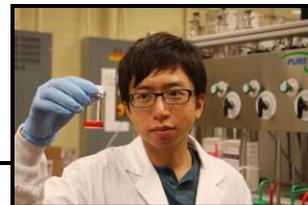


# Assoc. Prof. Pongsakorn Kanjanaboos, Ph.D.

pongsakorn.kan@mahidol.edu • 090-247-2221(Thailand)

www.facebook.com/KanjanaboosLab/ • pkanjano.wixsite.com/kanjanaboos • Twitter: KanjanaboosLab



## CONCENTRATIONS

Perovskite Solar Cells, Perovskite Light Emitting Diodes, Radiative Cooling Films, Condensed Matter Physics, Device Physics, Quantum Dot, Nanotechnology, Nanoscale Materials, Nano Sensors, Nanomechanics, Self-Assembly, Microscopies, Coating Technologies, and Lasers.

## BRIEF SUMMARY

Assoc. Prof. Dr. Pongsakorn received his B.A. in physics and economics from Washington University in Saint Louis in 2008. He earned his Ph.D. in physics from the University of Chicago in 2013. In collaboration with Argonne National Laboratory, Pongsakorn investigated self-assembly, nanomechanics, and application of solution-processed nanoparticle films. Because of his interests in both academic and business sides of R&D, he supplemented his business knowledge at the University of Chicago Booth School of Business. In 2013, Pongsakorn joined the Sargent lab at Electrical and Computer Engineering at the University of Toronto, one of the world-leading laboratories in colloidal quantum dot-based materials and perovskite and well known for the current world-record for CQD solar cells, as a postdoctoral fellow to work on solution-processed solar cells, light emitting diodes, lasing materials, and light detectors. Currently, Pongsakorn is the head of Advanced Technologies for Energy and Sustainability Lab at School of Materials Science and Innovation, Faculty of Science at Mahidol University in Thailand. His current research interests include solution-processed semiconductors i.e. perovskite solar cells and LEDs and radiative cooling films for heat reduction in building. He has published more than 70 international publications with more than 7000 citations and earned 2 Thai petty patents (5 more pending patent and 6 more pending petty patents). He always enjoys his time working with various undergraduate and graduate students in materials science with funding from both government agencies and industries, together exploring science and developing innovation.

## BACKGROUND



**Mahidol University**, faculty member at School of Materials Science and Innovation, Nakhon Pathom, Thailand *October 2015 - Now*

- Research Area: perovskite solar cells, light emitting diodes, radiative cooling films, nanomechanics and nanotechnology, solution-processed technologies, and physics of thin films.



**The University of Toronto**, Postdoc in Electrical and Computer Engineering, Toronto, ON

*September 2015*

- Research Area: nanotechnology, solar cells, and light emitting devices.
- Postdoctoral Advisor: Prof. Edward (Ted) H. Sargent, the Canada Research Chair in Nanotechnology.



**The University of Chicago**, Ph.D. in Physics, Chicago, IL

*August 2013*

- Ph.D. Advisor: Prof. Heinrich M. Jaeger, William J. Friedman and Alicia Townsend Professor of Physics.
- Ph.D. Committee: Prof. Thomas A. Witten and Prof. Dmitri Talapin.

**The University of Chicago**, M.S. in Physics, Chicago, IL

*August 2009*



**Washington University in Saint Louis**, B.A. in Physics and Economics, Saint Louis, MO

*May 2008*

- GPA: 3.97/4.00; Summa Cum Laude.
- Research Advisor: Prof. Stuart A. Solin. Research: Magnetic properties of S= 1/2 quasi-triangular lattice materials.

## EXPERIENCES

**School of Materials Science and Innovation, Faculty of Science, Mahidol University**

*October 2015 – Present*

Faculty member, Head of the “Advanced Technologies for Energy and Sustainability” Lab

- Colored perovskite solar cells for window replacement
- Perovskite solar cell for high humidity environment
- Solvent engineering techniques for low cost and high performance optoelectronics
- Perovskite LEDs and luminescent properties
- Radiative cooling films to reduce heat from buildings via low cost and scalable process.
- Materials science, nanotechnology, and nanoscale characterization
- Thin films, surfaces, and coating technologies
- Slot-die printing and flexible electronics

**Sargent Lab, University of Toronto**

*November 2013 – September 2015*

Postdoctoral Fellow

- Mastered use of advanced microscopy instruments (AFM, SEM, FIB, TEM, and Kelvin Probe) to help enhance understanding of photovoltaic and light emitting devices.
- Fabricated and optimized optoelectronic devices including solar cells, LEDs, photodetectors, and lasing materials by identifying issues and seeking innovative solutions to improve their performance.
- Used finite element simulation to design device architecture and improve heat flow in light emitting devices.
- Fabricated waveguides through E-beam lithography.
- Procurement and management of different internal characterization systems and external microscopy usage for the group (Different SEM systems, TEM, Kelvin probe (KPM), AFM (Asylum Cypher and Bruker Catalyst), and more). Worked as a lead specialist and negotiator for the University of Toronto to acquire new instrument with optimal capacities at competitive prices (~\$500000 total values).
- Organized social events for fellow researchers to boost collaboration and knowledge transfer.

**University of Chicago Materials Research Science and Engineering Center (MRSEC)** *November 2008 – August 2013*  
Graduate Student

- Mastered use of advanced scientific instruments and engineering techniques including transmission electron microscope (TEM), scanning electron microscope (SEM) (imaging and e-beam lithography), atomic force microscope (AFM) (imaging and nanoindentation), metal evaporator, reactive ion etcher (RIE), focus ion beam (FIB), laser pattern generator (photolithography), ellipsometer, physical property measurement system (PPMS), spin-coating, and X-ray scattering.
- Self-assembled freestanding nanoparticle monolayers through drying-mediated technique and LB Trough using different kinds (Co, Fe<sub>3</sub>O<sub>4</sub>, and Au) and sizes of nanoparticles and studied their nanomechanics and sensing capabilities.
- Synthesized gold nanoparticles with alkyl-based capping ligands of different sizes (5nm – 20 nm).
- Mentored a junior Ph.D. student, trained two new postdocs, and taught ~25 undergrads in a laboratory course.
- Organized monthly interdisciplinary seminars in collaboration with MRSEC to foster collaboration between researchers.

**Center for Nanoscale Materials (CNM), Argonne National Laboratory** *December 2009 – June 2013*  
Graduate Student Researcher

- Helped develop an interferometer system for nanoelectromechanical devices with few picometer sensitivity.
- Developed quantitative models using Comsol to study cracks in nanoparticle ultrathin sheets, complementing experimental results that led to the first direct measurement of the sheets' Poisson's ratio.
- Worked on fabricating and characterizing nanoparticle-based devices in a clean-room environment.
- Wrote two successful peer-reviewed proposals for instrument time at CNM.
- Collaborated with 3 postdocs, 3 engineers, 5 scientists, 5 students, and 2 faculty members during Ph.D.

### NEWS COVERAGE

- [“Indoor perovskite PV solar cells with 32.0% efficiency”](#) PV Magazine, July 7, 2023.
- [“Thai Scientists Use New Spray-Coating Process to Create Multilayer Solar Cells”](#) World Industrial Reporter, June 4, 2020
- [“Precision spray coating could enable solar cells with better performance and stability”](#) Science Daily and The Optical Society, June 3, 2020
- ["Precision Perovskite Spray Coating for Photovoltaics"](#) Optics and Photonics News, June 11, 2020
- ["New precision spray-coating method enables layered deposition of different perovskite materials for stacked architectures"](#) Perovskite-info, June 4, 2020
- And [List.Solar](#), [New Atlas](#), [AZoOptics](#), [LinkedIn](#), and many more
- ["Green LEDs emit purest colour yet"](#) IOP, (2015)
- ["U of T researchers fabricate purest green emitting LED ever"](#) LED Industry News, (2015)
- ["New technique offers spray-on solar power"](#) Science Daily, (2014)
- ["Nanomechanical resonator self-assembled from nanoparticles"](#) Physics.org, (2013)
- ["Tennis ball inspired Kanjanaboos to study physics"](#) Wustl.edu, (2008)

### PATENTS/PETTY PATENTS

**Number of IPs: 13**

2021	<b><u>Kanjanaboos, P.</u></b> & Ponchai, J.	Granted and listed #17952 “สารละลายสำหรับผลิตฟิล์มบางเพอรอฟสไกต์แบบมีสี”	Petty Patent (granted)
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2020	<b><u>Kanjanaboos, P.</u></b> & Pinsuwan, K.	Granted and listed #16044 “กรรมวิธีการผลิตแผ่นฟิล์มบางเพอร์ฟอสโกลไทภายใต้ระบบ สุญญากาศ”	Petty Patent (granted)
2022	<b><u>Kanjanaboos, P.</u></b> & Houtae, T.	“กรรมวิธีการนำกลับมาใช้ใหม่ของฟิล์มบางเพอร์ฟอสโกลไทด้วย กระบวนการฉีดพ่นสารละลาย” เลขที่คำขออนุสิทธิบัตร 2103003005	Petty Patent (pending)
2022	<b><u>Kanjanaboos, P.</u></b> , Tun, M. Z., & Srathongsian, L.	“สารละลายสำหรับผลิตฟิล์มบางเพอร์ฟอสโกลไทแบบใส” เลขที่คำขออนุสิทธิบัตร 2101006352	Patent (pending)
2022	<b><u>Kanjanaboos, P.</u></b> & Gilliot, E.	“กรรมวิธีการผลิตแผ่นฟิล์มบางเพอร์ฟอสโกลไทด้วยกระบวนการ เคลือบแบบสล็อตตายและการสเปรย์” เลขที่คำขออนุสิทธิบัตร 2103003689	Petty Patent (pending)
2022	<b><u>Kanjanaboos, P.</u></b> & Kwanchai, P.	“กรรมวิธีการผลิตแผ่นฟิล์มบางเพอร์ฟอสโกลไทที่ลดการแยกกัน ของเฟสในวัสดุฟิล์ม” เลขที่คำขออนุสิทธิบัตร 2203001807	Petty Patent (pending)
2022	<b><u>Kanjanaboos, P.</u></b> , Srathongsian, L. & Kaewprajak, A.	“สารละลายสำหรับผลิตฟิล์มบางเพอร์ฟอสโกลไทสำหรับแสงความ เข้มต่ำ” เลขที่คำขออนุสิทธิบัตรการประดิษฐ์ 2201005208	Patent (pending)
2022	<b>Krajangsang, T et. al.</b>	“ชั้นฟิล์มเชื่อมต่อและห่อหุ้มสำหรับเซลล์แสงอาทิตย์แบบทับซ้อน” เลขที่คำขออนุสิทธิบัตรการประดิษฐ์ 2201006264	Patent (pending)
2022	<b>Krajangsang, T et. al.</b>	“เซลล์แสงอาทิตย์แบบทับซ้อนด้วยเทคนิคการถอดประกอบเซลล์ แบบคลิปปอน” เลขที่คำขออนุสิทธิบัตรการประดิษฐ์ 2201006265	Patent (pending)
2022	<b><u>Kanjanaboos, P.</u></b> , Sakkata, P. & Muangnapoh, K.	“พอลิเมอร์เสริมประสิทธิภาพด้วยเซลล์โลสสำหรับฟิล์มบาง ระบายความร้อนด้วยการแผ่รังสี” เลขที่คำขออนุสิทธิบัตร 2201006597	Patent (pending)
2022	<b><u>Kanjanaboos, P.</u></b> , Sakkata, P. & Muangnapoh, K	“กรรมวิธีการขึ้นรูปฟิล์มบางระบายความร้อนด้วยการแผ่รังสีด้วย การฉีดพ่น” เลขที่คำขออนุสิทธิบัตร 2201006598	Patent (pending)

2023	Ruankham, P., Makming, P., Wongratanaphisan, <b>Kanjanaboos, P.</b> & D., Homnan, S.,	“ชั้นส่งผ่านโพลีเมอร์สำหรับการเพิ่มความเสถียรเชิงอุณหภูมิของเซลล์แสงอาทิตย์ชนิดเพอรอฟสไกต์” เลขที่คำขอสิทธิบัตร 2303001036	Petty Patent (pending)
2023	Ruankham, P., Passatorntaschakorn, W., Wongratanaphisan, D. & <b>Kanjanaboos, P.</b>	“เซลล์แสงอาทิตย์ชนิดชนิดเพอรอฟสไกต์ที่มีการห่อหุ้มโดยใช้กระจกใสไฟฟ้าและขั้วไฟฟ้าคาร์บอน” เลขที่คำขอสิทธิบัตร 2303001037	Petty Patent (pending)

## PUBLICATIONS

Total citations	<b>7299</b>
h-index	<b>27</b>
i10-index	<b>39</b>

(As of June 25, 2023, google scholar)

**All international publications in the list are in both ISI and Scopus.**

**Number of publications as a first or corresponding author: 26**

**Number of publications: 72**

Year	Authors	Title	Journal	IF
2023	Penpong, K., Seriwatanachai, C., Naikaew, A., Phuphathanaphong, N., Shin Thant, K.K., Srathongsian, L., Sukwiboon, T., Inna, A., Sahasithiwat, S., Pakawatpanurut, P., Wongratanaphisan, D., Ruankham, P. & <b>Kanjanaboos, P.*</b>	Robust perovskite formation via vacuum thermal annealing for indoor perovskite solar cells	Scientific Reports	4.6 Top10%
2023	Naikaew, A., Krajangsang, T., Srathongsian, L., Seriwattanachai, C., Sakata, P., Burimart, S., Sanglee, K., Khotmungkhun, K., Ruankham, P., Romphosri, S., Limmanee, A., & <b>Kanjanaboos, P.*</b>	Photoexcitation of perovskite precursor solution to induce high-valent iodoplumbate species for wide bandgap perovskite solar cells with enhanced photocurrent	Scientific Reports	4.6 Top10%
2023	Makming, P., Homnan, S., Ngamjarurojana, A., Rimjaem, S., Gardchareon, A., Sagawa, T., Haruta, M., Pakawatpanurut, P., Wongratanaphisan, D., <b>Kanjanaboos, P.</b> , Intaniwet, A.* & Ruankham, P.*	Efficient and Stable Carbon-Based Perovskite Solar Cells Enabled by Mixed CuPc:CuSCN Hole Transporting Layer for Indoor Applications	ACS Applied Materials & Interfaces	9.5 Top10%
2023	Siripraparat, A., Mittanonsakul, P., Pansa-Ngat, P., Seriwattanachai, C., Kumnorkaew, P., Kaewprajak, A., <b>Kanjanaboos, P.</b> & Pakawatpanurut, P.*	All green sulfolane-based solvent enhanced electrical conductivity and rigidity of perovskite crystalline layer	Scientific Reports	4.6 Top10%
2023	Zin Tun, M., Pansa-Ngat, P., Ruankham, P., Shin Thant, K. K., Kamnoedmanee, S., Seriwattanachai, C., Rueangsawang, W., Supruangnet, R., Nakajima, H. & <b>Kanjanaboos, P.*</b>	Improving morphology and optoelectronic properties of ultra-wide bandgap perovskite via Cs tuning for clear solar cell and UV detection applications	Scientific Reports	4.6 Top10%
2023	Sanglee, K., Sakunkaewkasem, S., Piromjit, C., Nukunudompanich, M., <b>Kanjanaboos, P.</b> , Chuangchote, S., Suttiruengwong, S., Sahasithiwat, S., Limmanee, A. & Krajangsang, T.*	Intermediate matching layer for light-induced performance and removable clip-on applications of four-terminal perovskite/silicon heterojunction tandem solar cells	Solar Energy Materials and Solar Cells	6.9 Top10%

2023	Fereidooni, M., Núñez, O., Márquez, V., Paz, C.V., Salazar Villanueva, M., Zin Tun, M., <b>Kanjanaboos, P.</b> , Praserthdam, S., Praserthdam, P.*	Effect of substrate conductivity on charge transfer and CO <sub>2</sub> photoreduction in water vapor over silica-modified TiO <sub>2</sub> films	Applied Surface Science	6.7 Top25%
2023	Pansa-Ngat, P., Singh, K., Patel, B., Seriwattanachai, C., <b>Kanjanaboos, P.*</b> & Voznyy, O.*	Stereoelectronic Effect from B-Site Dopants Stabilizes Black Phase of CsPbI <sub>3</sub>	Chemistry of Materials	8.6 Top10%
2022	Shaikh, J.S., Rittirum, M., Saelee, T., Márquez, V., Shaikh, N.S., Santos, J.S., <b>Kanjanaboos, P.</b> , Nazeeruddin, M.K., Praserthdam, S.*, Praserthdam, P.	Ru tailored hydrous cobalt phosphate as a rational approach for high-performance alkaline oxygen evolution reaction	Materials Today Chemistry	7.3 Top10%
2022	Pathan, S. C., Shaikh, N. S., Mali, S. S., Patil, J. V., Katkar, P. K., Padalkar, N. S., Praserthdam, S., Hong, C. K., <b>Kanjanaboos, P.*</b> , & Shaikh, J. S.*	Unlocking the potential of La-doped iron oxide @graphene oxide and ionic liquid-based asymmetric supercapacitor	Journal of Energy Storage	9.4 Top10%
2022	Tuchinda, W, Amratisha, K., Naikaew, A., Pansa-Ngat, P., Srathongsian, L., Wattanathana, W., Thant, K. K., Supruangnet, R., Nakajima, H., Ruankham, P., & <b>Kanjanaboos, P.*</b>	Planar Heterojunction Perovskite Solar Cell with Graded Energy Band Architecture via Fast-Drying Spray Deposition	Solar energy	6.7 Q1
2022	Amratisha, K., Tuchinda, W., Ruankham, P., Naikaew, A., Pansa-Ngat, P., Srathongsian, L., Wattanathana, W., Shin Thant, K. K., Supruangnet, R., Nakajima, H., Sahasithiwat, S., & <b>Kanjanaboos, P.*</b>	Graded multilayer triple cation perovskites for high speed and detectivity self-powered photodetector via scalable spray coating process	Scientific Reports	4.6 Top10%
2022	Shaikh, N. S., Padalkar, N. S., Lokhande, V. C., Ji, T.*, Patil, S. P., Sabale, S. R., Shaikh, H. M., Shaikh, J. S., Praserthdam, S., & <b>Kanjanaboos P.*</b>	Graphene-Based Aqueous Magnesium Ion Hybrid Supercapacitors with an Appealing Energy Density Advanced by a KI Additive	Energy & Fuels	5.3 Q1
2022	Shaikh, N. S., Lokhande, V. C., Ji, T.*, Ubale, S., Mane, V. J., Lokhande, C.D., Shaikh, H. M., Shaikh, J. S., Praserthdam, S., Sabale, S., & <b>Kanjanaboos, P.*</b>	Rational La-doped hematite as an anode and hydrous cobalt phosphate as a battery-type electrode for a hybrid supercapacitor	Dalton Transactions	4.0 Q1
2022	Shaikh, N.S., Mali, S.S., Patil, J. V., Mujawar, A. I., Shaikh, J.S.*, Pathan, S. C., Praserthdam, S., Hong, C. K., & <b>Kanjanaboos, P.*</b>	Mg <sup>2+</sup> ion-powered hybrid supercapacitor with β-MnO <sub>2</sub> as a cathode and α-Fe <sub>2</sub> O <sub>3</sub> as an anode	Journal of Energy Storage	9.4 Top10%
2022	Shaikh, N.S., Lokhande, V.C., Pansa-Ngat, P., Ubale, S., Shaikh, J.S., Praserthdam, S., Sabale, S.R., Lokhande, C.D.,* Ji, T., & <b>Kanjanaboos, P.*</b>	Sulfur-Doped Graphene as a Rational Anode for an Ionic Liquid Based Hybrid Capacitor with a 3.5 V Working Window	Energy & Fuels	5.3 Q1
2022	Naikaew, A., Kumnorkaew, P., Wattanathana, W., Swe, K.Z., Pansa-Ngat, P., Amratisha, K., Nakajima, H., Supruangnet, R., Krajangsang, T.,	Investigation of Double-Layered Pb-Sn Perovskite Absorbers: Formation, Structure, Band Alignment, and Stability	Journal of Physical Chemistry C	3.7 Q1

	Sinthiptharakoon, K., Sahasithiwat, S., & <b><u>Kanjanaboos, P.*</u></b> ***cover feature of the journal***			
2022	Pipattanaporn, P., Pansiri, P., Kumpeerakij, P., Yaemphutchong, S., Siri-apai, P., Suetrong, N., Chansaenpak, K., Singkammo, S., <b><u>Kanjanaboos, P.</u></b> , Hanlumyuang, Y., Wannapaiboon, S.*, & Wattanathana, W.*	Effect of triethanolamine chelating agent on crystallinities, phase purities, and optical properties of zinc aluminate spinel synthesized by thermal decomposition	Ceramics International	5.2 Q1
2022	Shaikh, N.S., Ubale, S.B., Mane, V.J., Shaikh, J.S., Lokhande, V.C., Praserthdam, S., Lokhande, C.D.*, & <b><u>Kanjanaboos, P.*</u></b>	Novel electrodes for supercapacitor: Conducting polymers, metal oxides, chalcogenides, carbides, nitrides, MXenes, and their composites with graphene	Journal of Alloys and Compounds	6.2 Top10%
2022	Ruankham, P.*, Khambunkoed, N., <b><u>Kanjanaboos, P.</u></b> , Wongratanaphisan, D., & Sagawa, T.	Improved reproducibility of carbon-based cesium/formamidinium perovskite solar cells via double antisolvent drippings in adduct approach	Organic Electronics	3.2 Q1
2022	Srisawad, K., <b><u>Kanjanaboos, P.</u></b> , Wilairat, P., Sahasithiwat, S., & Pakawatpanurut, P.*	Enhanced electroluminescence of cesium lead bromide light-emitting diode driven by ion migration via surface passivation with organic halide surfactants	Surfaces and Interfaces	6.2 Q1
2022	Yaemphutchong, S., Wattanathana, W., Chansaenpak, K., Singkammo, S., <b><u>Kanjanaboos, P.</u></b> , Siri-apai, P., Janejobsakonkit, S., Pipattanaporn, P., Suetrong, N., Wannapaiboon, S.*, & Hanlumyuang, Y.*	Structural investigation and optical properties of cobalt aluminate pigments derived from thermal decomposition of mixed-metal nitrate co-crystals	Ceramics International	5.2 Q1
2021	Shaikh, N.S., <b><u>Kanjanaboos, P.</u></b> , Lokhande, V.C., Praserthdam, S., Lokhande, C.D., & Shaikh, J.S.*	Engineering of Battery Type Electrodes for High Performance Lithium Ion Hybrid Supercapacitors	ChemElectroChem	4.78 Q1
2021	Homnan, S., Malison, P., Amratisha, K., <b><u>Kanjanaboos, P.</u></b> , Wongratanaphisan, D., Sagawa, T., & Ruankham, P.*	Low-temperature processable Sn-doped ZnO films as electron transporting layers for perovskite solar cells	Journal of Materials Science: Materials in Electronics	2.78 Q2
2021	Deeloed, W., Hanlumyuang, Y., Limphirat, W., Suramitr, S., Chansaenpak, K., <b><u>Kanjanaboos, P.</u></b> , Wannapaiboon, S.*, & Wattanathana, W.*	Oxidative thermal conversion of hydrothermal derived precursors toward the mixed-metal cobaltite spinel oxides (ZnCO <sub>2</sub> O <sub>4</sub> and NiCO <sub>2</sub> O <sub>4</sub> ): In-situ investigation by synchrotron-radiation xrd and xas techniques	Crystals	2.69 Q2
2021	Shaikh, N.S., Lokhande, V.C., Praserthdam, S., Lokhande, C.D., Ezema, F.I., Salunkhe, D.J., Shaikh, J.S.*, & <b><u>Kanjanaboos, P.*</u></b>	Recent Advancements in Energy Storage Based on Sodium Ion and Zinc Ion Hybrid Supercapacitors	Energy & Fuels	4.65 Q1

2021	Pansa-Ngat, P., Nakajima, H., Supruangnet, R., Suwanna, S., Pakawatpanurut, P., Sahasithiwat, S., & <b><u>Kanjanaboos, P.*</u></b> ***cover feature of the journal***	Phase evolution in lead-free Cs-doped FASnI <sub>3</sub> hybrid perovskites and optical properties	Journal of Physical Chemistry C	4.18 Q1
2021	Shaikh, J. S.*, Shaikh, N. S., Mishra, Y. K., Pawar, S. S., Parveen, N., Shewale, P. M., Sabale, S., <b><u>Kanjanaboos, P.</u></b> , Paserthdam, S. & Lokhande, C. D.*	The implementation of graphene-based aerogel in the field of supercapacitor	Nanotechnology	3.95 Q1
2021	Shaikh, J. S.*, Shaikh, N. S., Sabale, S., Parveen, N., Patil, P. S., Mishra, Y.K., <b><u>Kanjanaboos, P.</u></b> , Paserthdam, S. & Lokhande, C. D.*	A phosphorus integrated strategy for supercapacitor: 2D black phosphorus-doped and phosphorus-doped materials	Materials Today Chemistry	7.61 Top10%
2021	Wattanathana, W.*, Suetrong, N., Kongsamai, P., Chansaenpak, K., Chuanopparat, N., Hanlumyung, Y., <b><u>Kanjanaboos, P.</u></b> , & Wannapaiboon, S.*	Crystallographic and spectroscopic investigations on oxidative coordination in the heteroleptic mononuclear complex of cerium and benzoxazine dimer	Molecules	4.93 Q1
2021	Suetrong, N., Chansaenpak, K., Impeng, S., Pinyou, P., Blay, V., Blay-Roger, R., Lisnund, S., <b><u>Kanjanaboos, P.</u></b> , Hanlumyung, Y., Wannapaiboon, S.* & Wattanathana, W.*	Influences of chemical functionalities on crystal structures and electrochemical properties of dihydro-benzoxazine dimer derivatives	Crystals	2.69 Q2
2021	Wattanathana W*, Hanlumyung, Y., Wannapaiboon, S., Kantapat, C., Pinyou, P., Nanok, T. & <b><u>Kanjanaboos, P.</u></b>	Novel Dihydro-1,3,2H-benzoxazine Derived from Furfurylamine: Crystal Structure, Hirshfeld Surface Analysis, Photophysical Property, and Computational Study	Crystals	2.69 Q2
2021	Akarapitch, S., Jitprabhat, P., <b><u>Kanjanaboos, P.</u></b> & Pakawatpanurut, P.*	Efficiency enhancement of perovskite solar cells by using Ag- or Ag-Cu composite-doped surface passivation of the electron transport layer	Applied Surface Science	7.39 Top10%
2021	Ponchai, P., Srathongsian, L., Amratisha, K., Boonthum, C., Sahasithiwat, S., Ruankham, P., & <b><u>Kanjanaboos, P.*</u></b>	Modified colored semi-transparent perovskite solar cells with enhanced stability	Journal of Alloys and Compounds	6.37 Top10%
2021	Shaikh, J. S.*, Shaikh, N. S., Mishra, Y. K., <b><u>Kanjanaboos P.</u></b> , Shewale P. M., Sabale S., Praserthdam, S., & Lokhande, C.D.*	Low-cost Cu-based inorganic hole transporting materials in perovskite solar cells: Recent progress and state-of-art developments	Materials Today Chemistry	7.61 Top10%
2020	Amratisha, K., Ponchai, P., Kaewurai, P., Pansa-Ngat, P., Pinsuwan, K., Kumnorkaew, P., Ruankham, P., & <b><u>Kanjanaboos, P.*</u></b> ***featured press release article & many news reports around the world***	Layer-by-layer spray coating of stacked perovskite absorber for perovskite solar cell with better performance and stability under humid environment	Optical Materials Express	3.44 Q1

2020	Swe, K. Z., Naikaew, A, Kaewurai, P., Pansa-Ngat, P., Sahasithiwat, S., Kangkaew, L., Rugmai, S., Soontaronon, S., & <b><u>Kanjanaboos, P.*</u></b> *featured as top download paper for April 2020*	Layered perovskite with compact morphology and reduced grain size via vacuum assisted crystallization for luminescence applications	Optical Materials Express	3.44 Q1
2019	Pinsuwan, K., Boonthum, C., Supasai, T., Sahasithiwat, S., Kumnorkaew, P. & <b><u>Kanjanaboos, P.*</u></b>	Solar perovskite thin films with enhanced mechanical, thermal, UV, and moisture stability via vacuum-assisted deposition	Journal of Materials Science	4.22 Top10%
2019	Naikaew, A., Kumnorkaew, P., Supasai, T., Suwanna, S., Hunkao, R., Srihirin, T., & <b><u>Kanjanaboos, P.*</u></b> ***cover feature of the journal***	Enhancing High Humidity Stability of Quasi-2D Perovskite Thin Films through Mixed Cation Doping and Solvent Engineering	ChemNanoMat	3.38 Top10%
2019	Shaikh, J. S., Shaikh, N. S., Mali, S. S., Patil J. V., Beknalka S. A., Akhilesh, P. P., Tarwal, N. L., <b><u>Kanjanaboos P.</u></b> , Hong, C. K., Kim. J. H. & Patil, P. S.*	Quantum dot based solar cells: Role of nanoarchitectures, perovskite quantum dots and charge transporting layers	ChemSusChem	7.96 Top10%
2019	Ponchai, J., Kaewurai, P., Boonthum, C., Pinsuwan, K., Supasai, T., Sahasithiwat, S. & <b><u>Kanjanaboos, P.*</u></b>	Modifying morphology and defects of low-dimensional, semi-transparent perovskite thin films via solvent type	RSC Advances	3.05 Q1
2019	Kaewurai, P., Ponchai, J., Amratisha, K., Naikaew, A., Swe, KZ., Pinsuwan, K., Boonthum, C., Sahasithiwat, S. & <b><u>Kanjanaboos, P.*</u></b>	Enhancing violet photoluminescence of 2D perovskite thin films via swift cation doping and grain size reduction	Applied Physics Express	3.09 Q1
2018	Boonthum, C., Pinsuwan, K., Ponchai, J., Srihirin, T., & <b><u>Kanjanaboos, P.*</u></b>	Reconditioning perovskite films in vapor environments through repeated cation doping	Applied Physics Express	2.83 Q1
2018	Shaikh, J. S., Shaikh, N. S., Kharade, R., Beknalkar, S. A., Patil, J. V., Suryawanshi, M. P., <b><u>Kanjanaboos P.</u></b> , Hong, C. K. & Patil, P. S.*	Symmetric supercapacitor: Sulphurized graphene and ionic liquid	Journal of Colloid and Interface Science	6.62 Top10%
2018	Shaikh, J. S., Shaikh, N. S., Sheikh, A.D., Mali, S. S., Patil J. V., Pawar, K. K., <b><u>Kanjanaboos P.</u></b> , Hong, C. K., Kim. J. H. & Patil, P. S.*	Nanoarchitectures in dye-sensitized solar cells: metal oxides, oxide perovskites and carbon-based materials	Nanoscale	6.97 Top10%
2017	Shaikh, J. S., Shaikh, N. S., Sheikh, A.D., Mali, S. S., Kale, A. J., <b><u>Kanjanaboos P.</u></b> , Hong, C. K., Kim. J. H. & Patil, P. S.*	Perovskite solar cells: In pursuit of efficiency and stability	Materials & Design	5.10 Top10%

2017	Griesemer, S., You, S., <b>Kanjanaboos, P.</b> , Calabro, M., Jaeger, H. M., Rice, S. A., & Lin B.*	The role of ligands in the mechanical properties of Langmuir nanoparticle films	Soft Matter	3.83 Q1
2016	Yassitepe E, Yang Z., Voznyy O., Kim Y., Walters G., Castañeda J. A., <b>Kanjanaboos P.</b> , Yuan M., Gong X., Fan F., Pan J., Hoogland S, Comin R, Bakr O. M., Padilha L. A., Nogueira A. F. & Sargent E. H.*	Amine-Free Synthesis of Cesium Lead Halide Perovskite Quantum Dots for Efficient Light-Emitting Diodes	Advanced Functional Materials	12.12 Top10%
2016	Jang, Y., Rani, A., Quan, L., Adinolfi, V., <b>Kanjanaboos, P.</b> , Ouellette, O., Son, T., Jang, Y., Chung, K., Kwon, H., Kim, D., Kim, D. H.* & Sargent E. H.*	Graphene Oxide Shells on Plasmonic Nanostructures Lead to High-Performance Photovoltaics: A Model Study Based on Dye-Sensitized Solar Cells	ACS Energy	12.27 Top10%
2016	Yuan, M., Quan, L., Comin, R., Walters, G., Sabatini, R., Voznyy, O., Hoogland, S., Zhao, Y., Beauregard, E., <b>Kanjanaboos, P.</b> , Lu, Z., Kim, D. H., & Sargent, E. H.*	Perovskite energy funnels for efficient light-emitting diodes	Nature Nanotechnology	38.99 Top1%
2016	Wang, R., Shang, Y., <b>Kanjanaboos, P.</b> , Wenjia Z., Ning Z., & Sargent, E.H.*	Colloidal Quantum Dot Ligand Engineering for High Performance Solar Cells	Energy & Environmental Science	29.52 Top1%
2016	Adinolfi, V., Yuan, M., Comin, R., Thibau, E., Shi, D., Saidaminov, M., <b>Kanjanaboos, P.</b> , Kopilovic, D., Hoogland, S., Lu, Z-H., Bakr, O., & Sargent, E. H.*	The In-Gap Electronic State Spectrum of Methylammonium Lead Iodide Single-Crystal Perovskites	Advanced Materials	19.79 Top1%
2016	Lan, X., Voznyy, O., Kiani, A., García de Arquer, F., Abbas, A., Kim, G-H., Liu, M., Yang, Z., Walters, G., Xu, J., Yuan, M., Ning, Z., Fan, F., <b>Kanjanaboos, P.</b> , Kramer, I., Zhitomirsky, D., Lee, P., Perelgut, A., Hoogland, S., & Sargent E. H.*	Passivation using Molecular Halides Increases Quantum Dot Solar Cell Performance. (2015 World-record certified CQD solar cells)	Advanced Materials	19.79 Top1%
2016	Xu, J., Voznyy, O., Comin, R., Gong, X., Walters, G., Liu, M., <b>Kanjanaboos, P.</b> , Lan, X., Sargent, E.H.*	Crosslinked Remote-Doped Hole-Extracting Contacts Enhance Stability under Accelerated Lifetime Testing in Perovskite Solar Cells.	Advanced Materials	19.79 Top1%
2015	Jiang, Z., He, J., Deshmukh S. A., <b>Kanjanaboos, P.</b> , Kamath G., Wang, Y., Sankaranarayanan, S., Wang, J., Jaeger, H. M. & Lin, X.-M.*	Subnanometre Ligand-shell Asymmetry Leads to Janus-like Nanoparticle Membranes.	Nature Materials	39.74 Top1%
2015	Fan, F., <b>Kanjanaboos, P(co-first author).</b> , Saravanapavanantham, M., Beauregard, E., Ingram, G., Yassitepe, E., Adachi, M., Voznyy, O., Johnston, A., Walters, G., Kim, G-H., Lu, Z-H., Sargent, E. H.*	Colloidal CdSe <sub>1-x</sub> S <sub>x</sub> Nanoplatelets with Narrow and Continuously-Tunable Electroluminescence. (2015 record purest green emission of any LED technology)	Nano Letters	12.71 Top10%

2015	Adachi, M., Fan, F., Sellan, D., Hoogland, S., Voznyy, O., Houtepen, A., Parrosh, K., <b><u>Kanjanaboos, P.</u></b> , Malen, J., & Sargent, E. H.*	Microsecond-Sustained Lasing from Colloidal Quantum Dot Solids.	Nature Communications	12.12 Top10%
2015	Kim, G-H., Arquer, P., Yoon, Y. J., Lan, X., Liu, M., Voznyy, O., Yang, Z., Fan, F., Ip, A. H., <b><u>Kanjanaboos, P.</u></b> , Hoogland, S., Kim, S. Y. & Sargent, E. H.*	High Efficiency Colloidal Quantum Dot Photovoltaics via Robust Self-Assembled Monolayers.	Nano Letters	12.71 Top10%
2015	Kim, Y., Yassitepe, E., Voznyy, O., Comin, R., Walters, G., Gong, X., <b><u>Kanjanaboos, P.</u></b> , Nogueira, A., & Sargent E. H.*	Efficient Luminescence from Perovskite Quantum Dot Solids	ACS Applied Materials & Interface	7.50 Top10%
2015	Xu, J., Buin, A., Ip A. H., Voznyy, O., Li, W., Comin, R., Yuan, M., Seokmin, J., Ning, Z., McDowell, J., <b><u>Kanjanaboos, P.</u></b> , Sun, J-P., Lan, X., Quan, L., Kim, D. H., Hill, I., Maksymovych, P. & Sargent, E. H.*	Perovskite–fullerene Hybrid Materials Suppress Hysteresis in Planar Diodes.	Nature Communications	12.12 Top10%
2015	Wang, Y., <b><u>Kanjanaboos, P.</u></b> , McBride. S., Barry E., Lin, X.-M. & Jaeger, H. M.*	Mechanical Properties of Self-Assembled Nanoparticle Membranes: Bending and Stretching.	Faraday Discussions	3.59 Top10%
2015	Sutherland, B., Johnston, A., Ip, A., Xu, J., Adinolfi, V., <b><u>Kanjanaboos, P.</u></b> & Sargent, E. H.*	Sensitive, fast, and stable perovskite photodetectors exploiting interface engineering (ACS Editors' Choice Award).	ACS Photonics	6.76 Top10%
2014	Wang, Y., <b><u>Kanjanaboos, P.</u></b> , Barry E., McBride. S., Lin, X.-M. & Jaeger, H. M.*	Fracture and Failure of Nanoparticle Monolayers and Multilayers.	Nano Letters	12.12 Top10%
2014	Carey, G. H., Kramer, I. J., <b><u>Kanjanaboos, P.</u></b> , Moreno-Bautista, G., Voznyy, O., Rollny, L., Tang, J. A., Hoogland, S., & Sargent, E. H.*	Electronically Active Impurities in Colloidal Quantum Dot Solids.	ACS Nano	13.94 Top10%
2014	Yuan, M., Voznyy, O., Zhitomirsky, D., <b><u>Kanjanaboos, P.</u></b> & Sargent, E. H.*	Synergistic Doping of Fullerene Electron Transport Layer and Colloidal Quantum Dot Solids Enhances Solar Cell Performance.	Advanced Materials	19.79 Top1%
2014	Sutherland, B. R., Hoogland, S., Adachi, M. M., <b><u>Kanjanaboos, P.</u></b> , Wong, C. T. O., McDowell, J. J., Xu, J., Voznyy, O., Houtepen, A. J. & Sargent, E. H.*	Perovskite Thin Films via Atomic Layer Deposition.	Advanced Materials	19.79 Top1%
2014	Kramer, I. J., Minor, J. C., Moreno-Bautista, G., Rollny, L., <b><u>Kanjanaboos, P.</u></b> , Kopilovic, D., Thon S. M., Carey, G. H., Chou, K., Zhitomirsky, D., Amassian, A., & Sargent E. H.*	Efficient Spray-Coated Colloidal Quantum Dot Solar Cells.	Advanced Materials	19.79 Top1%
2013	<b><u>Kanjanaboos, P.</u></b> , Lin, X.-M., Sader, J. E., Rupich S., Jaeger, H. M. & Guest, J. R.*	Self-Assembled Nanoparticle Drumhead Resonators.	Nano Letters	12.71 Top10%
2013	<b><u>Kanjanaboos, P.*</u></b>	Self-assembly and Nanomechanics of Freestanding Nanoparticle Thin Films.	UMI Dissertations Publishing	N/A

2013	You, S., Rashkov, R., <b>Kanjanaboos, P.</b> , Calderon, I., Meron, M., Jaeger, H. & Lin, B.*	Comparison of the Mechanical Properties of Self-Assembled Langmuir Monolayers of Nanoparticles and Phospholipids.	Langmuir	3.83 Top10%
2011	<b>Kanjanaboos, P.</b> , Joshi-Imre, A., Lin, X.-M. & Jaeger, H. M.*	Strain Patterning and Direct Measurement of Poisson's Ratio in Nanoparticle Monolayer Sheets.	Nano Letters	12.71 Top10%
2010	He, J., <b>Kanjanaboos, P.</b> , Lin, X.-M. & Jaeger, H. M.*	Fabrication and Mechanical Properties of Large-Scale Freestanding Nanoparticle Membranes.	Small	8.32 Top10%
2010	Wu, J., Gangopadhyay, A. K., <b>Kanjanaboos, P.</b> & Solin, S. A.*	Magnetic Properties of S= 1/2 Quasi-triangular Lattice Materials: $Cu_{2(1-x)}Zn_{2x}(OH)_3NO_3/(C_7H_{15}COO) \cdot mH_2O$ .	JOP: Condensed Matter	2.65 Q1

### MAJOR AWARDS/GRANTS

- Mahidol University Top1% Researcher 2023 (Award ceremony on 12 April 2023)
- Mahidol University Researcher of the Year 2023 (Rising Researcher in Science and Technology, Award ceremony on 2 March 2023)
- Outstanding Young Materials Researcher Award 2022 from Materials Research Society Thailand (Announcement on 15 February 2023, Award ceremony on 1 March 2023)
- Exemplary Teacher Award 2022 from Faculty of Science, Mahidol University (รางวัลอาจารย์ตัวอย่าง ประจำปี 2565 ระดับรองศาสตราจารย์และศาสตราจารย์ คณะวิทยาศาสตร์ ม.มหิดล, 28 ก.ย. 2022)
- Research Publication Award 2022 from National Research Council of Thailand (NRCT) (รางวัลการวิจัยแห่งชาติ: รางวัลผลงานวิจัย ระดับดีมาก จากสำนักงานการวิจัยแห่งชาติ, 2 ก.พ. 2022)
- Earning the certificate from the president of Mahidol University for turning research into intellectual properties (Mahidol University, 2022)
- Becoming the youngest researcher who won the prestigious "Genius-Level Mid-Career Researcher Grant" in 2021 from National Research Council of Thailand (2021)
- Winning the prestigious supporting grant from Thailand Toray Science Foundation (2021)
- Earning the certificate from the president of Mahidol University for turning research into intellectual properties (Mahidol University, 2021)
- Listed as Mahidol University's highest cited researcher in the field of Materials Science (Mahidol University, 2020)
- Dissertation Award from National Research Council of Thailand (NRCT, 2018)
- 2016 representative of Thailand to attend the Lindau Physics Nobel Prize conference where Nobel laureates coach young scientists from around the world (2016)
- Argonne National Laboratory Center for Nanoscale Materials Invited Student Talk Award (2012, awarded to one student in graduate science and engineering programs)
- Israelow Research Award (2007)
- Greg Delos Summer Fellowship (2006, one physics major at Washington University each year)
- One of 8 national representatives of Thailand to Asian Physics Olympiad in 2003
- Royal Thai Scholarship in Physics (DPST)

### ORAL PRESENTATIONS

- **Kanjanaboos, P.** Thin Films for Multiplex Applications: Solar Cell, Light Emitting Diode, Photodetector, and Radiative Cooling Film, IEEE Magnetic Society- Thailand Chapter, Online, 29 March 2023 (Invited Talk).
- **Kanjanaboos, P.** Thin Films for Multiplex Applications: Solar Cell, Light Emitting Diode, Photodetector, and Radiative Cooling Film, Advances in Photonics Research and Simulation by CADFEM, The Westin Grande, Bangkok, Thailand, 24 March 2023 (Invited Talk).
- **Kanjanaboos, P.** Thin Films for Multiplex Applications: Solar Cell, Light Emitting Diode, Photodetector, and Radiative Cooling Film, the 4th Materials Research Society of Thailand International Conference (MRS-Thailand 2023), Sunee Grand Hotel & Convention Center, Ubon Ratchathani, Thailand, 2 March 2023 (Keynote Talk).

- Kanjanaboos, P. Thin Films for Energy Applications: Perovskite Solar Cells and Radiative Cooling Films, Nanospace Materials (ICNM2022), Nongnooch Garden, Pattaya, Thailand, 12 December 2022 (Rising Star Talk).
- Kanjanaboos, P. Thin Films for Energy Applications: Perovskite Solar Cells and Radiative Cooling Films, National Institute for Interdisciplinary Science and Technology, Kerala, India, 6 December 2022 (Invited talk).
- Kanjanaboos, P. Tailoring Perovskite Processes and Compositions for Optoelectronic Applications, NanoScientific Symposium Asia 2022, Marina Bay Sands, Singapore, 25 November 2022 (Invited talk).
- Kanjanaboos, P. Thin Films for Energy Applications: Perovskite Solar Cells and Radiative Cooling Films, AFEO Education & Capacity Building Webinar, online talk series, National University of Singapore, Singapore, 1 April 2022 (Invited talk).
- Kanjanaboos, P. Thin Films for Energy Applications: Perovskite Solar Cells and Radiative Cooling Films, Department of Physics, Kasetsart University, Thailand, 10 February 2022 (Invited talk).
- Kanjanaboos, P. Thin Films for Energy Applications: Perovskite Solar Cells and Radiative Cooling Films, The Joint International Conference on Applied Physics and Materials Applications & Applied Magnetism and Ferroelectrics (ICAPMA-JMAG-2021), Nongnooch Garden, Pattaya, Thailand, 3 December 2021 (Keynote talk).
- Kanjanaboos, P. Novel perovskite processes for solar cells and LEDs, Siam Physics Congress (Online), Thailand, 25 May 2021 (Keynote talk).
- Kanjanaboos, P. Solvent Engineering Techniques for Perovskite Optoelectronics, Department of Chemical Engineering, Chulalongkorn University, Thailand, 13 February 2021 (Invited talk).
- Kanjanaboos, P. Solvent Engineering Techniques for Perovskite Optoelectronics, Department of Physics and Materials Science, Chiang Mai university, Thailand, 23 December 2020 (Invited talk).
- Kanjanaboos, P. Solvent Engineering Techniques for Perovskite Optoelectronics, Fifth International Conference on Advances in Materials Science (Online), India, 6 June 2020 (Invited talk).
- Kanjanaboos, P. Thin Films for Energy Applications: Solar Cell, LED, and Radiative Cooling Film, Special MSE Seminar, VISTEC, Thailand, 27 February 2020 (Invited talk).
- Kanjanaboos, P. Solvent Engineering Techniques for Perovskite Electronics MRS Thailand 2019, The Zign Hotel, Pattaya, Thailand, 10 July 2019 (Invited talk).
- Kanjanaboos, P. Solar Cells and LEDs from Perovskite Inks, DPSTcon 2019, Ambassador Hotel, Thailand, 22 June 2019 (Invited talk).
- Kanjanaboos, P. Solvent Engineering Techniques for Perovskite Electronics, NanoTalk#10, NANOTEC, Thailand, 21 June 2019 (Invited talk).
- Kanjanaboos, P. Enhancing Perovskite Materials and Processes for Optoelectronic Applications Perovskite Solar Cells-Towards Commercialization, Queen Sirikit National Convention Center, Bangkok, Thailand, 9 October 2018 (Invited talk).
- Kanjanaboos, P. Perovskite Solar Cell Research at Mahidol University Perovskite Solar Cells: Potential and Direction for Thailand, Sukosol Hotel, Bangkok, Thailand, 21 January 2018 (Invited talk).
- Kanjanaboos, P. Solution-Processable Materials for Sensing and Optoelectronics, ASEAN WORKSHOP and SYMPOSIUM on Material Concepts for Solar Energy Conversion and Energy Storage, Department of Materials Science, Faculty of Science, Kasetsart University, 26 August 2016 (Invited talk).
- Kanjanaboos, P., Lin, X.-M., Jaeger, H. M. & Guest, J. R. Measurement of Resonant Frequencies and Modes of Free-Standing Nanoparticle Monolayers, Advanced Photon Source User Meeting 2012, Chicago, IL, USA.
- Kanjanaboos, P., Lin, X.-M., Jaeger, H. M. & Guest, J. R. Measurement of Resonant Frequencies and Modes of Freestanding Nanoparticle Monolayers, American Physical Society March Meeting 2012, Boston, MA, USA.
- Kanjanaboos, P., Joshi-Imre, A., Lin, X.-M. & Jaeger, H. M. Strain Patterning and Direct Measurement of Poisson's Ratio in Nanoparticle Monolayer Sheets, 48th Annual Technical Conference of Society of Engineering Sciences 2011, Chicago, IL, USA.
- Kanjanaboos, P., Joshi-Imre, A., Lin, X.-M. & Jaeger, H. M. Fine Tuning Nanoparticle Spacing in Freestanding Membranes through Ion and Electron Beams, American Physical Society March Meeting 2011, Dallas, TX, USA.
- Kanjanaboos, P., Joshi-Imre, A., Lin, X.-M., Guest, J. R. & Jaeger, H. M. How to Play with Nanoparticle Chain Mail: Cut, Shake, and Roll, Upper Midwest MRSEC Student Symposium 2010, Minneapolis, MN, USA.

### **COMMUNITY SERVICES AND LEADERSHIP**

**Physics with a Bang**, University of Chicago

*December 2009 – August 2013*

- Demonstrated exciting scientific experiments to more than 200 local students (age 3 -18).
- Guided laboratory tours and explained cutting edge research at the university to more than 100 visitors.

**Thai Student Association**, Washington University in Saint Louis

*May 2006 - May 2008*

- Founded and served as the first president of Thai Student Association (membership grew to 30 students, activities attracted 200+ participants).
- Served as a committee member of the student government to deal with various student issues.

## **OTHERS**

**Fluent Languages:** Thai and English.

**Computer Skills:** MatLab, Comsol, OriginLab, VBA, GAMS, ImageJ, and Microsoft Office Suite.