徐國鎧, 李振山, "以單晶片8051為基礎之多重行程控制器設計," *National Symposium on Automatic Control*, R.O.C., 2003.
30. 徐國鎧, 紀進睿, 張政元, 賴國勝, "改良模糊控制器於線性壓電陶瓷馬達位置控制," *National Symposium on Automatic Control*, R.O.C., 2003.
31. Kuo-Kai Shyu, Fang-Bor Luoh and Cheng-Yuan Chang,, "Neural Based Algorithm for Active Noise Controller," *National Symposium on Automatic Control*, R.O.C., 2004.
32. 張政元, 徐國鎧, 徐世偉, "本土豬隻畜養環境控制系統之設計與實現," *National Symposium on Automatic Control*, R.O.C., 2004.
33. F.J. Lin, H.J. Shieh, K.K. Shyu, and P.K. Huang, "On-line gaing tuning IP controller using real coded genetic algorithm," *Proc. Electrical Power Engineering*, Tainan, Taiwan, pp. 1311-1316, 2004.
34. Kuo-Kai Shyu; Kou-Cheng Hsu; Wen-Jeng Liu, "Variable structure control of uncertain nonlinear system with a dead-zone input", *IEEE International Conference on Networking, Sensing and Control*, Vol.2, pp.955-960, 2004.

35. Kuo-Kai Shyu, Ming-Ji Yang, Jing-Heng Hong, Zong-Song Yang, and Bau-Hung Lin, "Automatic Voltage Regulator Using a Novel Phase-Shifted PWM Single-Phase Inverter," *Proceedings of the 2004 IEEE IECON*, Busan, Korea, 2004.
36. Kuo-Kai Shyu, Cheng-Lung Jen and Li-Jen Shang, "Design of Sliding-Mode Controller for Anti-Swing Control of Overhead Cranes," *Proceedings of the 2005 IEEE IECON*, North Carolina, 2005.
37. Kuo-Kai Shyu, Ming-Ji Yang, Yen-Mo Chen, and Yi-Fei Lin, "A Three-Phase Four-Wire AVR with IP Control under Unipolar PWM Operation," *Proceedings of the 2006 SPEEDAM*, Taormina, Italy, 2006.
38. Kuo-Kai Shyu, Ching-Ming Lai and K. W. Jwo, "Using Automatic Frequency-shifting Techniques for LLC-SRC Output Voltage Regulation," *Proc. IEEE/CES International Power Electronics and Motion Control Conference (IEEE/CES IPEMC)*, pp. 1595-1599, Shanghai, China, Aug. 2006. (EI)
39. Kuo-Kai Shyu, Cheng-Lung Jen and Li-Jen Shang, "Sliding-Mode Control for an Underactuated Overhead Crane System," *Proceedings of the 2006 IEEE IECON*, Paris, France, 2006.
40. Kuo-Kai Shyu, Ming-Ji Yang, Yen-Mo Chen, and Yi-Fei Lin, "Model Reference Adaptive Control Design for a Shunt Active Power Filter System," *Proceedings of the 2006 IEEE IECON*, Paris, France, 2006.
41. Kuo-Kai Shyu, Ming-Ji Yang and Te-Wei Wang, "Design Fuzzy SOC Estimator for Sealed Lead-Acid Batteries of EV in Reflex," *Proceedings of the 27th Symposium on Electrical Power Engineering*, R.O.C., 2006.
42. Kuo-Kai Shyu, Ming-Ji Yang, Ti-Fe Lin and Dong-Yi Wu, "Design An Adaptive Controller for Active Power Filter," *Proceedings of the 27th Symposium on Electrical Power Engineering*, R.O.C., 2006.
43. Ching-Ming Lai, M-H Pan and Kuo-Kai Shyu, "A Single Stage LLC Resonant Converter with High Power Factor Input," *Proceedings of the 27th Symposium on Electrical Power Engineering*, R.O.C., 2006.
44. Kuo-Kai Shyu, Ming-Huan Li, "FPGA Implementation of FastICA based on Floating-Point Arithmetic Design for Real-Time Blind Source Separation," *International Joint Conference on Neural Networks, IJCNN '06*, 16-21 July, pp.2785-2792, 2006.
45. Ching-Ming Lai, Rong-Chyang Lee, Te-Wei Wang and Kuo-Kai Shyu, "Design and Implementation of a Single-Stage LLC Resonant Converter with High Power Factor," *IEEE International Symposium on Industrial Electronics, ISIE 2007*, 4-7 June, pp. 455-460, 2007.
46. Kuo-Kai Shyu, Ko-Wen Jwo, Zheng-Yong Chen and Chih-Hung Lo, "Inductive Power Supply System with Fast Full-Duplex Information Rate Device," *EUROCON 2007, The International Conference on "Computer as a Tool"*, 9-12 Sept., pp. 1382-1386, 2007.

47. Kuo-Kai Shyu, Ming-Huan Lee, Ci-Hao Huang, Zhao-Xian Chen, Chien-Ming Huang, Hong-Lin Jhou, and Ko-Wen Jwo, "Central control unit design of multi-function intelligent nursing systems," Proceedings of 2007 CACS International Automatic Control Conference, R.O.C., 2007.
48. Inductive Power Supply System with Fast Full-Duplex Information Rate Device Kuo-Kai Shyu, Ko-Wen Jwo, Zheng-Yong Chen, and Chih-Hung Lo, 2007
49. Kuo-Kai Shyu, Ming-Huan Lee, Yun-Jen Chiu, Ming-Hong Lin, Ren-Jie Lai, and Hsiang Hsu, "Circuit design for development of an intelligent limb-motion synchronization robot system," Proceedings of 2008 CACS International Automatic Control Conference, R.O.C., 2008.
50. MRI Image Segmentation Based on Fast Global Minimization of Snake Model, Thi-Thao Tran, Po-Lei Lee, Van-Truong Pham and Kuo-Kai Shyu, 2008 10th Intl. Conf. on Control, Automation, Robotics and Vision
51. Quantifying Brain Atrophy of Multiple System Atrophy of the Cerebellar Type (MSA-C) Using Fractal Dimension Analysis, Z.Y. Wang, B.W. Soong, P.S. Wang, C.W. Jao, K.K. Shyu, and Y.T. Wu, IFMBE Proceedings 25/II, p. 940 ff.
52. Implementation of EMD Algorithm for ECG Noise Reduction, K.K. Shyu, P.L. Lee, M.H. Lee, and C.M. Huang, IFMBE Proceedings 25/IV, p. 1095 ff.
53. Kuo-Kai Shyu, Ming-Huan Lee, and Yun-Jen Chiu, "Circuit design for development of an intelligent limb-motion synchronization robot system," Proceedings of 2009 CACS International Automatic Control Conference, R.O.C., 2009.
54. Kuo-Kai Shyu, Po-Lei Lee, Ming-Huan Lee, and Chien-Ming Huang, "Implementation of EMD Algorithm for ECG Noise Reduction," in Proc. International Federation for Medical and Biological Engineering, WC 2009, 7-12 September 2009 Page(s): 1095 - 1098

C. Reports:

1. Variable Structure Controllers Design for Time-Delay Systems, NSC-84-2213-E008-026, June, 1995.
2. A Robust Current Controller with Low Switching Frequency VSI for Induction Motor, NSC-84-2213-E-008-030, June, 1995.
3. 感應伺服馬達可變結構驅動系統功能之改善(I), NSC-85-2213-E-008-033, June, 1996.
4. 光阻覆蓋機旋轉控制系統研發(I), NSC-85-2213-E-008-035, February, 1996.
5. 感應伺服馬達可變結構驅動系統功能之改善(II), NSC-85-2213-E-008-020, July, 1997.

6. 光阻覆蓋機旋轉控制系統研發(II), NSC-85-2213-E-008-020, July, 1997.
7. 感應伺服馬達可變結構驅動系統功能之改善(III), NSC-85-2213-E-008-020, July, 1998.
8. 光阻覆蓋機旋轉控制系統研發(III), NSC-85-2213-E-008-020, July, 1998.
9. 高性能伺服感應馬達驅動器之解耦控制方法, NSC-88-2213-E-008-044, July, 1999.
10. 同步磁阻馬達之高靈敏轉矩控制方法, NSC89-2213-E-008-042, July, 2000.
11. 開關磁阻馬達之自我調適脈動轉矩改善方法, NSC-89-2213-E-008-074, July, 2001.
12. 航空級無感測試DSP無刷馬達驅動器研究分析與測試驗證,BW89258, May, 2000.
13. 電梯節約能源之控制器及驅動器之研究, NSC90-ET-7-008-002, December, 2001.
14. 高性能開關磁阻馬達之非線性控制方法(I), NSC-90-2213-E-008-053, July, 2002.
15. 機電控制豬舍溫度及通風控制系統之研究, 91農科-6.1.1-牧U1, December, 2002.
16. 電梯節約能源之控制器及驅動器之研究(91-2623-7-008-015-ET), December, 2002.
17. 快速響應反脈衝式電鍍電源系統之研製, NSC-91-2622-E-008-016-C33, June, 2003.
18. 高性能開關磁阻馬達之非線性控制方法(II), NSC-91-2213-E-008-055, July, 2003.
19. 應用模糊控制於艦艇推進系統快速充電之研究, XJ92013P, November, 2003.
20. 本土性豬舍環境控制系統之研發, 92農科-6.1.1-牧U1, December, 2003.
21. 高性能開關磁阻馬達之非線性控制方法(III), NSC-92-2213-E-008-015, July, 2004.
22. 以DSP數位信號處理器為基礎之新型快速響應交流穩壓器之研製(92-2622-E-008-027-CC3), November, 2004.
23. 開關式磁阻馬達設計、驅動、控制及應用—子計畫三：非線性控制方法於開關磁阻馬達驅動器之高性能應用(2/2)(92-2213-E-008-015), July, 2004.
24. 九十三年度國立大學矽導相關系所人才培育計畫, 93補293, Feb., 2004.
25. 新型三相交流穩壓器之研製, NSC94-2622-E-008-001-CC3, May, 2005.
26. 九十四年度國立大學矽導相關系所人才培育計畫, 94補293, Feb., 2005.
27. 兩輪自走車之電源系統研製(I), NSC93-2218-E-008-024, July, 2005.
28. 開關式磁阻馬達位置控制, NSC93-2213-E-008-045-, July, 2005.

29. 心肺音擷取及分析系統, NSC94-2815-C-008-021-E (大專生專題計畫), July, 2006.
30. 兩輪自走車之電源系統研製(II), NSC94-2218-E-008-024, July, 2006.
31. 看護系統整合控制(II), NSC94-2218-E-008-008, Oct., 2006.
32. 兩輪自走車之電源系統研製(III), NSC94-2218-E-008-024, July, 2007.
33. 看護系統整合控制(III), NSC94-2218-E-008-008, Oct., 2007.
34. 應用於電動車之多模組鋰電池充電系統之研製(96-2622-E-008-015-CC3), 2008.

D. 專利

1. 高功因輸入特性之單級邏輯連接控制電源轉換裝置, 中華民國新型專利, 證書號: M312840, 專利權法定起迄日: 2007/5/21 – 2016/11/23。
2. 具負載與間距偵測之非接觸式供電裝置 (NON-CONTACT POWER SYSTEM WITH LOAD AND GAP DETECTION), 美國發明專利, 證書號: US 7,323,964 B1, 專利權法定起日: 2008/01/29 – 2028/01/28。
3. 單一電源具擴充性隔離式功率電晶體驅動器 (POWER-DIODE DRIVER HAVING EXPANSIBLE ISOLATED SUB-DRIVERS USING SINGLE POWER SOURCE), 美國發明專利, 證書號: US 7,541,847 B2, 專利權法定起迄日: 2009/06/02 – 2029/06/01。