

## Curriculum Vitae



### **Kanit Manatura, Ph.D.**

Assistant Professor

*Department of Mechanical Engineering*

*Faculty of Engineering at Kamphaeng Saen*

*Kasetsart University, Kamphaeng Saen campus*

*Nakhonpratom, Thailand*

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**Area of specialisation:** Bio-energy, Energy systems and design

#### **Research interests:**

1. Biomass conversion (Thermo-chemical Conversion): Torrefaction, Pyrolysis, Gasification and Combustion
2. Co/tri-generation from renewable sources
3. Energy conservation / Efficiency technology in building and factory

#### **Education:**

Ph.D. (Mechanical Engineering), National Chung Hsing University, Taiwan R.O.C.

M.Eng. (Mechanical Engineering), Chulalongkorn University, Thailand

B.Eng. (Mechanical Engineering) Khonkaen University, Thailand

#### **Current projects**

1. Fuel characteristics and combustion kinetics of waste of polyethylene terephthalate and biomass composite pellets funded by Faculty of Engineering at KPS, Kasetsart University, 2020.
2. Torrefaction Characteristics of an Agricultural Residue, funded by Faculty of Engineering at KPS, Kasetsart University, 2018.

3. Gasification of agricultural waste from downdraft gasifier with removal system, funded by Kasetsart University Kamphaeng Saen campus, 2018.
4. 3-Stage Air Downdraft Gasifier, funded by Kasetsart University Research and Development Institute, 2018.
5. Design 3 stage air downdraft gasifier, funded by Energy Planning and Policy Office, 2018. (Mentor)
6. Gasification performances of agricultural wastes in a downdraft fixed bed gasifier using thermodynamic analysis, funded by Faculty of Engineering at KPS, Kasetsart University, 2017.

### **International projects**

1. Biomass combustion and waste heat boiler design in Taiwan, funded by TAIWAN MASAHISA MACHINERY CO., LTD, Taichung, Taiwan, 2014-2015.

### **Teaching**

1. 01208111: Engineering Drawing I
2. 01208241: Thermodynamics
3. 01208242: Fluid mechanics
4. 01208381: Mechanical Engineering Laboratory I-II
5. 01208399: Internship
6. 01208431: Power plant engineering
7. 01208449: Energy Audits
8. 01208495: Mechanical Engineering Project Preparation
9. 01208497: Seminar
- 10.01208499: Mechanical Engineering Project
- 11.02208516: Biomass conversion (Grad/English)
- 12.01999111: Knowledge of Land
- 13.02999144: Life skills for undergraduate student

### **Personal activities and committees**

1. Training in Water Pollution Supervisor, Thailand Environment Institute (TEI), 3 - 7 June 2019.
2. Chairman in Master thesis defend at Naresuan University, Thailand, 10 Apr 2019.
3. Training in Air Pollution Supervisor, Thailand Environment Institute (TEI), 16 - 20 July 2018.
4. Research collaborations at National Chung Hsing University, Feng-chia University and National Central University, Taiwan, 21 - 24 May 2018.
5. Training in Boiler inspector, 29 - 31 Mar 2018.

6. Chairman in the 14<sup>th</sup> National Kasetsart University Kamphaeng Saen conference, 8 Dec 2017.
7. Invited lecturer at Naresuan University, Thailand, 22 - 24 Nov 2017.
8. Training in Energy auditor (assistance), 7 - 8 Sep 2017.
9. Training in Biomass Gasification, 12 Mar 2017.

### **Reviewer for International Journals**

1. Applied Energy, Elsevier, April 2020
2. Waste and Biomass Valorization, Springer, April-May 2020
3. Applied Energy, Elsevier, Jan-Feb 2019
4. Environmental Progress & Sustainable Energy, John Wiley & Sons, Jan-Feb and Oct-Nov 2019
5. Journal of Renewable and Sustainable Energy, AIP publishing, Oct-Nov 2018
6. Applied Energy, Elsevier, Oct 2018

### **Professional Affiliations**

1. Associate engineer, Council of Engineers, Thailand
2. Air pollution supervisor, Department of factory, Thailand

### **International journals**

1. Kanit Manatura (2020), Inert Torrefaction of Sugarcane Bagasse to improve its fuel properties, Case Studies in Thermal Engineering, Volume 19, Issue 3, 100623. (SCI)
2. Kanit Manatura, Jau-Huai Lu, Keng-Tung Wu, Hung-Te Hsu (2017), Exergy analysis on torrefied rice husk pellet in Fluidized Bed gasification, Applied Thermal Engineering, Vol.111, pp.1016-1024. (SCI)
3. Kanit Manatura, Jau-Huai Lu & Keng-Tung Wu (2018), Isothermal kinetics of torrefied *Cryptomeria Japonica* in CO<sub>2</sub> gasification, Biomass conversion and refineries, <https://doi.org/10.1007/s13399-016-0232-8>. (EI, Scopus)
4. Kanit Manatura, Jau-Huai Lu & Keng-Tung Wu (2017), Thermal decomposition and kinetic modeling of torrefied *Cryptomeria japonica* in a CO<sub>2</sub> environment, Biofuels, DOI:10.1080/17597269.2017.1302666. (EI, Scopus)

### **Local journals**

1. Rathapong Pirompoo and Kanit Manatura (2020), Farm Engineering and Automation Technology Journal, Vol.6, No. 2, 90 – 97. (TCI)

2. Ukrit Samaksaman, Rattanaporn Punthurat, Chanyud Kritsunankul, Kanit Manatura, Kittikorn Sasujit, Sirinuch Chindaraksa (2019), Study of Emission Characteristics during Combustion of Torrefied PET-Biomass Composite Pellets, Thai Environmental Engineering Journal, Vol.33, No.3, 47-55. (TCI)
3. Sukitta Jumrussi, Sirigan Poljan and Kanit Manatura (2019), Double Roller Crusher for Size Reduction of Coconut Shell Charcoals and Eucalyptus Chips, Journal of Science and Technology Vol. 8, No. 3. 50-59.(TCI)
4. Kanit Manatura (2019), Napier Grass Pyrolysis: Kinetic and Thermodynamics analysis, RMUTI Journal, Vol.12, No.2, 1-13. (TCI)
5. Kanit Manatura, Jau-Huai Lu (2017), EQUILIBRIUM MODELING OF RAW AND TORREFIED *LEUCAENA* IN A DOWNDRAFT FIXED BED GASIFIER, Journal of Research and Applications in Mechanical Engineering, Vol. 5, No. 2, 74- 81. (TCI)

#### **International conference papers**

1. Kanit Manatura, Hung-Te Hsu, Kai-Cheng Yang, Jau-Huai Lu, Keng-Tung Wu, Energy Analysis of Biomass Gasification in a Fluidized Bed, 中國機械工程學會第三十屆全國學術研討會論文集, 國立宜蘭大學 宜蘭縣, 中華民國一百零二年十二月六日、七日, 2013/2/6-7, Ilan, Taiwan.
2. Kanit Manatura, Hung-Te Hsu, Kai-Cheng Yang, Jau-Huai Lu, Keng-Tung Wu, Gasification of Torrefied Biomass in a Bubbling Fluidized Bed Gasifier, 2013 International Conference on Materials, Architecture and Engineering Technology (ICMAET 2013), ISBN: 978-1-60595-168-3, Beijing, China, December 19-20, 2013.
3. Kanit Manatura, Hung-Te Hsu, Kai-Cheng Yang, Jau-Huai Lu, Keng-Tung Wu, Exergy Analysis of Biomass Gasification in a Fluidized Bed, 2014 International Conference on Environmental Science and Biological Engineering (ESBE-2014), August 19-20, 2014 Beijing, China.
4. Kanit Manatura, Hung-Te Hsu, Kai-Cheng Yang, Jau-Huai Lu, Keng-Tung Wu, Exergy Analysis of Hydrogen Production from Biomass Gasification, HEFC 2014 Conference, 4 October, 2014, National Tainan University, Taiwan.
5. Kanit Manatura, Hung-Te Hsu, Kai-Cheng Yang, Jau-Huai Lu, Keng-Tung Wu, Energy efficiency on torrefied bamboo

- gasification in a Fluidized Bed, ASCON-IEEChE 2014, 9 November, 2014, Yeosu, Korea.
6. Kanit Manatura, Chen Hao Hung, Chian Ming Chen, Jau-Huai Lu, and Keng-Tung Wu, Energy Analysis for steam boiler burning with biomass, THE 4TH INTERNATIONAL CONFERENCE ON SUSTAINABLE ENERGY, 28 - 29 October 2015, Ho Chi Minh City, Vietnam.
  7. Kanit Manatura, Jau-Huai Lu, Keng-Tung Wu. Thermal decomposition of torrefied *Cryptomeria Japonica* in CO<sub>2</sub> environment, 2016 SCEJ Autumn Meeting, September 6-8, 2016, Tokushima University, Tokushima, Japan.
  8. Kanit Manatura, Jau-Huai Lu, Keng-Tung Wu, Combustion behavior of *Cryptomeria Japonica* using thermogravimetric analysis method, The 7th TSME International Conference on Mechanical Engineering, 13-16 December 2016, Chiang Mai, Thailand.