

Assoc. Prof. Dr. Bundit Fungtammasan

รศ.ดร. บัณฑิต ฟุ้งธรรมสาร

EDUCATIONAL BACKGROUND

Year 1982 Ph.D. (Mechanical Engineering), University of New South Wales, Australia
Year 1977 B.Eng. (Mechanical Engineering), University of New South Wales, Australia

RESEARCH INTEREST

Energy conversion, Combustion of fuels and wastes, Fluidized bed combustion

WORK EXPERIENCE

2019–present Advisor to the President for Research and Innovation
King Mongkut's University of Technology Thonburi
2014 – 2019 Senior Vice President for Research and Innovation
King Mongkut's University of Technology Thonburi (KMUTT)
2011 – 2014 Vice President for Research, KMUTT
2002 – 2011 Director, Joint Graduate School of Energy and Environment
JGSEE, a consortium of 5 universities led by KMUTT
1999 – 2001 Assistant Director
National Science and Technology Development Agency (NSTDA) (1999 full-time, 2000-2001 part-time)
2000 – 2001 Vice President for Research and Development
King Mongkut's University of Technology North Bangkok (KMUTNB)
1998 – 1999 Dean, The Graduate College, KMUTNB
1990 – 1998 Dean, Faculty of Engineering, KMUTNB
1986 – 1990 Deputy Dean, Faculty of Engineering, KMUTNB
1983 – 1986 Head, Mechanical Engineering Dept, Faculty of Engineering, KMUTNB
1981 - 1983 Lecturer, Mechanical Engineering Dept, Faculty of Engineering, KMUTNB

SELECTED PROFESSIONAL SERVICE

2010 – 2018 Member, Steering Committee, Energy and Environment Cluster, National Science and Technology Development Agency
2012 – present Member, Research and Development Funding Committee, Provincial Electricity Authority (PEA)
2017 – present Member, Committee for the Thailand's Development of the Power Development Plan, Ministry of Energy
2015 – present Member, Steering Committee, Thailand's Third National Communication and the First Biennial Update Report to UNFCCC, Ministry of Natural Resources and Environment
2012 – present Scientific Advisory Board Member, the International Institute for Sustainability Analysis and Strategy, Darmstadt, Germany

AWARDS & HONOURS

2018 Australian Alumni Leadership Award by Australian Alumni Association Thailand in recognition of his outstanding leadership in academia

2015 Order of the Academic Palms (Officer Level) by the French Government in recognition of research contribution in the field of energy for sustainable development and promotion of Franco-Thai cooperation

2012 PTIT (Petroleum Institute of Thailand) Fellow in recognition of contribution to human resources development, institutional development and research in the field of energy

PUBLICATIONS

International Journal

Dacres, O.D., Tong, S., Li, X., Zhu, X., Edreis, E.M.A., Liu, H., Luo, G., Worasuwanarak, N., Kerdsuwan, S., Fungtammasan, B. and Yao, H. (2019) Pyrolysis kinetics of biomasses pretreated by gas-pressurized torrefaction. *Energy Conversion and Management*. 182: p. 117-125. February 15, 2019

Promvongsa, J., P. Vallikul, B. Fungtammasan, A. Garo, G. Grehan, and S. Saengkaew. (2017) Multicomponent fuel droplet evaporation using 1D Global Rainbow Technique. *Proceedings of the Combustion Institute*, 2017. 36(2): pp. 2401-2408. June 2017

Promvongsa, J., B. Fungtammasan, G. Gerard, S. Saengkaew, and P. Vallikul. (2017) A Study on the Evaporation of Water-Ethanol Mixture Using Rainbow Refractometry. *Journal of Energy Resources Technology-Transactions of the Asme*, 2017. 139(6): pp. 6. November 2017

Promvongsa, J., B. Fungtammasan, A. Garo, G. Grehan, S. Saengkaew, and P. Vallikul (2017) A Study on the Evaporation of Water-Ethanol Mixture using Rainbow Reflectometry. *Journal of Energy Resources Technology*, 139(6), 10.1115/1.4037157. November 2017

Fungtammasan, B., A. Tippichai, T. Otsuki, and C. Tam. (2017) Transition pathways for a sustainable low-carbon energy system in Thailand. *Journal of Renewable and Sustainable Energy*, 2017. 9(2).March, 2017

Shane, A., S.H. Gheewala, B. Fungtammasan, T. Silalertruksa, S. Bonnet, and S. Phiri. (2016) Bioenergy resource assessment for Zambia. *Renewable and Sustainable Energy Reviews*, 2016. 53: p. 93-104. January, 2016

Sathitbun-anan, S., B. Fungtammasan, M. Barz, B. Sajjakulnukit, and S. Pathumsawad. (2015) An analysis of the cost-effectiveness of energy efficiency measures and factors affecting their implementation: a case study of Thai sugar industry. *Energy Efficiency*, 2015. 8(1): p. 141-153. Feb 2015

Sathitbun-anan, S., B. Fungtammasan, M. Barz, B. Sajjakulnukit, and S. Pathumsawad. (2014) Energy efficiency and greenhouse gas emission reduction potentials in sugar production processes in Thailand. *Energy for Sustainable Development*, 2014. 23(0): p. 266-274. December 2014

Wongchang, T., S. Patumsawad, and B. Fungtammasan. (2013) An Analysis of Wood Pyrolysis Tar from High Temperature Thermal Cracking Process. *Energy Sources, Part A*, 2013. 35(10): p. 926-935. October 2013

Wongchang, T., S. Patumsawad, and B. Fungtammasan. (2012) Temperature Impact on Reforming of Wood Derived Pyrolysis Gas for Hydrogen Production and Tar Reduction. *Journal of Biobased Materials and Bioenergy*, 2012. 6(6): p. 673-677. December 2012

Punbusayakul, N., K. Boonsiri, S. Charojrochkul, B. Fungtammasan, and J. Charoensuk. (2012) Assessment on hermetic property and mechanical compatibility of various groove-gasket sealing designs for solid oxide fuel cell stack. *Journal of Power Sources*, 2012. 213(0): p. 186-202. September 2012

Wannapeera, J., B. Fungtammasan, and N. Worasuwanarak. (2011) Effects of temperature and holding time during torrefaction on the pyrolysis behaviors of woody biomass. *Journal of Analytical and Applied Pyrolysis*, 2011. 92(1): p. 99-105. September 2011

Makmool, U., S. Jugjai, S. Tia, Y. Laonual, P. Vallikul, and B. Fungtammasan. (2011) Laser-based investigations of flow fields and OH distributions in impinging flames of domestic cooker-top burners. *Fuel*, 2011. 90(3): p. 1024-1035. March 2011

Yongyingsakthavorn, P.D., Christophe ; Vallikul , Pumyos ; Fungtammasan , Bundit (2010) Deconvolution with Maximum Entropy Solution to Determine Local Extinction Coefficient and Local Volume Concentration Values from Laser Diffraction Data. *Particle & Particle Systems Characterization*, 2010. 26(4): p. 187-198. January 2010

Suksankraisorn, K.P., S.; Fungtammasan, B. (2010) Co-firing of Thai lignite and municipal solid waste (MSW) in a fluidised bed: Effect of MSW moisture content. *Applied Thermal Engineering*, 2010. 30(17-18): p. 2693-2697. December 2010

Cheenkachorn, K.F., B. (2010) An investigation of diesel-ethanol-biodiesel blends for diesel engine: Part 2-emission and engine performance of a light-duty truck *Energy sources, Part A: Recovery, Utilization, and Environmental Effects*, 2010. 32(10): p. 894 - 900 January 2010

Cheenkachorn, K.F., Bundit. (2010) Development of engine oil using palm oil as a base stock for four-stroke engines. *Energy*, 2010. 35(6): p. 2552-2556 June 2010

Cheenkachorn, K.F., B. (2010) An Investigation of Diesel-Ethanol-Biodiesel Blends for Diesel Engine: Part 1. Emulsion Stability and Fuel Properties. *Energy sources, Part A: Recovery, Utilization, and Environmental Effects*, 2010. 32(7): p. 637 – 644. April 2010

Pipatmanomai, S.F., Bundit ; Bhattacharya, Sankar (2009) Characteristics and Composition of Lignites and Boiler Ashes and Their Relation to Slagging: The case of Mae Moh PCC Boilers. *Fuel*, 2009. 88(1): p. 116-123 January 2009

Jirasuwankul, N.F., Bundit; Vallikul, P; Kuntanapreeda, S; Jugjai, S; Burkhardt, H. (2009) Analysis and Characterization of Premixed CH₄/Air Flame based on Invariant transform of v2D CH*-Chemiluminescence Measurements. *Combustion Science & Technology*, 2009. 181(2): p. 191-210. February 2009

Cheenkachorn, K.F., Bundit (2009) Biodiesel as an Additive for Diesel *International Journal of Green Energy*, 2009. 6(1): p. 57-72. Jan.-Fe. 2009

Yongyingsakthavorn, P.V., P; Fungtammasan, B; Dumouchel, C. (2007) Application of the maximum entropy technique in tomographic reconstruction from laser diffraction data to determine local spray drop size distribution. *Experiments in Fluids*, 2007. 42(3): p. 471-481. March 2007

Makmool, U.J., S; Tia, S; Vallikul, P; Fungtammasan, B. (2007) Performance and analysis by particle image velocimetry (PIV) of cooker-top burners in Thailand. *Energy*, 2007. 32(10): p. 1986-1995. October 2007

Punbusayakul, N.C., Ja; Fungtammasan, Bb. (2006) Modified sulfation model for simulation of pulverized coal combustion. *Energy Conversion and Management*, 2006. 47(3): p. 253-272. February 2006

Jangsawang, W.V., P; Fungtammasan, B.; Kerdsuwan, S. (2005) Effect of secondary air supply rate on the combustion of volatile gas in a controlled-air incinerator. *International Journal Of Energy Research*, 2005. 29(6): p. 549-556. May

Jangsawang, W.F., B.; Kerdsuwan, S. (2005) Effects of operating parameters on the combustion of medical waste in a controlled air incinerator. *Energy Conversion and Management*, 2005. 46(20): p. 3137-3149. December 2005,

Suksankraisorn, K.P., S.; Vallikul, P.; Fungtammasan, B.; Accary, A. (2004) Co-combustion of municipal solid waste and Thai lignite in a fluidized bed. *Energy Conversion and Management*, 2004. 45(6): p. 947-962. April

Suksankraisorn, K.P., S.; Fungtammasan, B. (2003) Combustion studies of high moisture content waste in a fluidized bed. *Waste Management*, 2003. 23(5): p. 433-439. May

International Conference

Promvongsa, J., Y. Wu, G. Grehan, S. Saengkaew, B. Fungtammasan, and P. Vallikul. One-Dimensional Rainbow Technique to Characterize the Evaporation at Ambient Temperature and Evaporation in Flame of Monodispersed Droplets. in 7th European Combustion Meeting (EMC2015). Budapest, Hungary. 30 March- 2 April 2015

Promvongsa, J., B. Fungtammasan, P. Vallikul, G. Grehan, and S. Saengkaew. Measurement of Evaporation Constant of Mono-disperse Fuel Droplets Using One-dimensional Rainbow Technique. in 26th Annual Conference on Liquid Atomization and Spray Systems (ILASS2014). Bremen, Germany. 8-10 September 2014

Sumate Sathitbun-anan, Bundit Fungtammasan, Mirko Barz, Boonrod Sajjakulnukij and Suthum Pathumsawad (2013) The Influence of Temperature and Pressure to Exergy in Sugar Mills Process: Case Study. in 2013 International Conference on Alternative Energy in Developing Countries and Emerging Economies. Bangkok, Thailand. May 30-31, 2013

Sumate Sathitbun-anan, Bundit Fungtammasan, Mirko Barz, Boonrod Sajjakulnukij and Suthum Pathumsawad (2013) Barriers and Driving Forces of Energy Efficiency for Sugar Mills in Thailand: Case Studies. in 2013 International Conference on Alternative Energy in Developing Countries and Emerging Economies. Bangkok, Thailand. May 30-31, 2013

Thawatchai Wongchang, Suthum Patumsawad, and Bundit Fungtammasan. (2012) An Investigation of Wood Pyrolysis Tar from High Temperature Thermal Cracking Process. in 4th International Conference on Sustainable Energy & Environment (SEE 2011): A Paradigm Shift to Low Carbon Society. 27-29 February 2012. Bangkok, Thailand.

Sumate Sathitbun-anan, Bundit Fungtammasan, Mirko Barz, Boonrod Sajjakulnukij, and Suthum Pathumsawad. (2012) An Assessment of Energy Saving Potentials in Thai Sugar Industry. in 4th International Conference on Sustainable Energy & Environment (SEE 2011): A Paradigm Shift to Low Carbon Society. 27-29 February 2012. Bangkok, Thailand.

Bundit Fungtammasan, Somrat Kerdswan, Suthum Patumsawad, Suneerat Pipatmanomai, Pumyos Vallikul, Nakorn Worasuwanarak, Pisit Yonyingsakthavorn, and Pierre Joulain. (2012) Thermochemical Conversion of Biomass and Waste Towards the Production of Renewable Energy: the JGSEE's Contribution. in 4th International Conference on Sustainable Energy & Environment (SEE 2011): A Paradigm Shift to Low Carbon Society. 27-29 February 2012. Bangkok, Thailand.

Kunlanit Tuntivoranukul, Pumyos Vallikul, Bundit Fungtammasan, Pisit Yonyingsakthavorn, and Christophe Dumouchel. (2009) Application of D2-law to Determine Time Evolution Drop-size Distribution Function of Bio-diesel drops and Their Burn-out Time. in World Renewable Energy Congress 2009 - Asia (WREC 2009-Asia). 19-22 May 2009. Bangkok, Thailand.

W. Jirasukthaveekul, B Fungtammasan, P Vallikul, S Kuntanapreeda, and H. Burkhardt. (2008) Characterization and Control of Non-Premixed CH₄/Air Swirl Flame by CH* - Chemiluminescence Measurements and Flame Image Analysis. in ISFV13-13th International

Symposium on Flow Visualization / FLUVISU12-12th French Congress on Visualization in Fluid Mechanics. July 1-4, 2008. Nice, France.

Bundit Fungtammasan. (2008) Recent Policies and Challenges in Sustainable Energy Development in Thailand in Renewable Energy Asia 2008, An International Conference & 4th SEE Forum Meeting. 11-13 December 2008. IIT Delhi, India.

W Siemers and B Fungtammasan. (2007) Sustainable Biomass Energy in Thailand. in 15th European Biomass Conference and Exhibition. 7-11 May 2007. Berlin, Germany.

N Coovatanachai and B Fungtammasan. (2007) Policy challenges in Bioenergy Development and Deployment in Thailand in 15th European Biomass Conference and Exhibition. 7-11 May 2007. Berlin, Germany.

Pa Yongyingsakthavorn, Cb Hespel, Gb Godard, Cb Dumouchel, Pc Vallikul, and Bac Fungtammasan. (2006) Experimental Validation of the Maximum Entropy Technique in Tomographic Reconstruction to Determine Local Spray Drop Size Distribution. in 10th International Conference on Liquid Atomization and Spray Systems. 27 August - 1 September 2006. Kyoto, Japan.

Mab Schmitt, Db Gvozdenac, Cb Menke, Bb Fungtammasan, Pc Vallikul, and Bd Limmeechokchai. (2006) Application of CHP Systems in Industries and Large Commercial Buildings in Thailand. in The 2nd Joint International Conference on Sustainable Energy and Environment (SEE 2006). 21-23 November 2006. Bangkok, Thailand.

Sa Pipatmanomai, Na Worasuwanarak, Ba Fungtammasan, Sb Bhattacharya, Sc Bhakdisongkram, Sc Paitoon, and Ac Kitchotkul. (2006) Study of Factors Influencing Slag Formation Potential of Lignite under Pulverised Fuel Combustion Conditions: Elemental Partitioning in Lignite Ashes and Slags. in The 2nd Joint International Conference on Sustainable Energy and Environment (SEE 2006). 21-23 November 2006. Bangkok, Thailand.

Ua Makmool, Sb Jugjai, Sc Tia, Pd Vallikul, and Ba Fungtammasan. (2006) PIV Applications to Thermal Performance of LPG Cooking Burners. in The 2nd Joint International Conference on Sustainable Energy and Environment (SEE 2006). 21-23 November 2006. Bangkok, Thailand.

Na Jirasuwankul, Ba Fungtammasan, Pb Vallikul, Sb Kuntanapreeda, and Hc Burkhardt. (2006) An Approximation of Scalar Time-Series Data from Temporal 2D Images of CH*-chemiluminescence Measurements of Premixed CH₄/Air Flames. in The 2nd Joint International Conference on Sustainable Energy and Environment (SEE 2006). 21-23 November 2006. Bangkok, Thailand.

Ba Fungtammasan, Ca Menke, and Nb Coovattanachai. (2006) Policy Research for the promotion of R&D in Renewable Energy and Energy Efficiency in Thailand. in World Renewable Energy Congress-IX (WREC). August 19-25, 2006. Florence, Italy.

P. Yongyingsakthavorn, P. Vallikul, B. Fungtammasan, and C. Dumouchel. (2005) Maximum entropy reconstruction and experimental validation of local drop size distributions of palm oil based biodiesel sprays. in Proceedings of the 20th annual conference on Liquid Atomization and Spray Systems, ILASS-Europe 2005. September 5-7, 2005. Orleans, France.

P. Yongyingsakthavorn, P. Vallikul, B. Fungtammasan, C. Dumouchel, and P. Joulain. (2004) An Investigation on Line-of-Sight and Local Drop Size Distributions of Palm Oil Based Biodiesel Sprays Using Laser Diffraction Data. in The Third Regional Conference on Energy Technology towards a Clean Environment "Sustainable Energy and Environment (SEE)". December 1-3, 2004. Hilton Hua Hin Resort & Spa, Hua Hin, Thailand.

N. Jirasuwankul, B. Fungtammasan, P. Vallikul, S. Kuntanapreeda, C. Lacour, A. Boukhalfa, D. Honore, and H. Burkhardt. (2004) Statistical Description of Local Emission Coefficients of

CH₄-Air Flames from their CH-Chemiluminescence Measurements. in The Third Regional Conference on Energy Technology towards a Clean Environment "Sustainable Energy and Environment (SEE)". December 1-3, 2004. Hilton Hua Hin Resort & Spa, Hua Hin, Thailand.

B. Fungtammasan, P. Nitinai, and J. Charoensuk. (2004) A Modified Sulfation Model for Incorporation into a CFD Code for the Simulation of Multi-phase Reacting Flows. in The Third Regional Conference on Energy Technology towards a Clean Environment "Sustainable Energy and Environment (SEE)". December 1-3, 2004. Hilton Hua Hin Resort & Spa, Hua Hin, Thailand.

K Suksankraisorn, P Vallikul, B Fungtammasan, A Accary, and R Gadio. (2003) Effect of air staging schemes on fluidized bed combustion of lignite: the mean temperature and their spectrum analyses. in The 2nd Regional Conference on Energy Technology Towards a Clean Environment. 12-14 Feb 2003. Phuket, Thailand.

K Suksankraisorn, S Patumsawad, P Vallikul, B Fungtammasan, and A Accary. (2003) Co-combustion of lignite and municipal solid waste in a fluidized bed : influence of air staging in The 2nd Regional Conference on Energy Technology Towards a Clean Environment. 12-14 Feb 2003. Phuket, Thailand.

K Suksankraisorn, K Sripinproh, P Vallikul, and B Fungtammasan. (2003) Dynamic System Identification of Gaseous Emissions during Co-combustion of Lignite and Municipal Solid Waste in a Fluidized Bed. in PSU-NV International Conference on Energy and the Environment. Dec. 11-12, 2003. Hat Yai, Thailand

S Suksankraisorn, S. Patumsawad, P Vallikul, B Fungtammasan, and A Accary. (2002) Co-combustion of Lignite and Municipal Solid Waste in a Fluidized Bed: Emission of Nitrogenous Species. in The 27th International technical Conference on Coal Utilization and Fuel Systems. March 4-7, 2002. Florida, USA.

W. Jangsawang, B. Bunditfungtammasan, P. Vallikul, and S. Kerdsuwan. (2001) Effect of secondary air supply rate on the combustion efficiency of infectious wastes in a controlled-air incinerator. in 6th ASEAN Science & Technology Week Conference Science & Technology: Enhancing the quality of life. September 17-19, 2001. Darussalam, Brunei

National Journal

Bundit Fungtammasan. (2011) Green Energy Technology: Thailand's Priorities and Opportunities for Innovation in Chemical Engineering. Kasetsart Engineering Journal. 75(24): p. 1-12. Jan - Mar 2011

K Tuntivoranukul, P Vallikul, B Fungtammasan, P Yongyingsakthavorn, and C Dumouchel. (2010) Application of the D2-law to determine evolution and burn-out time of evaporating biodiesel spray drop-size distribution. Journal of Sustainable Energy & Environment. 1(2): p. 59-64. Apr - Jun 2010

Jantarat Promvongsa, Pumyos Vallikul, Bundit Fungtammasan, and Gerard Grehan. (2010) On Evaporation Constants of Biodiesel-Diesel Blends: The Effects of Blending Ratios. Journal of Metals, Materials and Minerals. 20(3): p. 43-45. December 2010

S Tanchatchawal, P Vallikul, and B Fungtammasan. (2003) Numerical Simulation of Turbulent Swirling flows : the case of an Axially \square Rotating \square Pipe Swirl Generator. The Journal of KMITNB. 12(3): p. 30-39.

National Conference

S Suksankraisorn, S Patumsawad, P Vallikul, B. Fungtammasan, and A Accary. (2002) SO₂ Emission and Control of Thai Lignite in a Fluidized Bed Combustor in The 1st National Environmental Conference. January 17-19, 2002. Chiangmai, Thailand.

S Suksankraisorn, S Patumsawad, S Kerdsuwan, B Fungtammasan, and A Accary. (2002) Effect of MSW Mass Fraction on Sulphur Emission during the Co-combustion of MSW with Thai Lignite in a Fluidized Bed. in The 1st National Environmental Conference January 17-19, 2002. Chiangmai, Thailand.