



Curriculum Vitae

Contact Information

Manukid Parnichkun
Asian Institute of Technology
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I. Biographical Data

A. Name

Prof. Manukid Parnichkun
ศาสตราจารย์ มนูกิจ พาณิชกุล

B. Education

[**Ph.D.**] in Precision Machinery Engineering. The University of Tokyo, Japan. 1996.
Thesis Title: Cooperation of Multiple Robots by CDCSMA-CD Communication Method and GSGM Movement Model.
[**M.Eng.**] in Precision Machinery Engineering. The University of Tokyo, Japan. 1993.
Thesis Title: Cooperation of Autonomous Mobile Robots in Searching Unknown Environment and Making Map.
[**B.Eng.**] (1st rank of the class of 80 students, Honors) in Mechanical Engineering. Chulalongkorn University, Thailand. 1991.
Senior Project Title: Analysis of Strength of Car Body.

C. Positions held

February 2016 - now: **Professor**, Asian Institute of Technology
January 2001 – January 2016: **Associate Professor**, Asian Institute of Technology
November 1996 – December 2000: **Assistant Professor**, Asian Institute of Technology
November 2012, November 2013, November 2014, November 2015 **Visiting Professor**, Warsaw University of Technology, Poland
January 2009, December 2009-January 2010, December 2010-January 2011: **Visiting Professor**, Ecole Centrale de Nantes, France, for European Master on Advanced Robotics (EMARO)

D. Special honors and awards

Keynote Speaker at the International Conference on Robotics, Automation and Non-Destructive Evaluation (RANE 2019), Advanced Researches in Robotics and Mechatronics, Chennai, India, 2019
Distinguished Teaching Award 2019 from Asian Institute of Technology for Larger than 15-Student Class Size Category, 2019

Keynote Speaker at the 6th International Conference on Robotics, Informatics and Intelligent Control Technology (RIIT 2018), Dynamics Control of Advanced Mechatronics Systems, Bangkok, Thailand 2018.

Keynote Speaker at the 6th International Conference on Mechatronics (ICOM'17), Balancing Control of Unstable Systems, Kuala Lumpur, Malaysia, 2017.

Outstanding Paper Award, Development of 2-DOFs H_∞ Loop Shaping Structured Control on Pneumatic Servo System, the 2017 TRS Conference on Robotics and Industrial Technology (CRIT 2017), Bangkok, Thailand, 2017.

GIAN Scholar Recipient granted by Ministry of Human Resource Development, Government of India for Global Initiatives of Academic Network (GIAN) Program for conducting the course of Mechatronics: Synergic Integration of Mechanics, Electronics, and Information Technology, 2016.

Runner-up Paper Award, Control of Bicycle Leaning with Steering and Mass-Moving Stabilization, the 7th TSME International Conference on Mechanical Engineering, ICoME 2016, Chiang Mai, Thailand 2016.

Keynote Speaker at the 2016 TRS Conference on Robotics and Industrial Technology (CRIT 2016), Robots and Machines Development: From Imagination to Implementation and 15 Years of Thai Robotics Society: Where do we head for?, Bangkok, Thailand, 2016.

Keynote Speaker at the 2014 TRS Conference on Robotics and Industrial Technology (CRIT 2014), Robotics Activities in Thailand at a Crossroad, Bangkok, Thailand, 2014.

Invited Speaker at the Third International Conference of Information and Communication Technology for Embedded Systems, ICICTES 2012, From Intelligent Vehicle to Bicycle Robots: Embedded System in Control Applications, Bangkok, Thailand, 2012.

Champion Award, 150,000 Baht Cash Prize, Mecha-Bike Team, BicyRobo Thailand Championship, 2012.

Honor Award in Recognition of Contribution to Thai Robotics Society, the 2011 TRS Conference on Robotics and Industrial Technology (CRIT 2011), 2011.

Excellent Creativity Award, 50,000 Baht Cash Prize, Ex-Bike Team, BicyRobo Thailand Championship, 2010.

Champion Award, 300,000 Baht Cash Prize, Kuen-Chai Team, Thailand Intelligent Vehicle Challenge 2009.

Excellent Creativity Award, 50,000 Baht Cash Prize, Pak-Shee Team, Thailand Intelligent Vehicle Challenge, 2009.

First Runner-Up Award, 200,000 Baht Cash Prize, Little MEC Team, Thailand Intelligent Vehicle Challenge 2008.

First Runner-Up Award, 100,000 Baht Cash Prize, Aerotronix I Team, Thailand Intelligent Vehicle Challenge 2007.

Best Paper Award, Preliminary Study and Design of an Exoskeleton, the 2007 TRS Conference on Robotics and Industrial Technology (CRIT 2007), Nakorn Pathom, Thailand, 2007.

Keynote Speaker at the 2007 TRS Conference on Robotics and Industrial Technology (CRIT 2007), Unmanned Car Technology and Performance Review: A Case Study from the Inaugural Thailand Intelligent Vehicle Challenge, Nakorn Pathom, Thailand, 2007.

National Key Inventor honored by Krungthep Thurakij Newspaper, 1 January 2007.

3rd rank in the top 25 most downloaded article of the International Journal of Machine Tools & Manufacture. Elsevier Science Ltd. during Jul-Sep 2004, Geometric and Force Errors Compensation in a 3-axis CNC Milling Machine.

6th rank in the top 25 most downloaded article of the International Journal of Mechatronics. Elsevier Science Ltd., Pergamon during Oct-Dec 2004, Force Control in a Pneumatic System Using Hybrid Adaptive Neuro-Fuzzy Model Reference Control.

Elected President, Thai Robotics Society, 2003-2004

Invited Speaker at the 2004 International Conference on Control, Automation, and Systems (ICCAS 2004), Advanced Researches and Development in Mechatronics, Robotics, and Automation in Thailand, Bangkok, Thailand, 2004.

E. Languages Skill

Thai Native
English Fluently
Japanese Conversation

II. Pedagogy

A. Instructor

AT74.02 Control Theory
AT74.03 Sensing and Actuation
AT74.05 AI and Neuro-Fuzzy Theory

III. Student Research Supervision

A. Theses supervised.

3.A.1 Summary of student research supervision at AIT (November 1996 – January 2018)

	COMPLETED		IN-PROGRESS	
STUDENTS	Chair of the Committee	Co-Chair of the Committee	Chair of the Committee	Co-Chair of the Committee
Doctoral	21		4	
Master's	172		5	

IV. Research

Scopus: H-index = 14, Citations = 765, Publications = 73 as of November 2019 (excluded self citations).

Google Scholar: H-index = 20, Citations = 1437, as of November 2019

A. Publications

1. Books and Monographs

1. Chirdpong Deelertpaiboon, **Manukid Parnichkun**, Fusion of Local and Global Information for the Localization of an Intelligent Vehicle, published by LAP Lambert Academic publishing, ISBN 978-3-8433-7904-5, 2010, 80 Pages.
2. Ning Xi, Toshio Fukuda, **Manukid Parnichkun**, Proceedings of the 2008 IEEE International Conference on Robotics and Biomimetics, ISBN 978-1-4244-2679-9, 2009.
3. Editor of Proceedings of the 2002 IEEE International Conference on Industrial Technology Vol I, 2002, 672 pages.
4. Editor of Proceedings of the 2002 IEEE International Conference on Industrial Technology Vol II, 2002, 699 pages.
5. Editor of Plenary Sessions Book of the 2002 IEEE International Conference on Industrial Technology, 2002, 229 pages.
6. Editor of Journal of Thai Robotics Society, Vol.1, No.1, 2001, 84 pages.

2. Articles in Refereed International Journals

1. Chaiyaporn Silawatchananai and **Manukid Parnichkun**, "Haptics Control of an Arm Exoskeleton for Virtual Reality Using PSO based Fixed Structure H_∞ Control," *International Journal of Advanced Robotic Systems.*, May 2019, DOI: 10.1177/1729881419849198, (2019) Impact Factor 1.223.
2. Sondarangallage D.A. Sanjeewa and **Manukid Parnichkun**, "Control of Rotary Double Inverted Pendulum System Using Mixed Sensitivity H_∞ Controller," *International Journal of Advanced Robotic Systems.*, March 2019, DOI: 10.1177/1729881419833273, (2019) Impact Factor 1.223.
3. Kyu Won Kim, No Cheol Park, Weon Keun Song, Moon Kyum Kim, and **Manukid Parnichkun**, "Sensitivity Analysis of Cable Parameters on Tension of a Suspended Cable

- under Combination Resonances.” *International Journal of Structural Stability and Dynamics*, Vol. 19 No. 3, World Scientific Publishing Company (2018), 26 pages Impact Factor 2.082.
4. Anantachai Naijit, **Manukid Parnichkun**, Chailerd Pichitpornchai, “Brain-Computer-Interface based Automatic Control of Robo-Rat Using A-Star.” *International Journal of Biosensors & Bioelectronics*, Vol. 4 Issue 3, MedCrave, (2018), pp.114-118.
 5. Noppadol Ajjanaromvat and **Manukid Parnichkun**, "Trajectory Tracking Using Online Learning LQR with Adaptive Learning Control of a Leg-Exoskeleton for Disorder Gait Rehabilitation," *International Journal of Mechatronics*. Elsevier Science Ltd.. Vol.51, pp.85-96. (2018) Impact Factor 1.823.
 6. Nicom Promkajin and **Manukid Parnichkun**, "Development of a Robust Attitude Control for Non-Identical Rotors Using SMC," *International Journal of Advanced Robotic Systems*. Vol.15, Issue 1, DOI: 10.1177/1729881417753554, (2018) Impact Factor 1.223.
 7. Wiput Tuvayanond and **Manukid Parnichkun**. “Position Control of a Pneumatic Surgical Robot Using PSO based 2-DOF H_∞ Loop Shaping Structured Controller," *International Journal of Mechatronics*. Elsevier Science Ltd. Vol.43, pp.40-55. (2017) Impact Factor 1.823.
 8. Chan Moon Kim and **Manukid Parnichkun**. “Prediction of settled water turbidity and optimal coagulant dosage in drinking water treatment plant using a hybrid model of k-means clustering and adaptive neuro-fuzzy inference system," *International Journal of Applied Water Science*, Springer. (2017).
 9. Surachat Chantarachit and **Manukid Parnichkun**. “Development and Control of a Unicycle Robot with Double Flywheels," *International Journal of Mechatronics*. Elsevier Science Ltd. Vol 40, pp.28-40, (2016) Impact Factor 1.823.
 10. Chan Moon Kim and **Manukid Parnichkun**. “MLP, ANFIS and GRNN based real-time coagulant dosage determination and accuracy comparison using full-scale data of a water treatment plant," *Journal of Water Supply: Research and Technology - AQUA* (2016).
 11. Petrus Sutyasadi and **Manukid Parnichkun**. “Gait Tracking Control of Quadruped Robot Using Differential Evolution Based Structure Specified Mixed Sensitivity H_8 Robust Control," *Journal of Control Science and Engineering*. Hindawi Publishing Corp., Vol. 2016, Article ID 8760215, 18 pages, 2016. doi:10.1155/2016/8760215 (2016). Impact Factor 0.68.
 12. Geemal Wattaranthenna and **Manukid Parnichkun**. “Unmanned Vehicle Guidance Using GPS and Digital Low Pass Filtering," *International Journal of Advance Research in Computer Science and Software Engineering*. Vol.6, Issue 5. (2016). Impact Factor 2.5.
 13. Chu Anh My and **Manukid Parnichkun**. “Kinematic Performance and Structural Analysis for the Design of a Serail - Parallel Manipulator Transferring Billet for Hot Extrusion Forging Process," *International Journal of Advanced Robotic Systems*. Vol.12:186, DOI: 10.5772/62026 (2015) Impact Factor 1.223.
 14. Somphong Thanok and **Manukid Parnichkun**. “Longitudinal Control of an Intelligent Vehicle Using Particle Swarm Optimization based Sliding Mode Control,” *International Journal of Advanced Robotics*. Robotics Society of Japan. Vol.29, No.8, (2015), Impact Factor 0.73.
 15. Suppachai Howimanporn and **Manukid Parnichkun**. “Control of an X-Y Planar Inverted Pendulum Using PSO based SMC,” *International Journal of Robotics and Automation*. ACTA Press, Vol.30, Issue 4, pp.310-321, (2015), Impact Factor 0.44.
 16. Kanjanapan Sukvichai and **Manukid Parnichkun**. “Double-Level Ball-Riding Robot Balancing: from System Design, Modeling, Controller Synthesis, to Performance Evaluation,” *International Journal of Mechatronics*. Elsevier Science Ltd., Vol.24, pp.519-532. (2014) Impact Factor 1.823.
 17. M.H.Aziz, E.L.J. Bohez, Roongrat Pisuchpen, **M. Parnichkun**, “Petri Net model of repetitive push manufacturing with Polca to minimize value added WIP,” *International Journal of Production Research*, Taylor and Francis, (2014).
 18. **Manukid Parnichkun**. “Robotics Activities in Thailand at a Crossroad,” *Journal of Robotics Society of Japan*, Vol. 30, No. 10, pp 946 (2012).
 19. Md. Rokunuzzaman, Nitin Afzulpurkar, **Manukid Parnichkun**. “A Computer Vision

- Algorithm for Defect Detection and Sorting of Tomatoes,” *International Journal of Advanced Manufacturing Systems*, International Science Press: Vol 3, No.2, pp 129-138 (2012).
20. Md. Rokunuzzaman, **Manukid Parnichkun**,Nitin Afzulpurkar. “Automated Identification of Various Defects in Tomatoes and It’s Sorting,” *International Journal of Advanced Mechatronics and Robotics*, International Science Press: Vol 4, No.2, pp 89-97 (2012).
 21. Thanana Nuchkrua and **Manukid Parnichkun**, “Identification and Optimal Control of Quadrotor,” *Thammasat International Journal of Science and Technology*, Vol. 17, No. 4, pp 36-53 (2012)
 22. Viroch Sukontanakarn and **Manukid Parnichkun**. “Hybrid NN Predictive based LQR Controller for Rotary Double Inverted Pendulum Systems, an Analytical Study,” *International Journal of Automation and Control*.Inderscience Enterprises Limited, Vol. 5, No. 4, pp.337-355 (2011).
 23. Yunyong Punsawad,Sittichai Aempedchr, Yodchanan Wongsawat, and**Manukid Parnichkun**. “Weighted-Frequency Index for EEG-based Mental Fatigue Alarm System,” *International Journal of Applied Biomedical Engineering*. Vol. 4, No. 1, pp.36-41 (2011).
 24. Ravipudi Rao, B.K. Patel, and **Manukid Parnichkun**.“Industrial Robot Selection Using a Novel Decision Making Method Considering Objective and Subjective Preferences,” *International Journal of Robotics and Autonomous Systems*.ElsevierVol. 59, Issue 6, pp.367-375 (2011) Impact Factor 1.361
 25. Narong Aphiratsakun and **Manukid Parnichkun**. “Balancing Control of Leg Exoskeleton Using ZMP based Jacobian Compensation,” *International Journal of Robotics and Automation*. Acta Press, Vol. 25, No. 4 (2010) Impact Factor 0.44
 26. Trung Thanh Bui,**Manukid Parnichkun** and Chi HieuLe. “Structure Specified H_{∞} Loop Shaping Control for Balancing of Bicycle Robots: A Particle Swarm Optimization Approach,” *Journal of Systems and Control Engineering*,Selected Papers from Proceedings of the Institution of Mechanical Engineers, PartI.Vol. 224, No. 2/2010 (2010) Impact Factor 0.322
 27. Narong Aphiratsakun and **Manukid Parnichkun**. “Balancing Control of AIT Leg Exoskeleton Using ZMP based FLC,” *International Journal of Advanced Robotic Systems*. Vol. 6, No. 4, pp. 319-328 (2009) Impact Factor 1.223
 28. Viroch Sukontanakarn and **Manukid Parnichkun**. “Real-Time Optimal Control for Rotary Inverted Pendulum,” *American Journal of Applied Sciences*. Vol. 6 (6) pp.1106-1115 (2009)
 29. Somyot Kaitwanidvilai, Anuwat Jangwanitlert, and **Manukid Parnichkun**. “Structured Robust Loop Shaping Control for HIMAT System Using PSO,” *IAENG Transactions on Engineering Technologies*. Vol.1, pp. 23-34 (2008)
 30. Chirdpong Deelertpaiboon, **Manukid Parnichkun**, “Fusion of GPS, Compass, and Camera for Localization of an Intelligent Vehicle,” *International Journal of Advanced Robotic Systems*. Vol. 5, No. 4, pp. 315-326 (2008) Impact Factor 1.223
 31. Ravipudi Rao and **Manukid Parnichkun**.“Flexible manufacturing system selection using a combinatorial mathematics based decision making method,” *International Journal of Production Research*. Taylor & Francis, ISSN 0020-7543 print / ISSN 1366-588X online (2008) Impact Factor 0.774
 32. Bui Trung Thanh and **Manukid Parnichkun**. “Balancing Control of Bicyrobo by Particle Swarm Optimization-based Structure Specified Mixed H_2/H_{∞} Control,” *International Journal of Advanced Robotic Systems*. Vol. 5, No. 4, pp. 395-402 (2008)Impact Factor 1.223
 33. Somyot Kaitwanidvilai and **Manukid Parnichkun**. “Design of Structured Controller Satisfying H_{∞} Loop Shaping Using Evolutionary Optimization: Application to a Pneumatic Robot Arm,” *Engineering Letters*. International Association of Engineers. Vol. 16, Issue 2, pp 193-201 (2008).
 34. Theerayuth Chatchanayuenyong and **Manukid Parnichkun**. “Time Optimal Hybrid Sliding Mode-PI Control for an Autonomous Underwater Robot,” *International Journal of Advanced Robotic Systems*. Vol.5, No.1, March, (2008). Impact Factor 1.223
 35. Chailerd Pichitpornchai and **Manukid Parnichkun**. “Research and Development of a Medical Tele-Analyzer for Tactile Sensation: A New Dimension of Telemedicine,” *Korean*

- Journal of Physiology and Pharmacology*. Vol. 10, Supp/1, pp. 11-14 (2006).
36. Sukon Puntunan and **Manukid Parnichkun**. "Online Self-Tuning Precompensation for a PID Heading Control of a Flying Robot," *International Journal of Advanced Robotic Systems*. Vol. 4, No. 3, pp 323-330 (2006). Impact Factor 1.223
 37. Theerayuth Chatchanayuenyong and **Manukid Parnichkun**. "Neural Network Based-Time Optimal Sliding Mode Control for an Autonomous Underwater Robot," *International Journal of Mechatronics*. Elsevier Science Ltd., Pergamon. Vol. 16, No 8, pp. 471-478 (2006) Impact Factor 1.823
 38. Matthew N. Dailey and **Manukid Parnichkun**, "Landmark-based Simultaneous Localization and Mapping with Stereo Vision." *International Journal for Manufacturing Science & Technology*. Advanced Manufacturing Solutions. Vol. 8, No. 2, pp. 17-22 (2006)
 39. Md. Rokunuzzaman, Md. Wahedul Islam, **Manukid Parnichkun**. "A New Control Approach for Tomato Defect Sorting with Machine Vision System," *Journal of Engineering and Technology*. Islamic University of Technology. Vol. 5 No. 2, pp. 31-42 (2006)
 40. Anan Suebsomran and **Manukid Parnichkun**. "Disturbance Observer-Based Hybrid Control of Displacement and Force in a Medical Tele-Analyzer," *International Journal of Control, Automation, and Systems*. ICASE and KIEE. Vol. 3, No. 1, pp. 70-78 (2005)
 41. Somyot Kaitwanidvilai and **Manukid Parnichkun**. "Force Control in a Pneumatic System Using Hybrid Adaptive Neuro-Fuzzy Model Reference Control," *International Journal of Mechatronics*. Elsevier Science Ltd., Pergamon. Vol.15/1, pp. 23-41 (2005), (6th rank in the top 25 most downloaded article of the journal during Oct-Dec 2004), Impact Factor 1.823
 42. Somyot Kaitwanidvilai and **Manukid Parnichkun**. "Genetic Algorithm based Fixed-Structure Robust H_∞ Loop Shaping Control of a Pneumatic Servo System," *Journal of Robotics and Mechatronics*. JSME. Vol. 16, No. 4, pp. 362-373 (2004)
 43. Chana Raksiri and **Manukid Parnichkun**. "Geometric and Force Errors Compensation in a 3-axis CNC Milling Machine," *International Journal of Machine Tools & Manufacture*. Elsevier Science Ltd. Vol. 44/12-13, pp. 1283-1291 (2004) (3rd rank in the top 25 most downloaded article of the journal during Jul-Sep 2004), Impact Factor 1.576
 44. **Manukid Parnichkun** and Charoen Ngaechoenkul. "Kinematics Control of a Pneumatic System by Hybrid Fuzzy PID," *International Journal of Mechatronics*. Elsevier Science Ltd., Pergamon. Vol.11, No.8, pp. 1001-1023 (2001), Impact Factor 1.823
 45. **Manukid Parnichkun** and Viraphan Samadi. "Implementation of a Long Range LRF by Automatic Multi-Mode Measurement Scheme," *Journal of Circuits, Systems, and Computers (JCSC)*. World Scientific. Vol. 10, No.1&2, pp.113-135 (2000), Impact Factor 0.099
 46. **Manukid Parnichkun** and Prapot Airtan. "Pulse-Signaling Algorithm: A Non-Device-Based Robotics Control and Communication," *International Journal of Advanced Robotics*. Robotics Society of Japan. Vol.13, No.5, pp.539-548 (1999), Impact Factor 0.737
 47. **Manukid Parnichkun** and Shigeo Ozono. "GSGM Movement Model for Cooperative Robots System," *International Journal of Mechatronics*. Elsevier Science Ltd., Pergamon, Vol.8, No.8, pp. 905-925 (1998), Impact Factor 1.823
 48. **Manukid Parnichkun** and Shigeo Ozono. "CDCSMA-CD Communication Method for Cooperative Robot Systems," *International Journal of Advanced Robotics*. Robotics Society of Japan. Vol.11, No.7, pp. 669-694 (1998), Impact Factor 0.737

3. Papers in Refereed Conference Proceedings

1. Nguyen Cao Thang, **Manukid Parnichkun**, Phan Thi Tra Mi, Nguen Nhu Hieu, Le Thi Hong Gam and Pham Ngoc Chung, "Force Control of an Upper Limb Exoskeleton for Perceiving Reality Using Force Feed Forward Model", Proceedings of the 5th International Conference on Engineering Mechanics and Automation (ICEMA 5), Hanoi, 2019.
2. Sudarshan M Samarasinghe and **Manukid Parnichkun**, "Pitch Control of an Active Omni-wheeled Unicycle Using LQR", Proceedings of the 2019 International Symposium on Instrumentation, Control, Artificial Intelligence, and Robotics (ICA-SYMP 2019), Bangkok, 2019.

3. Bhashitha Channa Widana Gamage and **Manukid Parnichkun**, "Pitch Balancing Control of a Flipping Two-Wheel Stair Climbing Robot", Proceedings of the 2019 International Symposium on Instrumentation, Control, Artificial Intelligence, and Robotics (ICA-SYMP 2019), Bangkok, 2019.
4. Dayantha Ilangasinghe and **Manukid Parnichkun**, "Navigation Control of an Automatic Guided Forklift", Proceedings of the 2019 International Symposium on Instrumentation, Control, Artificial Intelligence, and Robotics (ICA-SYMP 2019), Bangkok, 2019.
5. T.N. Gallage and **Manukid Parnichkun**, "Development of a Two-Dimensional Plotter", the 25th IET Sri Lanka Network Annual Technical Conference, Colombo, Sri Lanka, 2018.
6. Dishan Jayasekara and **Manukid Parnichkun**, "Development of a Vision-Based SCARA Robot for Parts Sorting", Proceedings of the 2018 International Conference on Advanced Control, Automation and Robotics (ICACAR 2018), Bangkok, Thailand, 2018.
7. Wiput Tuvayanond and **Manukid Parnichkun**, "Development of 2-DOFs H_{∞} Loop Shaping Structured Control on Pneumatic Servo System", Proceedings of the 2017 TRS Conference on Robotics and Industrial Technology (CRIT 2017), Bangkok, Thailand, 2017.
8. Nicom Promkajin and **Manukid Parnichkun**, "A Study of Influences of Time Delay, Sampling Rate, and Measurement Noise in Attitude Control of a Quadrotor", Proceedings of the 2017 TRS Conference on Robotics and Industrial Technology (CRIT 2017) , Bangkok, Thailand, 2017.
9. Pongsakorn Seekhao, Kanokvate Tungpimolrut, and **Manukid Parnichkun**, " Control of Bicycle Leaning with Steering and Mass-Moving Stabilization," Proceedings of the 7th TSME International Conference on Mechanical Engineering, ICoME 2016, Chiang Mai, Thailand 2016. (Conference CD-ROM).
10. **Manukid Parnichkun**, Janitha A. Thalagoda, "Development of a Table Tennis Robot for Ball Interception Using Visual Feedback," Proceedings of the 2016 International Workshop on Pattern Recognition, IWPR 2016, Tokyo, Japan 2016. (Conference CD-ROM).
11. Petrus Sutyasadi, **Manukid Parnichkun**, "Trotting Control of a Quadruped Robot Using PID-ILC." Proceedings of the 2015 IEEE International Conference on Industrial Electronics, IECON 2015, Yokohama, Japan, 2015. (Conference CD-ROM).
12. Wiput Tuvayanond and **Manukid Parnichkun**. "Design, Identification, and Control of 3-DOFs Pneumatic MIS Surgical Robot Platform," Proceedings of the 2015 TRS Conference on Robotics and Industrial Technology, CRIT 2015, 2015.
13. Surachat Chantarachit and **Manukid Parnichkun**. "Balancing Control of a Unicycle Robot," Proceedings of the 2015 TRS Conference on Robotics and Industrial Technology, CRIT 2015, 2015.
14. Chaithat Thitharatanapor, Anantachai Naijit, **Manukid Parnichkun**, Chailerd Pichitpornchai. "Brain-Machine Interface Based Direction Control of a Rat Using Tele-Stimulation," Proceedings of the 36th Electrical Engineering Conference (EECON 36), pp.903-906, 2013.
15. Rassarin Chinnachodteeranun, Kiyoshi Honda, Apichon Witayangkurn, **Manukid Parnichkun**. "Production Management for Aqua Farm Based on Field Sensor Network Technology and GAP," Proceedings of the SICE Annual Conference 2013, SICE 2013, 2013.
16. Nara Samattapapong, Nitin Afzulpurkar, **Manukid Parnichkun**, Erik Bohez. "A New Forecasting Method for Hard Disk Drive Manufacturing Throughput with a Hybrid Neural Network Mode," Proceedings of the 16th International Conference on Mechatronics Technology, ICMT 2012, Tianjin, 2012.
17. Wiput Tuvayanond and **Manukid Parnichkun**. "Control of Pneumatic Surgical Robot," Proceedings of the 2012 TRS Conference on Robotics and Industrial Technology, CRIT 2012, 2012.
18. Kanjanapan Sukvichai and **Manukid Parnichkun**. "Design and Balancing Control of Double-Level Ball-Riding Robot," Proceedings of the 2012 TRS Conference on Robotics and Industrial Technology, CRIT 2012, 2012.
19. Pongsakorn Seekhao and **Manukid Parnichkun**. "Balancing Control of Bicycle Robot Using Mass-Moving Stabilization," Proceedings of the 2012 TRS Conference on Robotics and

- Industrial Technology, CRIT 2012, 2012.
20. Narong Aphiratsakun, Kittipat Chairungsarpsook and **Manukid Parnichkun**. “ZMP Based Gait Generation of AIT Leg Exoskeleton-A Further Gaits Generation,” Proceedings of the International Conference on Manufacturing and Industrial Engineering (ICMIE2012), pp. 886-890, Singapore, 26-28 February 2012.
 21. Somphong Thanok and **Manukid Parnichkun**. “Adaptive Cruise Control of a Passenger Car Using Hybrid of Sliding Mode Control and Fuzzy Logic Control,” Proceedings of the 2012 International Conference on Automotive Engineering, ICAE 2012, 2012.
 22. Choopong Chuaypen and **Manukid Parnichkun**. “Sliding Mode Control based Balance Control of a Bicycle Robot Using Centrifugal Force,” Proceedings of the 2012 International Conference on Automotive Engineering, ICAE 2012, 2012.
 23. Chaipayorn Silawatchananai and **Manukid Parnichkun**, “Force Control of an Upper Limb Exoskeleton for Virtual Reality Using Impedance Control,” Proceedings of the 2011 IEEE International Conference on Robotics and Biomimetics, Phuket, 2011. pp. 2342-2347, 2011.
 24. Sorawuth Vatanashevanopakorn and **Manukid Parnichkun**, “Steering Control based Balancing of a Bicycle Robot,” Proceedings of the 2011 IEEE International Conference on Robotics and Biomimetics, Phuket, 2011. pp. 2169-2174, 2011.
 25. Nicom Promkajin and **Manukid Parnichkun**, “Attitude and Altitude Control of a Four-Rotor Hovercraft Using Sliding Mode Control with Adaptive Sliding Surface,” Proceedings of the 2011 IEEE International Conference on Robotics and Biomimetics, Phuket, 2011. pp. 1285-1290, 2011.
 26. Suppachai Howimanporn and **Manukid Parnichkun**. “Performance Comparison of Balancing Control of an X-Y Planar Inverted Pendulum System by PID, LQR, and SMC,” Proceedings of the 2011 TRS Conference on Robotics and Industrial Technology, CRIT 2011, pp. 41-46, 2011.
 27. Somphong Thanok, Somphop Limsoonthrakul, **Manukid Parnichkun**. “Steering Control of an Intelligent Vehicle Using Fuzzy based Gain Tuning PD Control,” Proceedings of the 2011 TRS Conference on Robotics and Industrial Technology, CRIT 2011, pp. 89-92, 2011.
 28. Choopong Chuaypen and **Manukid Parnichkun**. “Control of Balance for Unmanned Bicycle Robot based on Centrifugal Force Control,” Proceedings of the 2011 TRS Conference on Robotics and Industrial Technology, CRIT 2011, pp. 110-114, 2011.
 29. Yunyong Punsawad, Yodchanan Wongsawat, **Manukid Parnichkun**. “Hybrid EEG-EOG Brain-Computer Interface System for Practical Machine Control,” Proceedings of the 2010 Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS’10 pp.1360-1363, 2010.
 30. M.H.Aziz, E.L.J. Bohez, **M. Parnichkun**, C. Saha, “Classification of Fuzzy Petri Nets, and their applications,” Proceedings of World Academy of Science, Engineering and Technology, 72, pp.394-401, 2010.
 31. Yunyong Punsawad, Sittichai Aempedchr, Yodchanan Wongsawat, **Manukid Parnichkun**. “EEG-based Mental Fatigue Alarm System Using Weighted-Frequency Index,” Proceedings of the APSIPA Annual Summit and Conference, ASC 2010, Singapore, pp.193-196, 2010.
 32. Narong Aphiratsakun, **Manukid Parnichkun**. “Balancing Control and Backlash Compensation of Leg Exoskeleton Using Hybrid Jacobian-Fuzzy Control,” Proceedings of the IASTED International Conference on Robotics (Robo 2010), Phuket, 2010. (Conference CD ROM)
 33. Chaipayorn Silawatchananai, **Manukid Parnichkun**. “Force Feedback Device for Virtual Reality: Arm Exoskeleton,” Proceedings of the IASTED International Conference on Robotics (Robo 2010), Phuket, 2010. (Conference CD ROM)
 34. R.V.Rao, P.J. Pawar, **Manukid Parnichkun**. “Industrial Robot Selection Using Fuzzy Multiple Attribute Decision Making Methods,” Proceedings of the DST-RFBR Sponsored Indo-Russian Joint Workshop on Computational Intelligence and Modern Heuristics in Automation and Robotics, India, 2010.
 35. Narong Aphiratsakun, Kittipat Chairungsarpsook, **Manukid Parnichkun**. “ZMP based Gait

- Generation of AIT's Leg Exoskeleton," Proceedings of the 2010 International Conference on Computer and Automation Engineering (ICCAE 2010), Singapore, 2010. (Conference CD ROM)
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B. Research grants and sponsored projects

1. Development of a Laser Guided Vehicle, sponsored by Planet T & S Co.,Ltd., 2,930,000 Baht, 2017. (Principal Investigator) (On-going)
2. Multiple Robot Cooperation Project, 2 sets of KR-16 KUKA Robots sponsored by HGST (Thailand) Co.,Ltd., totally about 3,000,000 Baht, 2016. (Principal Investigator) (On-going)
3. Development of Autonomous Mobile Robotic Chair with Ability of Staircase Climbing for Handicapped and Elderly People (Phase II) Project, sponsored by Health Systems Research Institute (HSRI), 672,000 Baht, 2016. (Principal Investigator) (On-going)
4. World Friend Korea - Techno Peach Corps (WFK-TPC) Program, sponsored by National Research Foundation of Korea for Dr. Song, Weon Keun to teach graduate courses and supervise students in Mechatronics Field at AIT for 3 years, 2016. (Coordinator) (On-going)
5. Preparation of Commercialization of Walking Rehabilitation Robot Project, sponsored by Thailand Center of Excellent in Life Sciences, 800,000 Baht, 2015. (Principal Investigator) (On-going)
6. Development of AIT Library Robot, sponsored by AIT Library Donation Fund, 1,000,000 Baht, 2015. (Principal Investigator) (On-going)
7. Development of Autonomous Mobile Robotic Chair with Ability of Staircase Climbing for Handicapped and Elderly People Project, sponsored by Health Systems Research Institute

- (HSRI), 1,590,000 Baht, 2015. (Principal Investigator) (On-going)
8. Development of a Leg Exo-Skeleton Robot for Walking Rehabilitation Project, sponsored by Thailand Center of Excellent in Life Sciences, 1,496,000 Baht, 2014. (Principal Investigator)(On-going)
 9. The Project of Evaluation of the Results and Impacts of Unmanned Aerial Vehicle Group Projects, sponsored by Thailand Research Fund, 750,000 Baht, 2014. (Principal Investigator)(On-going)
 10. The Development of Capacitance Instrument, Capacitor Bank Placement's Equipment, and Corrective Maintenance from Capacitance Value of Capacitor, sponsored by Electricity Generating Authority of Thailand, 1,606,500 Baht, 2014. (Co-Principal Investigator)(On-going)
 11. Development of Imbalance Monitoring and Balancing Control System for Two-Wheel Vehicle Project, sponsored by National Science and Technology Development Agency, 1,991,000 Baht, 2011. (Principal Investigator)(On-going)
 12. Brain-Computer Interface Based Mental Detection for Accident Prevention and Machine Control: Applications in Fatigue Alarming and Robot Control Project, sponsored by Royal Thai Government, 1,000,000 Baht, 2009. (Principal Investigator) (Completed)
 13. Development of Robot Controller Project, sponsored by Aerofluid Co.,Ltd and Royal Thai Government, 2,000,000 Baht, 2008. (Principal Investigator) (Completed)
 14. Development of Force-Feedback Exoskeleton System for Virtual Reality Project, sponsored by Royal Thai Government, 952,000 Baht, 2008. (Principal Investigator) (Completed)
 15. Development of an Automatic Steering Cruise Control System for Passenger Cars Project, sponsored by National Electronics and Computer Technology Center, 1,988,800 Baht, 2007. (Principal Investigator) (Completed)
 16. Brain-Machine Interface for Robo-Animal Project, sponsored by Thailand Research Fund, 1,200,000 Baht. (Principal Investigator) (Completed)
 17. Development of an Exoskeleton for Handicapped People Project, sponsored by National Electronics and Computer Technology Center, 2,043,100 Baht, 2006. (Principal Investigator) (Completed)
 18. Development of an Automatic Tide Sensing Unit for Tsunami Early Warning System Project, sponsored by Royal Thai Government, 1,000,000 Baht, 2005. (Principal Investigator) (Completed)
 19. A Study of Development of an Intelligent Vehicle Project, sponsored by National Electronics and Computer Technology Center, 1,000,000 Baht, 2005. (Principal Investigator) (Completed)
 20. Development of a Medical Tele-Analyzer by Force-Displacement-Hybrid Tactile Sensor and Actuator for Abdominal Mass Analysis (Phase 2) Project, sponsored by National Electronics and Computer Technology Center, 1,674,200 Baht, 2004. (Principal Investigator) (Completed)
 21. Development of an Intelligent Underwater Mobile Robot Project, sponsored by Royal Thai Government, 1,000,000 Baht, 2003. (Principal Investigator) (Completed)
 22. Development of an Automatic-Controlled-Flying Robot Project, sponsored by Thailand Research Fund, 1,080,000 Baht, 2001. (Principal Investigator) (Completed)
 23. Development of a Systematic-Error-Compensate CNC Controller Project, sponsored by Mitutoyo Association for Science and Technology, 2,500,000 Yen, 2001. (Principal Investigator) (Completed)
 24. Development of a Medical Tele-Analyzer by Force-Displacement-Hybrid Tactile Sensor and Actuator for Abdominal Mass Analysis Project, sponsored by National Electronics and Computer Technology Center, 2,261,480 Baht, 2001. (Principal Investigator) (Completed)
 25. 3-Axis Force Control in Cooperative Robots System Project, sponsored by NMB Thai Ltd., 100 strain gages and adhesive materials totally about 50,000 Baht, 2000. (Principal Investigator) (Completed)
 26. Development of Automatic Quality Inspection System of IC Package in Semiconductor Industry by Using of Image from CCD Camera Project, cosponsored by Circuit Electronics Industries Public Co., Ltd. and National Science and Technology Development Agency,

- 1,351,400 Baht, 1999. (Principal Investigator) (Completed)
27. Development of Autonomous Intelligent Robots Project, sponsored by Minebea Thai Ltd., 200 motors totally about 1,000,000 Baht, 1999. (Principal Investigator) (Completed)
 28. Multiple Robots Cooperation Project, sponsored by Seagate Technology (Thailand), 4 sets of robots totally about 3,200,000 Baht, 1998. (Principal Investigator) (Completed)
 29. Dynamic Control of Pneumatics System Project, sponsored by SMC (Thailand) Ltd., 20 items of 182 units of pneumatic equipment and sufficient fitting and soft piping totally about 200,000 Baht, 1998. (Principal Investigator) (Completed)
 30. Development of Distance Education Learning Modules for IE/MSE Programs Project, sponsored by AIT Curriculum Innovation Award, 200,000 Baht, 1998. (Co-Investigator) (Completed)
 31. NC-PC Machine; an Open Architecture CNC Machine Project, sponsored by Belgian Government, 179,000 US\$, 1997. (Co-Investigator) (Completed)
 32. Development of 3-D Laser Range Finder Project, sponsored by AIT Research Initiation Grant, 50,000 Baht, 1997. (Principal Investigator) (Completed)
 33. Development of Autonomous Intelligent Mobile Robots Project, sponsored by Seagate Technology (Thailand), 100 motors totally about 50,000 Baht, 1997. (Principal Investigator) (Completed)