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Affiliation

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Education:

Ph.D. in Ch.E., Drexel University, USA, 2005

MS. in Ch.E., Drexel University, USA, 2002

B.Sc. (2nd Honor) in Ch.E., Chulalongkorn University, Thailand, 1995

Work Experience:

Current-2005 **Dept. of Chemical Engineering, Faculty of Engineering, Kasetsart University**

- Assistant Professor
- Lecturer

1995-2000 **Vinylthai Public Co. Ltd.**

Working position

Vinyl Chloride Monomer (VCM) Department

- VCM Quality and Development coordinator
- Assistant Operation Manager
- Shift Superintendent

Research Experiences:

1 Artificial neural network-based control for complex chemical processes

2 Data driven-based control for pH process

3 Hybrid-model-based control for pH process

4 Carbon dioxide capture by seawater

5 Life cycle assessment of natural gas for vehicle

6 Mitigation technology for green chemical process

7 Control of micro channel reactor for bio diesel production by direct-inverse neural network

8 Development of nonlinear control system for plastic cracking process

9 Model-based controller design of integrated processes with multiple pH control locations

10 Embedded model-based control of chemical reactor with non-minimum phase behavior

11 Controller design of continuous neutralization processes using model-based control technique

12 Development of nonlinear model-based control for transport-reaction processes

13 Monitoring of the water content in a proton-exchange membrane fuel cell by using on-line parameter estimation

14 Model-based controller design for distributed parameter system

Publications:

1 **Panjapornpon C**, Kajornrungsilp I, Rochpuang C. Input/output linearizing controller with Taylor series expansion for a nonminimum phase process by hardware-in-the-loop approach. Asia-Pacific Journal of Chemical Engineering. 2020; 15(3): p.e2440. Impact factor 1.060

2 **Panjapornpon C**, Saksomboon P, Juyteiy K, Chinprasit J. Input/output linearization for a real-time pH control: application on basic wastewater neutralization by carbon dioxide in a fed-batch bubble column reactor. Engineering Journal. 2019; 23(5): 229-241.

3 **Panjapornpon C**, Saksomboon P, Dechakupt T. Real-time application of pH control in a carbon dioxide bubble column reactor by input/output linearizing control coupled with pH target optimizer. Industrial & Engineering Chemistry Research. 2019; 58(2): 771–781. Impact factor 3.141

4 Lohprasert S, **Panjapornpon C**. A coupled pH and level control in pH process by data-driven based, input-output linearization. *Engineering Transactions*. 2018; 21(2): 121–125.

5 Tawai A, **Panjapornpon C**, Sriariyanun M, Cheenkachorn K. Control of anaerobic digestion reactor with recirculation using an input-output linearizing control strategy. IFAC-PapersOnLine. 2018; 51(28): 109–114. Impact factor -

6 Srihawan T, **Panjapornpon C**, Tawai A. Optimization-based input/output linearizing control strategy for a pH process with multiple titrant streams. Industrial & Engineering Chemistry Research. 2018; 57(41): 13793–13801. Impact factor 3.141

7 Chonwattana W, **Panjapornpon C**, Tawai A, Dechakupt T. Model-based estimation and control of interface level in a two-phase vertical decanter: a case study of palm oil/water system. Computers & Chemical Engineering. 2018; 108: 372-381. Impact factor 3.024

8 Varabuntoonvit V, **Panjapornpon C**, Pakornkarn P, Mungcharoen T. Life cycle greenhouse gas and energy cost optimization for manufacturing sector in Thailand. Kasetsart Engineering Journal. 2018; 31(105): 39–50.

9 Kunanuntakij K, Varabuntoonvit V, Vorayos N, **Panjapornpon C**, Mungcharoen T. Thailand Green GDP assessment based on environmentally extended input-output model. Journal of Cleaner Production. 2017; 167: 970–977. Impact factor 5.651

10 Tanakunmas P, **Panjapornpon C**, Tawai A, Dechakupt T. Optimization-based control strategy with wavelet network input-output linearizing constraint for an ill-conditioned high-purity distillation column. Industrial & Engineering Chemistry Research. 2017; 56(31): 8927-8939. Impact factor 2.843

11 Tawai A, **Panjapornpon C**, Dittanet P. Control of ethylene dichloride cracking furnace using analytical model predictive control strategy for coupled PDE/ODE system. Industrial & Engineering Chemistry Research. 2016; 55(38): 10121-10131. Impact factor 2.587.

12 Tawai A, **Panjapornpon C**. Input–output linearizing control strategy for an ethylene dichloride cracking furnace using a coupled PDE-ODE model. Industrial & Engineering Chemistry Research. 2016; 55(3): 683:691. Impact factor 2.587.

13 Wantawee S, **Panjapornpon C,** Limtrakul S, Vatanatham T. Temperature control of polypropylene thermal cracking reactor by input/output linearization with two-degree-of-freedom structure. J Taiwan Inst Chem E. 2015; 52: 72:78. Impact factor 2.637.

14 Rungrueng K, **Panjapornpon C**. Observer-based input/output (I/O) linearizing control for an EDC vaporizer system. J Taiwan Inst Chem E. 2015; 50:69:75. Impact factor 2.637.

15 **Panjapornpon C**, Limpanachaipornkul P, Charinpanitkul T. Control of coupled PDEs – ODEs using input – output linearization: Application to a cracking furnace. Chemical Engineering Science. 2012; 68(1):144-151. Impact factor 2.379

16 Sukkarnkha P, **Panjapornpon C**. Input/output linearization with a two-degree-of-freedom scheme for uncertain nonlinear processes. Korean Journal of Chemical Engineering. 2012; 29 (6): 716-723. Impact factor 0.748

17 Sukkarnkha P, **Panjapornpon C**. Two-degree-of-freedom controller design for uncertain processes using input/output linearization control Technique. Asean Journal of Chemical Engineering, 2011; 11(1): 16 – 21. Impact factor -

18 Tawai A, **Panjapornpon C**. nonlinear model-based control for parabolic partial differential equations systems. Chiang Mai Journal of Science. 2008; 35(1): 221-228.

19 Thawornkuno C, **Panjapornpon C**. Nonlinear estimation of water content in PEMFC. Chiang Mai Journal of Science. 2008; 35(1): 212-220.

20 **Panjapornpon C**, Soroush M. Shortest-prediction-horizon non-linear model-predictive control with guaranteed asymptotic stability. Int. J. Control. 2008; 80 (10); 1533-1543. Impact factor 0.989

21 **Panjapornpon** C, Soroush M, Seider W D. Differential-geometric model-based control (DGMBC): a software package for controller design. Comput. Chem. Eng. 2008; 32: 1569-1588. Impact factor 1.504

22 **Panjapornpon C**, Soroush M. On-line parameter estimation through dynamics inversion: a real-time study. Ind. Eng. Chem. Res. 2007; 46:2503-2507. Impact factor 1.504

23 Reddy T A, Maor I, **Panjapornpon C**. Calibrating detailed building energy simulation programs with measured data - part I: general methodology (RP-1051). HVAC&R Res. 2007; 13(2): 221-241. Impact factor 0.475

24 Reddy T A, Maor I, **Panjapornpon C**. Calibrating detailed building energy simulation programs with measured data - part II: application to three case study office buildings (RP-1051). HVAC&R Res. 2007; 13(2): 243-265. Impact factor 0.475

25 **Panjapornpon C**, Soroush M, Seider W D. Model-based controller design for unstable, non-minimum-phase, nonlinear processes. Ind. Eng. Chem. Res. 2006; 45: 2758-2768. Impact factor 1.501

26 **Panjapornpon C**, Fletcher N, Soroush M. A flexible pilot-scale setup for real-time studies in process systems engineering. Chemical Engineering Education. 2006; 40(1): 40-45.

27 Mehranbod N, Soroush M, **Panjapornpon C**. A method of sensor fault detection and identification. J. Process Contr. 2005; 15(3): 321-339. Impact factor 1.433

Conference Papers:

1 Aimerbtam N, **Panjapornpon C**. Control of droplet size in a micro-channel reactor for biodiesel production. In: Proceeding of The 7th International TIChE Conference. 2017. October 18-20, 2017. Bangkok, THAILAND.

2 Saksomboon P, **Panjapornpon C**. Control of carbon dioxide capture with bubble column absorber using input/output linearization technique. In: Proceeding of The 7th International TIChE Conference. 2017. October 18-20, 2017. Bangkok, THAILAND.

3 Rattanawaorahirunkul R, Sanposh P, **Panjapornpon C.** Nonlinear System Identification of pH Process using Hammerstein-Wiener Model. In Proceeding of International Conference on Electronics, Information, and Communication (ICEIC2016), Danang, Vietnam, 2016.

4 Kunanuntakij K, Varabuntoonvit V, Vorayos, N, **Panjapornpon C**, Mungcharoen T. Multi-Objective Optimization for Thai Economy Based on Environmental Extended Input-Output Model. In Proceeding of The 12th Biennial International Conference on EcoBalance (EcoBalance2016), Kyoto, Japan, 2016.

5 Chonwattana W, **Panjapornpon C**. Control of Interface Level in a Vertical Decanter by Model-Based Technique. In Proceeding of The 5th International Conference on Green and Sustainable Innovation (ICGSI2015), Pattaya, Thailand, 2015.

6 Juyteiy K, **Panjapornpon C**. Control of Carbon Dioxide-Sodium Hydroxide Reactive Absorption in a Bubble Column Reactor. In Proceeding of The 5th International Conference on Green and Sustainable Innovation (ICGSI2015), Pattaya, Thailand, 2015.

7 Srihawan T, **Panjapornpon C.** Coupled Control between pH and Level of a Process with Multititrated Concentrations by Input/State Linearization. In Proceeding of The 11th IEEE International Conference on Control & Automation (ICCA 2014), Taichung, Taiwan, 2014.

8 **Panjapornpon C**, Sukkarnkha P. Control of Uncertain Input-delay Systems by using Input/output Linearization with a Two-degree-of-freedom Scheme. In Proceeding of The 11th IEEE International Conference on Control & Automation (ICCA 2014), Taichung, Taiwan, 2014.

9 Rungrueng K, **Panjapornpon C.** Temperature Control of EDC Thermal Cracking Furnace with a Coupled ODE and 2D-PDEs Model. In Proceeding of The 5th International Symposium on Advanced Control of Industrial Processes (ADCONIP 2014) Hiroshima, Japan, 2014.

10 Taweerojkulsri C, **Panjapornpon C.** An Observer-based Input/output (I/O) Linearizing Control: Application to a EDC Vaporizer Unit. In Proceeding of The 5th International Symposium on Advanced Control of Industrial Processes (ADCONIP 2014), Hiroshima, Japan, 2014.

11 Tawai A, **Panjapornpon C.** Input-output linearizing control of a thermal cracking furnace described by a coupled PDE-ODE system. In Proceeding of The 10th IFAC International Symposium on Dynamics and Control of Process Systems (DYCOPS 2013), Mumbai, India, 2013.

12 Oommareuk C, **Panjapornpon C**, Kunanantakij K. Multivariable Control of VCM Process By Input/Output Linearization Technique. In Proceeding of The TIChE International Conference, Nakornratchasima, Thailand, 2012.

13 Srihawan T, **Panjapornpon C**, Jongtanapiman S. Input/OutputLinearization for pH Process in Series. In Proceeding of The TIChE International Conference, Nakornratchasima, Thailand, 2012.

14 Kajornrungsilp I, **Panjapornpon C**. Series Solution Approach for Designing the Approximate Input-Output Linearization Controller. In Proceeding of The International Symposium on Advanced Control of Industrial Processes (ADCONIP 2011), Hangzhou, P.R. China, 2011.

15 Limpanachaipornkul P, **Panjapornpon C**. Control of Tubular Reactor Using Finite-Based I/O Linearization Technique. In Proceeding of The International Symposium on Advanced Control of Industrial Processes, Hangzhou, P.R. China, 2011.

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19 Kajornrungsilp I, **Panjapornpon C**. Embedded Approximate I/O Linearization controller for Non-minimum Phase Process. In Proceeding of The 19th Thailand Chemical Engineering and Applied Chemistry Conference, Karnjanaburi, Thailand, 2009.

20 Kessri N, **Panjapornpon C**. Finite-Based Differential Geometric Controller Design for Transport Reaction Processes. In Proceeding of The 19th Thailand Chemical Engineering and Applied Chemistry Conference, Karnjanaburi, Thailand, 2009.

21 Kasempin P, **Panjapornpon C**. Model reduction of VCM Cracking Furnace for using in the geometric controller design. In Proceeding of The 19th Thailand Chemical Engineering and Applied Chemistry Conference, Karnjanaburi, Thailand, 2009.

22 Kemthong C, **Panjapornpon C**. Process design of Anacardic acid product from cashew nut shell. In Proceeding of The 18th Thailand Chemical Engineering and Applied Chemistry Conference, Pattaya, Thailand, 2008.

23 Naksiri S, **Panjapornpon C**. Nonlinear controller design using input/output linearization for uncertain processes with input constraints. In Proceeding of The 18th Thailand Chemical Engineering and Applied Chemistry Conference, Pattaya, Thailand, 2008.

24 Siri-arayaphan P, **Panjapornpon C**. Model-based controller design in FPGA for applying in chemical engineering process. In Proceeding of The 18th Thailand Chemical Engineering and Applied Chemistry Conference, Pattaya, Thailand, 2008.

25 **Panjapornpon C**, Soroush M, Control of non-minimum-phase nonlinear systems through constrained input-output linearization. Proc. of American Contr. Conf. 2006; 4522-4527.

26 **Panjapornpon C**, Soroush M, Seider W D. Software for analytical nonlinear controller design. Proc. of American Contr. Conf. 2006; 4848-4853.

27 **Panjapornpon** C, Soroush M, Seider W D. A model-based control method applicable to unstable, non-minimum-phase, nonlinear processes. Proc. of ACC. 2004; 4: 2921-2924.

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