Biographical Data

Institute of Engineering,
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ผู้ช่วยศาสตราจารย์ ดร.เล็ก วันทา

Asst. Prof. Dr. Lek Wantha

Education and Qualifications:

2003	B.Eng. (Chemical Engineering), Suranaree University of Technology.
2006	M.Eng. (Chemical Engineering), Suranaree University of Technology.
2011	Ph.D. (Chemical Engineering), Suranaree University of Technology.

Present Position:

2018 – Present	Assistant Professor, School of Chemical Engineering, Suranaree University of Technology.

Work Experiences:

2018 – Present	Assistant Professor, School of Chemical Engineering, Suranaree University of Technology.
2017 – Present	Executive Committee, The Thai Institute of Chemical Engineering and Applied Chemistry (TIChE)
2015 – 2018	Assistant Professor, Department of Chemical Engineering, Burapha University.
2015 – 2018	Head of the Department of Chemical Engineering, Burapha University.
2017	Visiting Lecturer, Faculty of Engineering, National University of Laos
2013 – 2015	Head of the School of Bioengineering, Burapha University.
2012 – 2015	Lecturer, Department of Chemical Engineering, Burapha University.
2011	Teaching Assistant at the School of Chemical Engineering, Suranaree University of Technology
2009	Exchanged student at the Department of Materials Science and Chemistry, University of Hyogo, Japan
2004 – 2006	Research Assistant (Prof. Dr.Adrian E. Flood) at the School of Chemical Engineering, Suranaree University of Technology, Thailand

Teaching Subjects:

Teaching at the Department of Chemical Engineering, Burapha University.

Numerical Methods for Chemical Engineering

Transport Phenomena

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Asst. Prof. Dr. Lek Wantha

Chemical Engineering Equipment Design
Chemical Engineering Plant Design
Fluid Mechanics for Chemical Engineering
Biochemical Engineering
Thermodynamics and Kinetics of Materials
Unit Operations Laboratory I and II
English for Engineering
Fundamental of Momentum, Heat and Mass Transfers
Advanced Mathematics for Chemical Engineering
Advanced Transport Phenomena in Chemical and Biochemical Processes
Advanced Topics in Chemical Engineering (Crystallization process)
Special Topics in Chemical Engineering (Experimentation and data analysis)
Bioseparation Engineering (Co-teaching)
Biological Reaction Engineering and Bioreactor Design

Recognitions and Awards:

2013 – 2015	Awarded the New Researchers Grant by Thailand Research Fund (TRF).
2009	The Exchange Program for East Asia Young Researchers of University of Hyogo, JSPS, Japan
2006 - 2010	Strategic Scholarships for Frontier Research Network for the Ph.D. Program Thai Doctoral degree, Commission on Higher Education, Thailand
2004 - 2005	Scholarship for students with Outstanding Academic Performance, Suranaree University of Technology
2001 - 2003	AMCHAM's Scholarship, The American Chamber of Commerce in Thailand

Research Areas:

Industrial Crystallization, Computational Fluid Dynamics

Current Research and Fund:

2013 – 2015	"A Study into the Effectiveness of Crystallization Process in Purification of Active Pharmaceutical Ingredients" the project is under the support of Thailand Research Fund through the New Researchers Grant (Fiscal Year 2013). [Project Leader] (Finished)
2013 – 2015	"Purification of Biomolecules Using Crystallization Process" the project is under the support of faculty of Engineering of BUU Research and Development Support Fund (Fiscal Year 2013). [Project Leader] (Finished)

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2012 – 2014 "Crystallization Kinetics of the Polymorphs of Amino Acid" the project is under the support of faculty of Engineering of BUU Research and Development Support Fund (Fiscal Year 2012). [Project Leader] (Finished)

2012 – 2014 "A Study of the Growth Kinetics of Cane Sugar Crystals from Batch Crystallizer" the project is under the support of faculty of Engineering of BUU Research and Development Support Fund (Fiscal Year 2012). [Project Leader] (Finished)

Academic Output:

1. Supervisor of 3 completed M.E. students.

2. Study guides on the subject of Numerical Methods for Chemical Engineering and Advanced Mathematics for Chemical Engineering

3. International Publications:

[1] **Lek Wantha**, Neeranuch Punmalee, Vanida Sawaddiphol, and Adrian E. Flood. (2018). Ethanol effect on crystallization of polymorph of L-histidine. *Journal of Crystal Growth*. 490: 65-70.

[2] Neeranuch Punmalee, **Lek Wantha** and Adrian E. Flood. (2018). Antisolvent Crystallization of Polymorphs of L-Histidine. *Chemical Engineering and Technology*. 41(6): 1132-1138.

[3] **Lek Wantha**. (2018). Kinetics of the Solution-Mediated Polymorphic Transformation of Organic Compounds. *Current Pharmaceutical Design*. [In press]

[4] **Lek Wantha**. (2016). Determination of Nucleation and Growth Mechanisms of the B Polymorph of L-Histidine by Induction Time Measurement. *Chemical Engineering and Technology*. 37(9): 1289-1294.

[5] **Lek Wantha** and Adrian E. Flood. (2015). Growth and Dissolution Kinetics of A and B Polymorphs of L-Histidine. *Chemical Engineering and Technology*. 38(6): 1022-1028.

[6] **Lek Wantha** and Adrian E. Flood. (2013). Population Balance Modeling of the Solution-Mediated Transformation of DL-Methionine Polymorphs. *Chemical Engineering and Technology*. 36(8): 1313-1319.

[7] Adrian E. Flood and **Lek Wantha**. (2013). Population Balance Modeling of the Solution Mediated Trensformation of Polymorphs: Limitations and Future Trends. *Journal of Crystal Growth*. 373: 7-12.

[8] **Lek Wantha** and Adrian E. Flood. (2013). Growth and dissolution kinetics of alpha and gamma polymorphs of DL-methionine in aqueous solution. *Journal of Crystal Growth*. 362(1): 66-70.

[9] **Lek Wantha** and Adrian E.Flood. (2012). Nucleation Kinetics of the γ Polymorph of DL-Methionine. *Chemical Engineering and Technology*. 35(6): 1024-1030.

[10] **Lek Wantha** and Adrian E. Flood. (2011). Crystal growth rates and secondary nucleation threshold for g-DL-methionine in aqueous solution. *Journal of Crystal Growth*. 318(1):117-121.

[11] **Wirapong Wantha** and Adrian Flood. (2008). Numerical Simulation and Analysis of Flow in a DTB Crystallizer. *Chemical Engineering Communication*. 195(11): 1345-1370.

4. Conference Proceedings:

[1] **L. Wantha**, N. Punmalee, and A.E. Flood. (2018). Solution-Mediated Polymorphic Transformation between Two Polymorphs of L-Histidine in Several Solvents. 25th BIWIC International Workshop on Industrial Crystallization, Rouen, France. [Accepted].

[2] **L. Wantha**, N. Punmalee, A. Flood. (2017). Antisolvent Crystallization of Polymorphs of L-Histidine. 24th BIWIC International Workshop on Industrial Crystallization, Dortmund, Germany.

[3] สวิตา เลิศสุโภชวณิชย์, ชัยวัฒน์ กันหารี, วันเชิง สิทธิกิจโยธิน, **เล็ก วันทา.** 2559. ประเมินความเสี่ยงของการรั่วไหลของก๊าซคาร์บอนไดออกไซด์ในโรงงานผลิตคาร์บอนไดออกไซด์เหลว. ประชุมวิชาการวิศวกรรมเคมีและเคมีประยุกต์แห่งประเทศไทย ครั้งที่ 26. กรุงเทพฯ.

[4] **L. Wantha**, N. Punmalee, V. Sawaddiphol, A. Flood. (2016). Solvent Effect on Polymorphic Crystallization of L-Histidine. 23th BIWIC International Workshop on Industrial Crystallization, Magdeburg, Germany.

[5] **Wantha, L.**, (2015). Determining the Nucleation and Growth Mechanisms of B Polymorph of L-Histidine in Water-Ethanol System. 22th BIWIC International Workshop on Industrial Crystallization, Deajeon, Korea.

[6] **Lek Wantha**, Katawut Promsalod, and Natthakaan Sae-Tang (2015). Determination of Growth Kinetics of Sugar Crystals from Desupersaturation Measurements. The 5th TIChE International Conference 2015, Pattaya, Thailand.

[7] **Wantha, L**., and Flood, A.E. (2014). Effect of Temperature on the Growth and Dissolution Kinetics of L-Histidine. 21th BIWIC International Workshop on Industrial Crystallization, Rouen, France.

[8] **Lek Wantha**, Parichat Thawornkong, Suphawadee Mahawanud, and Nisara Suksanguansilp. (2014). Determination of the Nucleation Kinetics of the Polymorphs of L-Histidine. The 4th TIChE International Conference 2014, Chiang Mai, Thailand.

[9] **Wantha, L**., Laowisai, A., and Pannorach, S. (2013). Crystallization and Dissolution Kinetics of the Polymorphs of L-Histidine. 20th BIWIC International Workshop on Industrial Crystallization, Odense, Denmark.

[10] **Lek Wantha** and Adrian E. Flood. (2012). Population Balance Modeling of the Solution-Mediated Transformation of DL-Methionine Polymorphs. 19th BIWIC International Workshop on Industrial Crystallization. Tianjin, China.

[11] **Lek Wantha**. (2012). Characterization and Transformation of the Polymorphs of DL-Methionine Crystals. Burapha University International Conference 2012. Pattaya, Thailand.

[12] **Wantha, L**. and Flood, A.E. (2011). Nucleation kinetics of the g polymorph of DL-methionine. 18th BIWIC International Workshop on Industrial Crystallization. Delft, The Netherlands.

[13] **Wantha, L**. and Flood, A.E. (2010). Kinetics of crystallization of a-DL-methionine. 17th Regional Symposium on Chemical Engineering (RSCE2010). Bangkok, Thailand.

[14] **Wantha, L**. and Flood, A.E. (2009). Thermodynamics and kinetics of crystallization of the polymorphs of DL-methionine. 16th BIWIC International Workshop on Industrial Crystallization. Lappeenranta, Finland.

[15] **Wantha, L**. and Flood, A.E. (2009). An investigation of the secondary nucleation threshold and growth of g-DL-methionine in aqueous solution. 19th Thailand Chemical Engineering and Applied Chemistry Conference. Kanchanaburi, Thailand.

[16] **Wantha, L**. and Flood, A.E. (2008). Polymorphism and thermodynamics of DL-methionine. 18thThailand Chemical Engineering and Applied Chemistry Conference. Pattaya, Thailand.

[17] Flood, A.E. and **Wantha, W**. (2006). Computational fluid dynamic modeling of a 1 m^3 draft tube baffle crystallizer with fines removal. 13th BIWIC International Workshop on Industrial Crystallization. Delft, The Netherlands.

[18] **Wantha, W**. and Flood, A.E. (2006). Numerical simulation and analysis of flow in a DTB crystallizer. International Conference on Modeling in Chemical and Biological Engineering Sciences. Bangkok, Thailand.

5. Conference Abstracts:

[1] **L. Wantha**, N. Punmalee, A.E. Flood. (2018). Solvent Effects in the Solubility of the Polymorph of L-Histidine. Asian Crystallization Technology Symposium 2018 (ACTS-2018). Singapore.

[2] เล็ก วันทา และ พุทธ กิติวิริยกุล (2560). การประเมินคาร์บอนฟุตพริ้นท์ของบริษัท เอเซีย แปซิฟิค ปิโตรเคมิคอล จำกัด (T86 site). การประชุมวิชาการทางวิศวกรรมเคมีและเคมีประยุกต์แห่งประเทศไทย ครั้งที่ 27 (TIChE 2017). กรุงเทพ.

[3] Flood, A.E. and **Wantha, L**. (2012). Population balance modeling of the solution mediated transformation of polymorphs: Limitations and future trends. 1st Asian Crystallization Technology Symposium (ACTS-2012). Seoul, Korea.

[4] **Wantha, L**. and Flood, A.E. (2011). Crystallization kinetics of polymorphs of DL-methionine. The Commission on Higher Education Congress IV. Chonburi, Thailand.

[5] **Wantha, L**. and Flood, A.E. (2011). Growth and dissolution kinetics of alpha and gamma polymorphs of DL-methionine. 5th Asian Conference on Crystal Growth and Crystal Technology (CGCT-5). Suntec, Singapore.

[6] **Wantha, L**. and Flood, A.E. (2010). Crystal growth rates for gamma-DL-methionine in aqueous solution. 16th International Conference on Crystal Growth (ICCG-16). Beijing, People's Republic of China.

[7] **Wantha, L**. and Flood, A.E. (2010). Crystal growth and dissolution rates for α-DL-methionine in aqueous solution. 14th International Summer School on Crystal Growth (ISSCG-14). Dalian, People's Republic of China.

[8] **Wantha, L**. and Flood, A.E. (2009). Polymorphism and kinetics of crystallization of DL-methionine. International Symposium of East Asian Young Scientists Follow-up Program on Environment- and Bio-Engineering. Hyogo, Japan.

[9] **Wantha, L**. and Flood, A.E. (2009). Polymorphism and polymorphic transformation of DL-methionine crystals. 42nd IUPAC Congress: Chemistry Solutions. Glasgow, UK.

[10] **Wantha, L**. and Flood, A.E. (2008). Polymorph characterization and solubility measurement of DL-methionine. The Commission on Higher Education Congress I. Chonburi, Thailand.

6. Reviewer

[1] Industrial and Engineering Chemistry Research (2014, 2017) (International Journal)

[2] Chemical Engineering and Technology (2014, 2018) (International Journal)

[3] Crystal Research and Technology (2017) (International Journal)

[4] Crystal Growth and Design (2018) (International Journal)

[5] 7th International Thai Institute of Chemical Engineering and Applied Chemistry Conference (ITIChE 2017) (International Conference)

[6] Burapha University International Conference 2015 (international Conference)

[7] Burapha University International Conference 2012 (international Conference)

[8] The 5th Regional Conference on Chemical Engineering (international Conference)

[9] Pure and Applied Chemistry International Conference 2013 (PACCON2013)
(International Conference)

Professional Affiliation:

[1] 2017 – 2018	Executive Committee, The Thai Institute of Chemical Engineering and Applied Chemistry (TIChE)
[2] 2015 – 2016	Consultant, The Thai Institute of Chemical Engineering and Applied Chemistry (TIChE)
[3] 2015 - present	Member, The Thai Institute of Chemical Engineering and Applied Chemistry (TIChE)