



CURRICULUM VITAE

Name: Dr. Songkran Wiriyasart

Department Laboratory

Thermo-Fluids and Heat Transfer Enhancement Lab. (TFHT), Department of Mechanical Engineering, Faculty of Engineering, Srinakharinwirot University, 63 Rangsit-Nakhornnayok Rd., Ongkharak, Nakhorn-Nayok, 26120, THAILAND

Educational Backgrounds

2006	Bachelor of Engineering (Mechanical Engineering, B.Eng.) Srinakharinwirot University
2008	Master of Engineering (Mechanical Engineering, M.Eng.) Srinakharinwirot University
2016	Doctor of Philosophy (Mechanical Engineering, Ph.D.) Srinakharinwirot University

Subjects Taught

- Heat Transfer Enhancement
- Finite Element Method
- Numerical Analysis
- Electronics Cooling
- EV Battery Cooling Technologies

Employment Background

2008-2014 Mechanical Engineer (Design Engineer) Thermal Solutions Engineering. Fujikura Electronics (Thailand) Ltd.

2016-present Lecturer in Mechanical Engineering department, Faculty of Engineering, Srinakharinwirot University.

Publications

National Conference Proceedings

1. **Songkran Wiriyasart**, Paisarn Naphon, Pichai Assadamongkol, Liquid Cooling in the Mini Pin Fin Heat Sink with and without Thermoelectric for CPU of PC, Proceedings the 4th conference on Energy Network of Thailand; ENETT, 14-16 May 2008, Nakhon Pathom
2. **Songkran Wiriyasart**, Paisarn Naphon, 2017, Study on Liquid Jet Impingement Heat Transfer and Flow Behaviors of the Vapor Chambers with and without Mini-channel, The 31st Conference of Mechanical Engineering Network of Thailand, 4-7 July 2017, Nakhonnayok
3. **Songkran Wiriyasart**, Paisarn Naphon, 2017, Thermal Cooling of Electronic Devices with Cold Plate Using Liquid as Coolant, The 31st Conference of Mechanical Engineering Network of Thailand, 4-7 July 2017, Nakhonnayok

International Conference Proceedings

1. **Songkran Wiriyasart**; & Paisarn Naphon. (2013). Study on the Heat Transfer Characteristic of the Vapor Chamber without Micro-channel for Cooling Electronic Component. In *ISEEE 3rd International Symposium on Engineering, Energy and Environments*.

National Journals

1. Tanayos Arisariyawong, **Songkran Wiriyasart**, Paisarn Naphon, Artificial Neural Network Analysis of the Thermal Performance of a Plate Heat Exchanger, SWU Engineering Journal (2019) 14(1), 1-11
2. Chootichai Hommalee, **Songkran Wiriyasart**, Paisarn Naphon, Study on Heat and Flow Behaviors in Heat Sinks for Thermoelectric Cooling Module by CFD, SWU Engineering Journal (2019) 14(2), 48-60

International Journals

- 1 P. Naphon, **S. Wiriyasart**, Liquid cooling in the mini-rectangular fin heat sink with and without thermoelectric for CPU, International Communications in Heat and Mass Transfer, 36 (2009) 166-171.
- 2 P. Naphon, **S. Wiriyasart**, Study on the vapor chamber with refrigerant R-141b as working fluid for HDD cooling, International Communications in Heat and Mass Transfer, 39 (2012) 1449-1452.
- 3 P. Naphon, S. Wongwises, **S. Wiriyasart**, On the thermal cooling of central processing unit of the PCs with vapor chamber, International Communications in Heat and Mass Transfer, 39 (2012) 1165-1168.
- 4 **S. Wiriyasart**, P. Naphon, Study on the Heat Transfer Characteristics of a Vapor Chamber without Micro-channel for Cooling an Electronic Component, Thammasat International Journal of Science and Technology, 8 (2013) 16-22.
- 5 P. Naphon, S. Wongwises, **S. Wiriyasart**, Application of two-phase vapor chamber technique for hard disk drive cooling of PCs, International Communications in Heat and Mass Transfer, 40 (2013) 32-35.
- 6 P. Naphon, **S. Wiriyasart**, Effect of sintering columns on the heat transfer and flow characteristics of the liquid cooling vapor chambers, Heat and Mass Transfer, 52 (2015) 1807-1820.
- 7 P. Naphon, **S. Wiriyasart**, On the Thermal Performance of the Vapor Chamber with Micro-channel for Unmixed Air Flow Cooling, Engineering Journal, 19 (2015) 125-137.

- 8 P. Naphon, **S. Wiriyasart**, S. Wongwiset, Thermal cooling enhancement techniques for electronic components, *International Communications in Heat and Mass Transfer*, 61 (2015) 140-145.
- 9 **S. Wiriyasart**, P. Naphon, Effect of heat source area on the thermal resistance of the wick columns vapor chambers, *Journal of Mechanical Science and Technology*, 30 (2016) 933-942.
- 10 **S. Wiriyasart**, P. Naphon, Experimental Investigation on Heat Transfer Impinging Liquid Jet Characteristics of the Vapor Chambers, *International Journal of Applied Engineering Research*, 4 (2016) 2907-2912.
- 11 L. Nakharinte, P. Naphon, **S. Wiriyasart**, Eulerian Two-Phase Model Analysis on Jet Impingement Nanofluids Heat Transfer in Heat Sinks, *JP Journal of Heat and Mass Transfer*, 14 (2017) 511-532.
- 12 P. Naphon, **S. Wiriyasart**, Pulsating TiO₂ /water nanofluids flow and heat transfer in the spirally coiled tubes with different magnetic field directions, *International Journal of Heat and Mass Transfer*, 115 (2017) 537-543.
- 13 P. Naphon, **S. Wiriyasart**, T. Arisariyawong, T. Nualboonrueng, Magnetic field effect on the nanofluids convective heat transfer and pressure drop in the spirally coiled tubes, *International Journal of Heat and Mass Transfer*, 110 (2017) 739-745.
- 14 L. Nakharintr, P. Naphon, **S. Wiriyasart**, Effect of jet-plate spacing to jet diameter ratios on nanofluids heat transfer in a mini-channel heat sink, *International Journal of Heat and Mass Transfer*, 116 (2018) 352-361.
- 15 P. Naphon, L. Nakharintr, **S. Wiriyasart**, Continuous nanofluids jet impingement heat transfer and flow in a micro-channel heat sink, *International Journal of Heat and Mass Transfer*, 126 (2018) 924-932.
- 16 P. Naphon, **S. Wiriyasart**, Experimental study on laminar pulsating flow and heat transfer of nanofluids in micro-fins tube with magnetic fields, *International Journal of Heat and Mass Transfer*, 118 (2018) 297-303.
- 17 P. Naphon, **S. Wiriyasart**, Pulsating flow and magnetic field effects on the convective heat transfer of TiO₂ -water nanofluids in helically corrugated tube, *International Journal of Heat and Mass Transfer*, 125 (2018) 1054-1060.

- 18 P. Naphon, **S. Wiriyasart**, T. Arisariyawong, Artificial neural network analysis the pulsating Nusselt number and friction factor of TiO_2 /water nanofluids in the spirally coiled tube with magnetic field, *International Journal of Heat and Mass Transfer*, 118 (2018) 1152-1159.
- 19 **S. Wiriyasart**, P. Naphon, Study on Thermal Performance of Cold Plate Unit with Micro-Channel for Supercomputer Cooling, *JP Journal of Heat and Mass Transfer*, 15 (2018) 77-92.
- 20 **S. Wiriyasart**, P. Naphon, Thermal performance enhancement of vapor chamber by coating mini-channel heat sink with porous sintering media, *International Journal of Heat and Mass Transfer*, 126 (2018) 116-122.
- 21 P. Naphon, **S. Wiriyasart**, CONFINED IMPINGING LIQUID JET CHARACTERISTICS OF VAPOR CHAMBER EMBEDDED WITH HEAT SINKS, *Heat Transfer Research*, 49 (2018) 929-948.
- 22 P. Naphon, **S. Wiriyasart**, N. Naphon, Thin Rubber Sheet Drying Curve Characteristics of Fresh Natural Rubber Latex, *International Journal of Applied Engineering Research*, 10 (2018) 8447-8454.
- 23 **S. Wiriyasart**, P. Naphon, Fill Ratio Effects on Vapor Chamber Thermal Resistance with Different Configuration Structures, *International Journal of Heat and Mass Transfer*, 127 (2018) 164-171.
- 24 P. Naphon, **S. Wiriyasart**, T. Arisariyawong, L. Nakharintr, ANN, numerical and experimental analysis on the jet impingement nanofluids flow and heat transfer characteristics in the micro-channel heat sink, *International Journal of Heat and Mass Transfer*, 131 (2019) 329-340.
- 25 **S. Wiriyasart**, P. Naphon, C. Hommalee, Sensible air cool-warm fan with thermoelectric module systems development, *Case Studies in Thermal Engineering*, 13 (2019) 100369.
- 26 C. Hommalee, **S. Wiriyasart**, P. Naphon, Development of cold-hot water dispensers with thermoelectric module systems. *Heat transfer-Asian Research*, 48 (2019) 854-863.

- 27 P. Naphon, **S. Wiriyasart**, Experimental and numerical study on thermoelectric liquid cooling module performance with different heat sink configurations, *Heat and Mass Transfer*, 55 (2019) 2445–2454.
- 28 **S. Wiriyasart**, P. Naphon, Numerical study on air ventilation in the workshop room with multiple heat sources, *Case Studies in Thermal Engineering*, 13 (2019) 100405.
- 29 **S. Wiriyasart**, C. Hommalee, P. Naphon, Thermal cooling enhancement of dual processors computer with thermoelectric air cooler module, *Case Studies in Thermal Engineering*, 14 (2019) 100445.
- 30 **S. Wiriyasart**, P. Naphon, Liquid impingement cooling of cold plate heat sink with different fin configurations: High heat flux applications, *International Journal of Heat and Mass Transfer*, 140 (2019) 181-292.
- 31 A. Siricharoenpanich, **S. Wiriyasart**, R. Prurapark, P. Naphon, Effect of Cooling Water Loop on Thermal Performance of Air Conditioning System, *Case Studies in Thermal Engineering*, 15 (2019) 100518.
- 32 **S. Wiriyasart**, C. Hommalee, R. Prurapark, A. Srichat, P. Naphon, Thermal Efficiency Enhancement of Thermoelectric Module System for Cold-Hot Water Dispenser; Phase II, *Case Studies in Thermal Engineering*, 15 (2019) 100520.
- 33 A. Siricharoenpanich, **S. Wiriyasart**, A. Srichat, P. Naphon, Thermal Management System of CPU Cooling with a Novel Short Heat Pipe Cooling System, *Case Studies in Thermal Engineering*, 15 (2019) 100545.
- 34 **S. Wiriyasart**, P. Naphon, Thermal management system with different configuration liquid vapor chambers for high power electronic devices, *Case Studies in Thermal Engineering*, 18 (2020) 100590.
- 35 **S. Wiriyasart**, C. Hommalee, S. Sirikasemsuk, R. Prurapark, P. Naphon, Thermal management system with nanofluids for electric vehicle battery cooling modules, *Case Studies in Thermal Engineering*, 18 (2020) 100583.
- 36 P. Naphon, T. Arisariyawong, **S. Wiriyasart**, A. Srichat, ANFIS for analysis friction factor and Nusselt number of pulsating nanofluids flow in the fluted tube under magnetic field, *Case Studies in Thermal Engineering*, 18 (2020) 100605.

- 37 **S. Wiriyasart**, P. Naphon, Heat Spreading of Liquid Jet Impingement Cooling of Cold Plate Heat Sink with Different Fin Shapes, *Case Studies in Thermal Engineering*, 20 (2020) 100638.
- 38 A. Siricharoenpanich, **S. Wiriyasart**, A. Srichat, P. Naphon, Thermal Cooling System with Ag/Fe₃O₄ Nanofluids Mixture as Coolant for Electronic Devices Cooling, *Case Studies in Thermal Engineering*, 20 (2020) 100641.
- 39 Vengsungnle, P, Jongpluempiti, J, Srichat, A, **Wiriyasart, S**, Naphon, P, Thermal performance of the photovoltaic-ventilated mixed mode greenhouse solar dryer with automatic closed loop control for Ganoderma drying, *Case Studies in Thermal Engineering*, 21 (2020) 100659.
- 40 Naphon, P, **Wiriyasart, S**, Naphon, N, Thermal, mechanical, and electrical properties of rubber latex with TiO₂ nanoparticles, *Composites Communications*, 22 (2020) 100449.
- 41 **S. Wiriyasart**, P. Naphon, Thermal to Electrical Closed-Loop Thermoelectric Generator with Compact Heat Sink Modules, *International Journal of Heat and Mass Transfer*, 164 (2021) 120562.
- 42 **S. Wiriyasart**, P. Suksusron, C. Hommalee, A. Siricharoenpanich, P. Naphon, Heat transfer enhancement of thermoelectric cooling module with nanofluid and ferrofluid as base fluids, *Case Studies in Thermal Engineering*, 24 (2020) 100877
- 43 C. Hommalee, **S. Wiriyasart**, S. Sirikasemsuk, P. Naphon, Thermal Performance of Thermoelectric Module with Water/Nanofluids for Cooling Electric Vehicle Battery System, Manuscript.
- 44 **Songkran Wiriyasart**, Paisarn Naphon, Analytical Analysis of Fully Developed Laminar Flow on Thermal Performance of Plate Fin Heat Sink: Parametric Study for Engineering Design, *Case Studies in Thermal Engineering*, Manuscript.
- 45 Naphon, P, **Wiriyasart**, Swirling and Secondary Nanofluids Flows and Heat Transfer Behavior in the Spirally Coiled Tubes with and without Helical Ribs, 94 (2021). Accepted.

- 46 Naphon, P, **Wiriyasart**, Numerical Study on the Nanofluid Flows Temperature Behaviors in the Spirally Coiled Tubes with Helical Ribs, Case Studies in Thermal Engineering, Manuscript.
- 47 S. Sirikasemsuk, **S. Wiriyasart***, P. Naphon, Experimental Study on Thermal Management System of Electric Vehicle Battery using Thermoelectric Air-Cooling Module, Journal of Engineering Storage, Manuscript.
- 48 S. Sirikasemsuk, **S. Wiriyasart**, P. Naphon, Thermal Cooling Characteristics of Li-ion Battery Pack with Thermoelectric Ferrofluid Cooling Module, International Journal of Energy Research, Accepted.
- 49 A. Siricharoenpanich, **S. Wiriyasart**, N. Naphon, Heat Transfer Enhancement and Friction Factor of Ferrofluid in the Three-start Helically Fluted Tubes with Electromagnet Field

Additional Professional Activities

National reviewer	International reviewer
SWU Engineering Journal (TCI-1)	Applied Thermal Engineering, Q1 (Elsevier)
Farm Engineering and Automation Technology Research Group; Khon Kaen University, National Conference.	International Journal of Heat and Mass Transfer, Q1 (Elsevier)
	Experimental Thermal and Fluid Science, Q1
	ASME Journal of Thermal Science and Engineering Applications, Q1
	Reviewer, Heat Transfer Asian Research, Q2 (John Wiley & Sons Inc.)
	Journal of Applied and Computational Mechanics, Q2 (Shahid Chamran University of Ahvaz)
	Environmental Engineering and Management Journal, Q3 (Institutul Politehnic din Iasi)

	Recent Patents on Engineering, Q3
	Powder Technology Q1

Book/ Book Chapters

- Songkran Wiriyasart, Numerical Analysis for Engineering, Danex Interoperation, Bangkok. ISBN: 978-616-485-204-4

Courses:

Bachelor's degree:

- Numerical Analysis for Mechanical Engineering
- Introduction to Finite Element Method
- Mechanical Engineering Seminar I
- Mechanical Engineering Seminar II
- Basic Automotive Practice
- Automotive Engineering Practice I
- Automotive Engineering Practice II
- Automotive Engineering Practice III

Master's degree:

- Advance Finite Element
- Electronic Devices Cooling Technologies
- Special Topics in Thermal/Fluid
- Mechanical Engineering Seminars I

Doctor of Philosophy

- Mechanical Engineering Seminars I
- Mechanical Engineering Seminars II
- Mechanical Engineering Seminars III

Patents

- อนุสิทธิบัตร พัดลมสำหรับทำลมร้อน-ลมเย็น (อยู่ระหว่างการขอจดสิทธิบัตร)
- อนุสิทธิบัตร เครื่องทำน้ำร้อน-น้ำเย็นโดยใช้ชุดไมโครเทอร์โมอิเล็กทริกส์ (อยู่ระหว่างการขอจดสิทธิบัตร)