SciEE Research Groups

BIO

Biotechnologies for Energy and Environmental Applications

Biorefinery, Biofuels, Biomass, Microbiology and Apiculture

CMT

Chemical Technologies for Energy and Environmental Applications

Catalysis, Adsorbent, Micro- and Nano-plastic contamination, Polymer and Natural rubber

AMS

Advanced Materials and Systems for Energy and Environmental Applications

Fuel cell, Energy Storage, Solar Cell, Solar Thermal, Thermoelectric devices and Piezoelectric/Tribo-electrostatic devices

CSD

Computational Science and Data for Energy and Environmental Applications

Process simulation, Numerical Methods, Optimization, Fixed point and Mathematical Model

MNT

Management Technologies for Energy and Environmental Applications

Life Cycle Assessment, Building Energy Code, Feasibility study, Waste Management and Air pollution

Biotechnologies for Energy and Environmental Applications (BIO)

Bioethanol and bio-oil

- Production of **bioethanol** from lignocellulosic biomass and waste materials
- Bio-oil production from **microalgae**

Microbiology

- **Microbial screening** for agriculture, bioenergy, environmental and industrial applications
- **Microbial contamination** in industrial processes.

Biomethane and Biohydrogen

- **Biogas** production from waste materials
- **Biogas upgrading** technologies
- Food waste to **biohydrogen** by fermentation

Apiculture

- Meliponiculture
- Apiculture
- Honey bee and stingless bee products

Chemical Technologies for Energy and Environmental Applications (CMT)

Catalysis for sustainable energy

- Production of Liquid fuels from biomass derived syngas by **Fischer-Tropsch** synthesis
- **Heterogeneous Catalyst** properties and applications in energy production

Thermochemical process for renewable energy

- Syngas Production via **Carbon Dioxide Reforming** of Methane
- Hydrogen Production From Palmitic Acid Through **Autothermal Reforming**
- Renewable energy from biomass and solid wastes via **combustion, torrefaction, pyrolysis,** and **gasification**
- **Microwave energy application**

Adsorption

- Adsorption characteristics, co-adsorption and uptake mechanism of **adsorbent** for environmental field

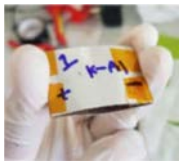
Extraction

- Natural Products Chemistry
- microwave assisted extraction of herb

Natural rubber

- Characterization and modification of polymer and natural rubber
- Development of new materials from natural rubber

Advanced Materials and System for Energy and Environmental Applications



AMS

Thermoelectric and Electroceramic devices

- Synthesis and characterizations of thermoelectric and electroceramic materials
- Device design for practical applications e.g. thermoelectric, piezoelectric and capacitor

Solar Energy devices

- Synthesis and characterization of materials for high efficiency solar cell
- Design of solar thermal collector for specific applications

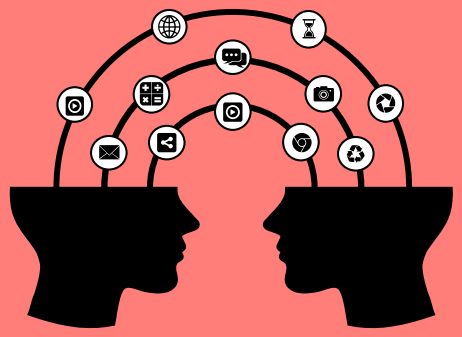
Electronic devices and systems

- Advanced materials for smart **energy harvesting** and **sensing devices** based on flexible piezo/tribo-electric nanogenerator
- Advanced materials for highly sensitive **electromagnetic wave detection**
- **Smart sensor and intelligent device**

Fuel cell and Energy storage

- An anode microporous layer in **direct ethanol fuel cells**
- Nafion-porous cerium oxide nanotubes composite membrane for **polymer electrolyte fuel cells**
- Development of novel and high performance nanomaterials for energy conversion and storage

Computational Science and Data for Energy and Environmental Applications (CSD)



01

Applied Mathematics

- Meshfree Approximation Methods
- Radial Basis Functions
- Numerical Methods of PDEs
- Mathematical Software and Scientific Computing
- Biological and Medical Modelling
- Stability and Bifurcations of Differential Equations

02

Statistical Analysis

- Quality Control
- Optimization
- Inventory Management
- Experimental Design
- Sampling Plan
- Forecasting
- Operation Research
- Neural Network
- Machine Learning

03

Mathematical Analysis

- Fixed Point Theory and Applications
- Split Problems
- Variational Inequality Problem
- Equilibrium Problem
- Optimization Theory
- Functional Analysis
- Hilbert Space
- Universal Algebra
- Semigroup Theory
- Lie and Piosson Algebra
- Non-commutative Algebra

04

Data communication and analysis

- Internet of things device and system
- Data hub and application

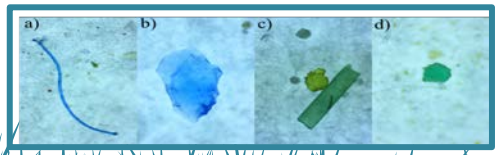
Energy

Energy conservation

- Energy efficiency assessment of building
- Energy conservation for compressed air system

Feasibility study of energy system

- **Techno-economic evaluation** for alternative energy system



Environmental

Waste Treatment and Management

- Solid Waste Management and utilization
- **Bioaugmentation** for toxic organic compounds treatment in wastewater
- Biodegradation of plastic wastes via **methane oxidation**

Pollution monitoring and control

- **Microplastic** contaminant in environment
- **PM2.5** and **NO_2** Investigation and Health Risk Assessment
  - Analysis of **Life cycle assessment** and **carbon footprint**

Management Technologies for Energy and Environmental Applications (MNT)

BIO

Name: Jakkrawut Maitip

(Ph.D. Applied Microbiology)

Email : Jakkrawut.m@sciee.kmutnb.ac.th

Research field / interest

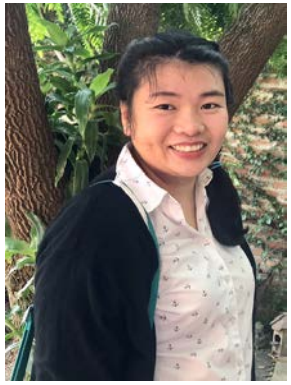
- Meliponiculture
- Apiculture
- Honey bee and stingless bee products
- Bioplastic (PHAs) from renewable resources

Publications and awards

Not every sperm counts: Male fertility in solitary bees, *Osmia cornuta*. PloS one, (2019), 14(3), p.e0214597.

A scientific note on the association of black fungus beetles (*Alphitobius laevigatus*, Coleoptera: Tenebrionidae) with Eastern honey bee colonies (*Apis cerana*). Apidologie, (2015), 48: 271-273.

Folding behavior of four silks of giant honey bee reflects the evolutionary conservation of aculeate silk proteins. Insect biochemistry and molecular biology. (2015), 59:72-79.



BIO MNT

Name: Sutharat Muenmee (D.Eng.)

Email : sutharat.m@sciee.kmutnb.ac.th

Educations

- D.Eng. (Environmental Engineering), Kasetsart University
- M.Sc. (Environmental Management) Chulalongkorn University
- B.Eng (Environmental Engineering) Kasetsart University

Research field / interest

- Solid Waste Management
- Landfill gas emission
- Methane oxidation
- Waste Utilization

Publications and awards

1. **"Bioaugmentation in two-stage activated sludge system to enhance the biodegradation of toxic organic compounds in high strength wastewater"** Chemosphere, 2018, 202, 208-217.

2. **"Enhancement of biodegradation of plastic wastes via methane oxidation in semi-aerobic landfill"** International Biodeterioration& Biodegradation, 2016, 113, 244-255.

3. **"Microbial Consortium Involving biological methane oxidation in relation to the biodegradation of waste plastics in a solid waste disposal open dump site"** International Biodeterioration& Biodegradation, 2015, 102, 172-181.

BIO

Name: Dr.Sunisa Boonma

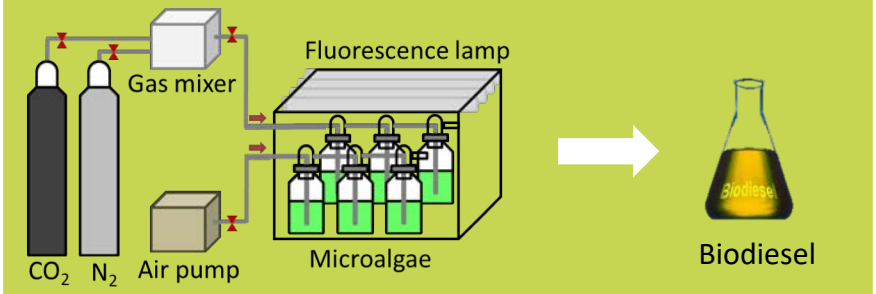
Email : sunisa.b@sciee.kmutnb.ac.th

Educations

- Ph.D. (Applied Microbiology, Chiang Mai University)
- M.Sc. (Biology, Chiang Mai University)
- B.Sc. (Microbiology, King Mongkut's University of Technology Thonburi)

Research field

- Biofuel production from microalgae and lignocellulosic biomass



Publications

- **"Semi-continuous cultivation of microalgal consortium using low CO_2 concentration for large-scale biofuel production"** Journal of Biotech Research **2019**, 10, 19-28.
- **"Effect of Hydrothermal Pre-Treatment on Ferulic Acid Content and Antioxidant Activities of Corn Hydrolysate"** Japan Journal of Food Engineering **2018**, 19(1), 27-34
- **"Enhanced carbon dioxide fixation and bio-oil production of a microalgal consortium"** Journal of Clean–Soil, Air, Water **2014**, 43(6), 761-766.

BIO MNT

Name: Dr.Teeraya Jarunglumlert

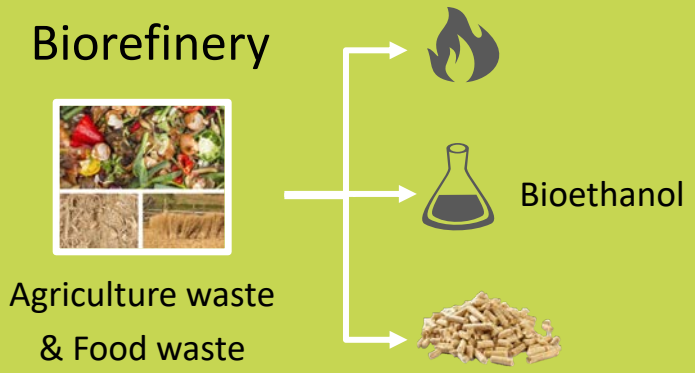
Email : teeraya.j@sciee.kmutnb.ac.th

Educations

- Ph.D. Engineering, University of Hyogo, Japan
- M.Eng. Chemical Engineering, Chulalongkorn University

Research interest

- Biorefinery



- Waste valorization
  - ❖ Food waste to hydrogen by fermentation
  - ❖ Household food waste composter
  - ❖ Drying by hot air from air compressor
  - ❖ Biogas production in swine farm
  - ❖ Cellulose aerogel from waste napkin paper

Selected publications

2020 Chemical Engineering Research and Design, 153, 75-84. Impact factor 3.28
2019 Journal of Advanced Agricultural Technologies, 6(2), 108-112.
2018 Environmental Progress & Sustainable Energy, 37(6), 1954-1958. Impact factor 1.596
2018 International Journal of Hydrogen Energy, 43(2), 634-648. Impact factor 4.229
2016 Chemical Engineering Science, 143, 287-296. Impact factor 3.372
2015 Food Research International, 75, 166-173. Impact factor 3.579
2015 Food Structure, 5, 42-50. Impact factor 1.574

BIO MNT

Name: Dr. Mathin Jaikua

Email : mathin.j@sciee.kmutnb.ac.th

Education

- Ph.D. Renewable Energy, Naresuan University, Thailand
- MS. Renewable Energy, Naresuan University, Thailand

Research field / interest

- Biotechnology
- Renewable Energy (Bio-Energy and Community Energy)
- Energy Law and Energy management
- Acceptance Model

Research Connection

Research Experience

- **"Study of Biogas Production from Waste Water of Saen Saeb Canal"** Proceeding of 4th Science Research Conference.
- **"Cytotoxiciy of *Jatropha curcas* L. Crude Extract on Human Colon Adenocarcinoma, Hepatocellular Carcinoma and African Green Monkey Kidney Fibroblast"** Poster Presentation of Science Exhibition.
- **"Development of a Microalgae Based System for Biogas Upgrading and Oil Production from Waste Biomass"** International Energy Journal.
- **"The Acceptance Model toward Cashless Society in Thailand"** The 9th International Conference on Information Communication and Management.

BIO

Name: Asst.Prof. Aiya Chantarasiri

(B.Sc. Biology and Ph.D. Microbiology)

Email : aiya.c@sciee.kmutnb.ac.th, Tel. : +66 (0)86 9934645

Laboratory room : Room 503, SciEE Building, KMUTNB-Rayong Campus

Research fields

- **Microbial screening for agriculture, bioenergy, environmental and industrial applications.**
- **Microbial contamination in industrial processes.**

Previous community services

I am at your service.

Selected publications

"Decolorization of synthetic dyes by ligninolytic *Lysinibacillus sphaericus* JD1103 isolated from Thai wetland ecosystems." Aquaculture, Aquarium, Conservation & Legislation, 2017, 10 (4), 814-819.

"Isolation and characterization of *Lysinibacillus sphaericus* BR2308 from coastal wetland in Thailand for the biodegradation of lignin." Aquaculture, Aquarium, Conservation & Legislation, 2017, 10 (2), 200-209.

For more publications and my research citations, please scan this QR code.

CMT

Name: Dr. Hussanai Sukkathsnyawat

(Ph.D. Industrial Chemistry)

Email : Hussanai.s@sciee.kmutnb.ac.th

Research field

- **Alternative Energy**
- **Heterogeneous Catalyst:**
  - ✓ **Fischer-Tropsch Synthesis**
  - ✓ **Methane Reforming**
  - ✓ **CO_2 Capture**
  - ✓ **Hydrodeoxygenation**

Publications

- **Scopus: 2**
- **Proceeding: 6**

Research Experience

- "Production of Liquid fuels (Kerosene) derived syngas by Fischer-Tropsch synthesis" (Royal Thai Air Force)
- "Production of Liquid fuels from biomass derived syngas by Fischer-Tropsch synthesis" (Phase I) (National Science and Technology Development Agency)
- "Prototype Reactor for Production of Liquid fuels from Biomass derived syngas by Fischer-Tropsch synthesis" (Phase II) (National Science and Technology Development Agency
- “The Production of Synthesis Gas derived from Natural Gas via Catalytic Reforming over Catalyst in Modified Packed Bed Reactor” (PTT)

CMT

Dr. Akarasingh Bampenrat

Email : akarasingh.b@sciee.kmutnb.ac.th

Education

Ph.D. Petrochemical Technology, Petroleum and Petrochemical College, Chulalongkorn University

B.Eng. Chemical Engineering, Mahanakorn University of Technology

Research fields

Renewable energy from biomass and solid wastes

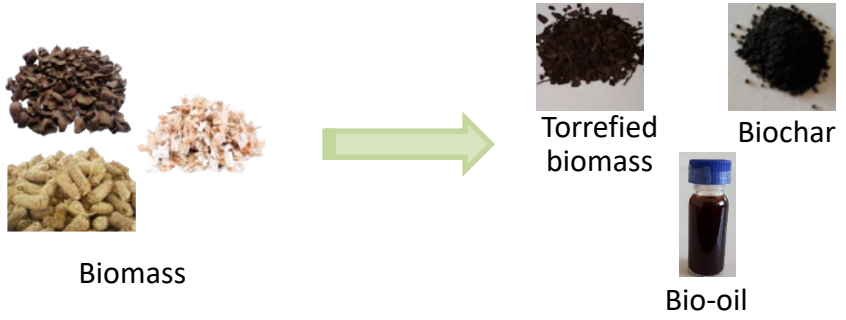
- Combustion and Co-combustion
- Torrefaction
- Pyrolysis
- Gasification

Catalysis and reaction engineering

Selected publications

Catalytic oxidation of naphthalene over CeO_2-ZrO_2 mixed oxide catalysts. Catalysis Communications, 2008, 9, 2349.

Naphthalene steam reforming over Mn-doped CeO_2-ZrO_2 supported nickel catalysts. Applied Catalysis A: General, 2010, 373, 154.



CMT

Name: Saowaluk Intarasiri (Ph.D. Industrial Chemistry)

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Education

- Ph.D. in Industrial Chemistry, King Mongkut's University of Technology North Bangkok
- M.Sc. in Industrial Chemistry, King Mongkut's University of Technology North Bangkok

Research Interest

- **Heterogeneous Catalyst**
- **Fischer-Tropsch Process**
- **Reforming Reaction**
- **Syngas**
- **Alternative Energy**

Research Connection

Highlight Publications

"Effect of pore size diameter of cobalt supported catalyst on gasoline-diesel selectivity" Energy procedia, 138 (2017) 1035-1040

"Pore size effect of mesoporous support on metal particle size of Co/SiO_2 catalyst in Fischer-Tropsch synthesis" International Journal of Advanced and Applied Sciences, 5(11) 2018, 80-85

"Physicochemical properties of the promoted cobalt-based Fischer Tropsch catalyst: Transmission electron and synchrotron radiation studied" Advances in Optics, Photonics, Spectroscopy & Application X, 2018, 209-298

"Dry Reforming in a Milli-Scale Reactor Driven by Simulated Sunlight" ChemEngineering 2018,2, 50

CMT

Dr. Thanarak Srisurat

Email : thanarak.s@sciee.kmutnb.ac.th

Education

Ph.D. (Chemical Engineering), King Mongkut's University of Technology North Bangkok

M.Eng. (Chemical Engineering), King Mongkut's University of Technology North Bangkok

Research Interest

- Computational Fluid Dynamic (CFD), Process design and Simulation
- Multi-tubular Wall Coated Reactors
- Reforming of Methane
- Alternative Energy
- Fuel Processing

Selected publications

- Syngas Production via Carbon Dioxide Reforming of Methane in a Wall-Coated Monolith Reactor." Advanced Materials Research, 2013, 805-806, 1257.
- Hydrogen Production From Palmitic Acid Through Autothermal Reforming : Thermodynamic Analysis." Engineering Journal, 2015, 19(4), 153.

CMT

Dr. Panawan Suttiarporn
(Ph.D in Chemistry)

Email: panawan.s@sciee.kmutnb.ac.th Tel: +66 (0)85-6520272

Educations

- Ph.D. (Chemistry, Chiang Mai University)
- B.Sc. (Chemistry, Chiang Mai University)

Research interest

- Analysis of phytochemicals and volatile constituents
- Optimization of microwave assisted extraction of herb by response surface method
- Phytoremediation of heavy metal

Selected Publications

1. "**Optimization of lead removal via Napier grass in synthetic brackish water using response surface model."** IOP Conference Series: Earth and Environmental Science, 2018, 120: (1-6).

2. **"GC-MS Analysis, Antioxidant and α-Glucosidase Inhibitory Activities of the Methanol Extract of *Cuscuta reflexa* Roxb. Grown on Different Hosts"**, International Journal of Applied Science and Technology, 2017, Special Issue: 59-653.

3. **"Simultaneous quantification of Vitamin E, γ-oryzanols and xanthophylls from rice bran essences extracted by supercritical CO_2."** Food Chemistry, 2016, 211: 140-147.

CMT AMS

Kriangsak Ketpang (Ph.D)

Email : kriangsak@sciee.kmutnb.ac.th

Education

Ph.D in Energy Systems Engineering, Daegu Gyeongbuk Institute of Science & Technology, DGIST, Korea

M.Sc. in Chemical Engineering, Hankyong National University, Korea

Research interest

- **Development of novel and high performance nanomaterials for energy conversion and storage**
- **Innovative approaches for high performance electrode materials**
- **Electrochemical CO_2 capture**

Research connection

Selected Publications

"Nafion-porous cerium oxide nanotubes composite membrane for polymer electrolyte fuel cells operated under dry conditions", *J. Power Sources* 329 **(2016)** 441-449.

"Hierarchical Nanostructured Pt_8Ti-TiO_2/C as an efficient and durable anode catalyst for direct methanol fuel cells", *ACS Catal.* 5 **(2015)** 7321-7327**.**

"Facile synthesis of porous metal oxide nanotubes and modified Nafion composite membranes for polymer electrolyte fuel cells operated under low relative humidity", *ACS Appl. Mater & Interfaces* 6 (2014) 16734-44.

"Hierarchical nanostructured $NiCo_2O_4$as an efficient bifunctional non-precious catalyst for rechargeable zinc-air battery", *Nanoscale* 6 (2014) 3173-3181.

CMT

Porntip Rojruthai (Ph.D.)

Email: porntip.r@sciee.kmutnb.ac.th Tel: +66(0)98-2499294

Educations

- Ph.D. (Polymer Science and Technology, Mahidol University)
- B.Sc. (Chemistry, Mahidol University)

Research field / interest

- Characterization and modification of polymer and natural rubber
- Development of new materials from natural rubber
- Natural rubber latex technology
- Biosynthesis study of natural rubber

Selected Publications

1. "Improved compatibility between silica and natural rubber by the use of carbonyl-terminated low molecular-weight natural rubber" Kautsch. Gummi Kunstst. 62 (2018) 39-45.

2. "Characterization of associated proteins and phospholipids in natural rubber latex" J. Biosci. Bioeng. 111 (2011) 628-634.

3. "*In vitro* synthesis of high molecular weight rubber by *Hevea* small rubber particles" J. Biosci. Bioeng. 109 (2010) 107-114.

CMT

Name: Waraporn Chanakul (Ph.D. Organic Chemistry)

Email : waraporn.c@sciee.kmutnb.ac.th

Tel: +66(0)89-1716577

Research field / interest

Natural Products Chemistry

- extraction, isolation of pure compounds from plants and microbial and evaluate their bioactivities.

Green synthesis by using enzyme

- Immobilized lipase for synthesis of flavor and fragrant compounds.

Publications

Samreang Bunteang, Waraporn Chanakul, Sakchai Hongthong, Chutima Kuhakarn, Watcharra Chintakovid, Natthapat Sungchawek, Radeekorn Akkarawongsapat, Jitra Limthongkul, Narong Nantasaen, Vichai Reutrakul, Thaworn Jaipetch. **Anti-HIV Activity of Alkaloids from *Dasymaschalon echinatum***. Natural Product Communications. **2018**, *13* (1), 29-32.

ฐาปนี ปธานราษฎร์, อัยยะ จันทรศิริ, วราพร ชนะกุล **The studies of properties of immobilized lipase on polymer support by physical adsorption.** Proceedings of the 6th National Conference Nakhonratchasima College (NMCCON 2019), March 30th, 2019, Nakhonratchasima, 701-711.

CMT

Name: Asst. Prof. Chana Prapruddivongs(Ph.D.)

Email : chana.p@sciee.kmutnb.ac.th

Educations

- Ph.D. (Materials Technology) King Mongkut's University of Technology Thonburi
- M.Eng. (Chemical Engineering) King Mongkut's University of Technology Thonburi
- B.Sc (Industrial Chemistry) King Mongkut's Institute of Technology Ladkrabang

Research field / interest

- Polymer Processing
- Biodegradable Polymer
- Polymer composites

Publications and awards

1. **"Effect of surface-modified silica on the thermal and mechanical behaviors of poly(lactic acid) and chemically crosslinked poly(lactic acid) composites"** Journal of Thermoplastic Composite Materials, 2019, (In Press)..
2. **"Correlative roles of silica as a blowing aid and a Pb(II) adsorbent for natural rubber composite foams"** Polymer Testing, 2019, 77 (8), 1-9.
3. "**Effect of silica resources on the biodegradation behavior of poly (lactic acid) and chemical crosslinked poly (lactic acid) composites"** Polymer Testing, 2018, 71 (10), 87-94.
4. **"Wood, Silver-Substituted Zeolite and Triclosan as Biodegradation Controllers and Antibacterial Agents for PLA and PLA Composites"** Journal of Thermoplastic Composite Materials, 2015, 30 (5), 583-598.

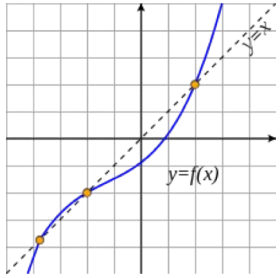
CSD

Name: Asst.Prof.Jitsupa Deepho, Ph.D.

E-mail : jitsupa.d@sciee.kmutnb.ac.th, Tel. : +66 (0)92 2708560

Education:

B.Ed. Mathematics, First-Class Honors , N.U., Thailand
M.Sc. Mathematics for Teaching, U.R.U., Thailand
Ph.D. Applied Mathematics, KMUTT, Thailand
Ph.D. Mathematics, UJA, Spain



RESEARCH

- *Fixed Point Theory and Applications*
- *Split Problems*
- *Variational Inequality Problem*
- *Equilibrium Problem*
- *Hilbert Space*

Research Connections

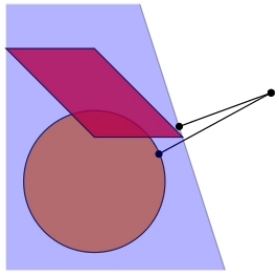
KMUTT

KMUTT–Fixd Point Theory & Applications Research Group

UNIVERSIDAD DE JAÉN

Now 20 Papers Publications

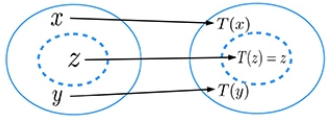
Example;

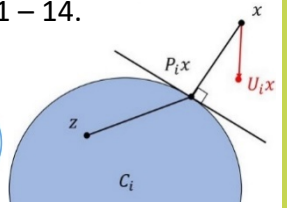


J. Deepho, P. Thounthong, P. Kumam and S. Phiangsungnoen, *A new general iterative scheme for split variational inclusion and fixed point problems of k-strick pseudo-contraction mappings with convergence analysis*, Journal of Computational and Applied Mathematics, 318 (2017), 293 – 306. (Impact Factor 2015: 1.328)

SCAN ME

K. Sitthithakerngkiet, **J. Deepho**, J. Martínez–Moreno and P. Kumam, *Convergence analysis of a general iterative algorithm for finding a common solution of split variational inclusion and optimization problems*, Numerical Algorithm, January (2018), 1 – 14. (Impact Factor 2015: 1.62)





CSD

Name: Suganya Phantu(Ph.D. Applied Statistics)

Email : suganya.p@sciee.kmutnb.ac.th

Tel: +66(0)83 0946665

Research field / interest

1. Quality Control
2. Optimization
3. Inventory Management
4. Experimental Design
5. Sampling Plan
6. Forecasting
7. Operation Research
8. Neural Network
9. Machine Learning

Publications and awards

1. A Mixed Double Exponentially Weighted Moving Average - Tukey's Control Chart for Monitoring of Parameter Change. Thailand Statistician, 2019, 17(1), 45-58.
2. Explicit Expressions of Average Run Length of Moving Average Control chart for Poisson Integer Valued Autoregressive Model, Proceedings of the International Multi Conference of Engineers and Computer Scientists, (2016) 112-116.
3. DMA Chart monitoring of the First Integer Valued Autoregressive Processes of Poisson Counts, Advances and Applications in Statistics, 52(2) (2018) 97-119.
4. Explicit Formula of Average Run Length of Moving average Control Chart for Poisson INMA(1) Process, Advances and Applications in Statistics, 52(4) (2018) 235-250.

CSD

Name: NAGORNCHAT CHANSURIYA

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Education

- M.Sc. in Mathematics, Ubon Ratchathani University, Thailand
- B.Sc. in Mathematics, Maejo University , Thailand

Research Interest

- Universal Algebra
- Semigroup Theory
- Lie and Piosson Algebra
- Non-commutative Algebra

Research Connection

Publications

"On Ternary Monoid of all hypersubstitutions of type (n) "
Malaysian Journal of Mathematical Science, 13(2) 139-153

"On Ternary Monoid of all hypersubstitutions of type (2)"
Communications in Mathematics and Applications, (Available online in 31.12.2019)

CSD

Dr.Nissaya Chuathong

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Education

- Ph.D. (Applied Mathematics), Khon Kaen University, Thailand
- M.Sc. (Applied Mathematics), Khon Kaen University, Thailand
- B.Sc. (Applied Mathematics), Khon Kaen University, Thailand

Research Interests

- Meshfree Approximation Methods
- Radial Basis Functions
- Numerical Methods of PDEs
- Mathematical Software and Scientific Computing

Selected Publications

- An automatic node-adaptive scheme applied with a RBF-collocation meshless method. Applied mathematics and computation, 348:102-125. (2019).
- Numerical solution to coupled Burgers' equations by Gaussian-Based Hermite collocation scheme. Journal of applied mathematics, 2018: 3416860. (2018).
- A numerical investigation on variable shape parameter schemes in a meshfree method applied to a convection-diffusion problem. International journal of applied engineering research, 12(14): 4162-4170. (2017).
- A proposed adaptive inverse multiquadric shape parameter applied with the dual reciprocity BEM to nonlinear and coupled PDE. Journal of applied sciences, 17(10): 491-501. (2017).

CSD

Nitithorn Sukwong

Email : nitithorn.s@sciee.kmutnb.ac.th

Education

- M.Sc. (Applied Mathematics), KMUTNB, Thailand
- B.Eng. (Materials Engineering), KMUTNB, Thailand

Research Interests

- Blow-up in Porous Medium Equations
- Numerical Methods of PDEs
- Mathematical Software and Scientific Computing

Selected Publications

- Blow-up for a degenerate and singular parabolic equation with a nonlocal source, Advances in Difference Equations, Springer, No. 1, 264, 2019.
- The conditions for blow-up and global existence of solutions for a degenerate and singular parabolic equation with a non-local source, Le Matematiche (2019).

CSD

Name: Asst.Prof. Rachadawan Darlai

(M.Sc. Applied Mathematics)

Email : rachadawan.d@sciee.kmutnb.ac.th

Research field / interest

- **Numerical Analysis**
- **Biological Modelling**
- **Medical Modelling**
- **Stability and Bifurcations of Differential Equations**

Publications and awards

2018

- Andronov-Hopf and Neimark-Sacker bifurcations in time-delay models of HIV transmission., Thai Journal of Mathematics 2018: Special Issus AMM: 239-259.

2017

- Andronov-Hopf bifurcation and sensitivity analysis of a time-delay HIV model with logistic growth and antiretroviral treatment., Advances in Difference Equations, 2017:138.

CSD

Dr.Thidaporn Seangwattana

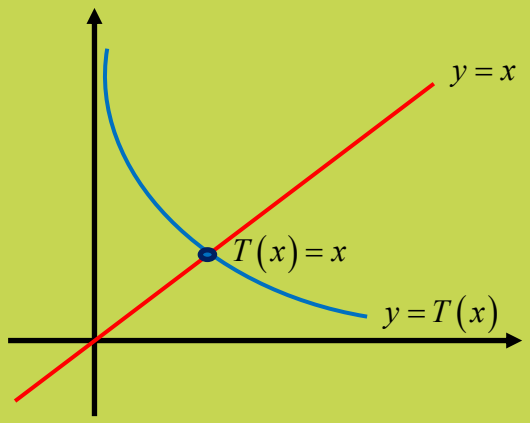
Email : thidaporn.s@sciee.kmutnb.ac.th

Education

- Ph.D. (Mathematics), Naresuan University, Thailand
- B.Sc. (Mathematics), Naresuan University, Thailand

Research Interests

- Optimization Theory
- Functional Analysis
- Fixed Point Theory



Selected Publications

- Optimal Solution of Random Common Best Proximity Points for S-Contractions (2018).
- A New Random generalized S-Contraction Mapping for Finding a Common Random Best Proximity Point (2018).
- A generalized strong Borwein - Preiss variational principle in a complete metric space. (2017).
- Borwein – Preiss vector variational principle(2017).
- The Borwein-Preiss variational principle for nonconvex countable systems of equilibrium problems (2016)
- Borwein – Preiss variational principle revisited (2016)
- Generalizations of the strong Ekeland variational principle with a generalized distance in completemetricspaces (2013)

CSD

Name: Nutdechatorn Puangngernmak

[Ph.D Electrical Engineer]

Email : nutdechatorn.p@sciee.kmutnb.ac.th

Research field / interest

- **Microwave application and sensor technologies**
- **Energy technologies**
- **Smart device and IOT technology**
- **AI and data analysis**
- **Computer simulation**

Patent:

2 Patents

2 Petty patents

About me

Publications and awards

- Transmission Line Based Wideband Microwave Sensor for Determination of Biodiesel Purification. ENGINEERING JOURNAL
- Characterization of Heavy Metal Contaminated Wastewater Using a Coaxial Sensor and Electromagnetic Wave Reflection Technique, Applied Mechanics and Materials Journal

Award

- Special Award and Silver medal, International Exhibition of Inventions Geneva 2018
- The winner ,Digital startup – Depa 2017 ,Innovation brotherhood 2017,

AMS

Dr. Panuwat Ekdharmasuit

Email : panuwat.e@sciee.kmutnb.ac.th

Education

Ph.D (Energy Technology), JGSEE, King Mongkut's University of Technology Thonburi
M.Sc. (Energy Technology), SEEM, King Mongkut's University of Technology Thonburi
B.Sc. (Physics), Kasetsart University

Research Interest

- ✓ **Fuel cell and battery technology for portable applications**
- ✓ **Energy conservation technology**

Publications

- ❖ The role of an anode microporous layer in direct ethanol fuel cells at different ethanol concentrations, Int J Hydrogen Energy.
- ❖ Anode structure design for generating high stable power output for direct ethanol fuel cells, Fuel.
- ❖ Fabrication and Performance of Membrane Electrode Assembly Prepared by a Catalyst-Coated Membrane Method: Effect of solvents Used in a Catalyst Ink Mixture, Energy and Fuels.

AMS

Asst. Prof. Dr. Panupong Jaiban

(Ph.D in Materials Science)

Email: panupong.j@sciee.kmutnb.ac.th Tel: +66 (0)89-2649684

Educations

- Ph.D. (Materials Science, Chiang Mai University)
- B.Sc. (Materials Science, Chiang Mai University)

Research field / interest

- Materials for alternative energy applications
- Materials for advanced electronic devices.
- Biomaterials from agricultural and food waste.

Selected Publications

1. "Phase characteristics, microstructure, and electrical properties of (1-x)$BaZr_{0.2}Ti_{0.8}O_3$-(x)$(Ba_{0.7}Ca_{0.3})_{0.985}La_{0.01}TiO_3$ ceramics" Ceramic International 45 (2019) 17502-17511.
2. "Dielectric response on ultraviolet light irradiation of $Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3$ based ceramics" Materials Letters 243 (2019) 169-172.
3. "Thermoelectric properties of $YBa_2Cu_3O_{7x}$-Na_yCoO_2 segmented oxide ceramics" Materials Letters 236 (2019) 378-382.

AMS

Name: Dr. Piyawath Tapsanit (Ph.D in Physics)

Email: piyawath.t@sciee.kmutnb.ac.th

Tell: +66 (0)83-0245371

Research field / interest

- Optical metamaterials
- Solar-thermal power generation
- Thermoelectric power generator (TEG) and thermoelectric cooler (TEC)

Selected Publications

"Quasi-analytical solutions of hybrid platform and the optimization of highly sensitive thin-film sensors for terahertz radiation," JOSAB 33(11), 2535-2544 (2016).

"Closed-form formulae of effective parameters of hyperbolic metamaterial made by stacked hole-array layers working at terahertz or microwave radiation," JOSAB 34(9), 1930-1936 (2017).

AMS

Name: Saichon Sriphan (Ph.D.)

Email : saichon.s@sciee.kmutnb.ac.th Tel: +66(0)94-6217621

Education

- Ph.D. in Electrical Engineering, Naresuan University, Thailand
- B.Eng in Electrical Engineering (2nd Honor), Naresuan University, Thailand

Research Interest

- **Novel Energy Sensing/Harvesting Devices**
- **Electronic Devices Characterization**

Research Connection

Highlight Publications

"Tetragonal $BaTiO_3$ nanowires: a template-free salt-flux-assisted synthesis and its piezoelectric response based on mechanical energy harvesting" Journal of Materials Chemistry C, **2019**, 7, 8277-8286. Impact Factor = 5.976

"High-performance hybridized composited-based piezoelectric and triboelectric nanogenerators based on $BaTiO_3$/PDMS composite film modified with $Ti_{0.8}O_2$ manosheets and silver nanopowders co-fillers" ACS Applied Energy Materials, **2019**, 2(5), 3840-3850.

"Influence of dispersed phase morphology on electrical and fatigue properties of BaTiO3/PDMS nanogenerator" Ceramics International, 2018, 44, S38-S42. Impact Factor = 3.057

"Facile roughness fabrications and their roughness effects on electrical outputs of the triboelectric nanogenerator" Smart Materials and Structures, 2018, 27, 105026. Impact Factor = 2.963

MNT

FACULTY OF SCIENCE ENERGY AND ENVIRONMENT

Name : Krittaphas Mongkoldhumrongkul (Ph.D. Renewable Energy)

Email : krittaphas.m@sciee.kmutnb.ac.th

Education : M.S. and Ph.D. Renewable Energy , Naresuan University.

M.B.A. , King Mongkut's Institute of Technology Ladkrabang.

Research field / interest

Life Cycle Assessment

Climate Change and Carbon Credit

Building Energy Code

Energy Economics

Energy Policy

Feasibility Study of Renewable Energy System

Energy Audit and Conservation

Certificate and Publications

Certificate

Thailand Voluntary Emission Reduction Program (T-VER)

Life Cycle Assessment (LCA)

Corporate Ecosystem Valuation (CEV)

Environmental and Health Impact Assessment (EHIA)

Rueanngoen P., Meawnaum C. and Mongkoldhumrongkul K. (26 July 2019). Energy Efficiency Assessment of Central Classroom Building in King Mongkut's University of Technology North Bangkok, Rayong Campus. In 5th TECHCON 2019 (pp.OSC146-52). Bangkok: Siam Technology College, Thailand.

Yantabutr K., Kongpikul N. and Mongkoldhumrongkul K. (26 July 2019). Financial Feasibility Study of Photovoltaic Cell on Male Dormitory in King Mongkut's University of Technology North Bangkok. In 5th TECHCON 2019 (pp.OSC139-45). Bangkok: Siam Technology College, Thailand.

Chaisriweng A. and Mongkoldhumrongkul K. (13 – 15 June 2018). A Study of Energy Conservation for Compressed Air System in Electrolux Thailand Co.,Ltd. In 14th Conference on Energy Network of Thailand (pp.558-561). Rayong: Rajamangala University of Technology Thanyaburi, Thailand.

Mongkoldhumrongkul K. and Thanarak P. (2017). Identification of the Critical Indicators for the Establishment of Community-Based Biomass Power Plant Using the Confirmatory Factor Analysis. Burapha Science Journal, 22(1), 279-293.

MNT

Asst.Prof. Parnuch Hongsawat

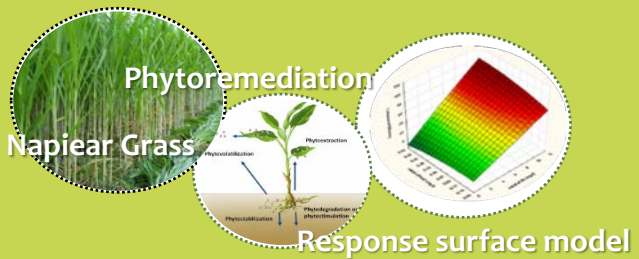
(Ph.D in Environmental Management)

Email: parnuch.h@sciee.kmutnb.ac.th
Tel: +66 (0)89-7760032

Research interest

Selective adsorbent for environmental field

Phytoremediation of heavy metal



Monitoring and risk assessment of Microplastic contaminant in environment

Selected Publications

1. "Removal of the antibiotic sulfamethoxazole from environmental water by mesoporous silica-magnetic graphene oxide nanocomposite technology: Adsorption characteristics, coadsorption and uptake mechanism." Colloids and Surfaces A, 2019, 580: (123716).

2."Optimization of lead removal via Napier grass in synthetic brackish water using response surface model." IOP Conference Series: Earth and Environmental Science, 2018, 120: (1-6).

3. "Removal of Ciprofloxacin from aqueous solution by magnetic graphene oxide.", KMUTNB International Journal of Applied Science and Technology, 2017, Special Issue: 129-135.

MNT

SciEE KMUTNB FACULTY OF SCIENCE ENERGY AND ENVIRONMENT

Dr. Panida Prarat

(Ph.D in Environmental Management)

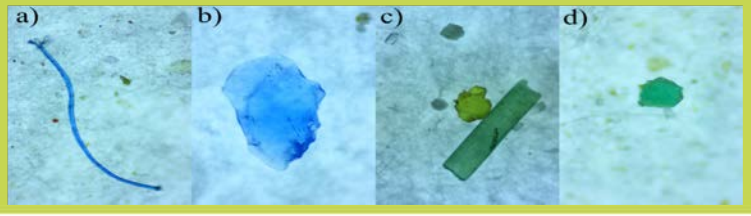
Email: panida.p@sciee.kmutnb.ac.th , Tel: +66 (0)86-7603725

Research interest

Magnetic based-adsorbent for environmental field

Waste Utilization

Microplastic contaminant in environment



Selected Publications

1. **"Removal of the antibiotic sulfamethoxazole from environmental water by mesoporous silica-magnetic graphene oxide nanocomposite technology: Adsorption characteristics, coadsorption and uptake mechanism."** Colloids and Surfaces A, 2019, 580: (123716).

2. **Pharmaceuticals and personal care products removal from aqueous solution by nitrogen-functionalized carbon adsorbent derived from pomelo peel waste.** IOP Conference Series : Earth and Environmental Science, 2019, 257: 012019.

3. **"Removal of Ciprofloxacin from aqueous solution by magnetic graphene oxide."**, KMUTNB International Journal of Applied Science and Technology, 2017, Special Issue: 129-135.

MNT

Name: Susira Bootdee (Ph.D. Environmental science)

Email : susira.b@sciee.kmutnb.ac.th

Educations

- Ph.D. (Environmental science, Chiang Mai University)
- B.Sc. (Environmental science, Chiang Mai University)

Research field / interest

- Air pollution monitoring
- Water quality monitoring
- Indoor air pollution monitoring

Connection:

ESRC Environmental Science Research Center ศูนย์วิจัยวิทยาศาสตร์สิ่งแวดล้อม คณะวิทยาศาสตร์ มหาวิทยาลัยเชียงใหม่

Publications and awards

1. "Indoor $PM_{2.5}$ and its Polycyclic Aromatic Hydrocarbons in Relation with Incense Burning", *IOP Conference Series: Earth and Environmental Science*, Mar. 2018, Vol. 120, pp.1-8.

2. "การผันแปรเชิงพื้นที่และฤดูกาลของความเข้มข้นของก๊าซไนโตรเจนไดออกไซด์ในบรรยากาศเมืองพัทยา จังหวัดชลบุรี", *วารสารวิชาการพระจอมเกล้าพระนครเหนือ* 29 (3), 2562, 481-494.

3. "Indoor Nitrogen Dioxide Investigation and Health Risk Assessment in Primary Schools at Rayong City, Thailand", *Current Applied Science and Technology 19(3)*, 2019. pp. 248-262.