

Curriculum Vitae



1. Name **Phannee Saengkaew**

2. Position **Assistant Professor**

3. Education

2006 - 2010 Dr. rer. nat. in Semiconductor Epitaxy,
Department of Semiconductor Epitaxy,
Institute of Experimental Physics,
Faculty of Natural Sciences,
Otto-von-Guericke University Magdeburg,
Magdeburg, Germany

Dissertation topic:

“Epitaxial growth and properties of AlGaIn-based UV-LEDs on Si(111) substrates”

1997 - 2000 M.Sc. in Nuclear Technology

Department of Nuclear Engineering,
Faculty of Engineering,
Chulalongkorn University, Bangkok, Thailand

Master thesis topic:

“In-situ analysis of some major elements in soil using neutron techniques”

1991- 1995 B.Sc. in Physics

Department of Physics,
Faculty of Science,
Prince of Songkla University, Songkla, Thailand

Senior project topic:

“Quantitative analysis of K-40, uranium and thorium in sand used in construction in Hat Yai area”

4. Address

Department of Nuclear Engineering,
Faculty of Engineering, Chulalongkorn University,
254 Phayathai Road, Pathumwan, Bangkok, Thailand 10330

5. Telephone +662-218-6781, **Mobile** +66-85-113-1518

6. Work Experience

- Lecturer (2015-present)

Department of Nuclear Engineering,
Faculty of Engineering, Chulalongkorn University,
Bangkok, Thailand

- Lecturer (2000-2015)

Department of Industrial Physics and Medical
Instrumentation, Faculty of Applied Science,
King Mongkut's University of Technology North
Bangkok, Bangkok, Thailand

- Teaching Assistant (1997-1999)

Department of Nuclear Engineering,
Faculty of Engineering, Chulalongkorn University,
Bangkok, Thailand

- Technical-document translator (1996 – 1997)

Thai Yarnyon Co.,Ltd., Bangkok, Thailand

- Technician (Laboratory instruments) (1995–1995)

Gammaco (Thailand) Co.,Ltd., Bangkok, Thailand

7. Academic field of specialty

- Material Analysis by scientific instruments and nuclear techniques e.g. X-ray Fluorescence (XRF), Neutron Activation Analysis (NAA), X-ray diffraction (XRD), Scanning electron microscopy (SEM), Transmission electron microscopy (TEM)

- Modified material structures by irradiation
- Radioisotope production
- Development of radiation-detection materials
- Solid State Physics, Physics of semiconductor and electronic materials
- Crystal Growth, Crystal Characterization and Crystallography
- Optical spectroscopy e.g. Photoluminescence (PL), Raman spectroscopy

8. Research outputs: *Publications and Conferences* (Since 2010)

<https://www.research.chula.ac.th/researcher-/phannee-saengkaew/>

Year 2023

34. Prawit Buaban, ***Phanee Saengkaew***, Kulthawat Cheewajaroen, Decho Thong-Aram, Kittidhaj Dhanasiwawong, Visittapong Yordsri, Akapong Phunpueok, Jakrapong Kaewkhao, Nuchjaree Kiwsakunkan & Nakarin Singkiburin, “***Calcium-doped cesium iodide scintillator for gamma-ray spectroscopy***”, Journal of Materials Science: Materials in Electronics volume 34, 96 (2023) p.1-9.

Year 2022

33. C. Khoonthiwong, ***P. Saengkaew***, N. Chankow, “***Determination of the ash content of coal samples by nuclear techniques with bismuth germanate detectors***”, International Journal of Coal Preparation and Utilization, Volume 42, 2022, p.1489-1498.

Year 2020

32. ***พรรณี แสงแก้ว***, มณัสวี เลาะวิธิ, และ ทวีป แสงแห่งธรรม “***การถ่ายภาพเอกซเรย์คอมพิวเตอร์เพื่อการวินิจฉัยโรคระบาดโควิด-19 (CT-scans for the diagnosis of COVID-19 disease)***”, วารสารวิชาการ Thai Journal of Physics เล่มที่ 37 ฉบับที่ 2 (2020) หน้า 45-59

Year 2019

31. I. Wadeng, ***P. Saengkaew***, V. Yordsri, C. Thanachayanont and N. Nuntawong, “***Growth and characterization of calcium-doped cesium iodide (CsI:Ca) optical crystals for radiation detection***”, "Optical Sensors" conference, SPIE Optics &

Optoelectronics; 1- 4 April 2019, in Prague, Czech Republic (accepted for Poster presentation)

Year 2018

30. P. Sintham, **P. Saengkaew** and S. Sanorpim, “**Optical properties of CsI: Tl crystals grown using different precursors purities**” - Journal of Physics: Conference Series 1144(1), IOP Publishing 2018, p.012105
29. C. Khoonthiwong, **P. Saengkaew*** and N. Chankow, “**Dual-Energy Gamma-Ray Transmission by Using BGO Detectors to Determine the Content of Coal Ash**”, 46th National and 9th International Graduate Research Conference, May 2018, at The Empress International Convention Center, The Empress Hotel, Chiang Mai, Thailand
28. K. Cheewajaroen, **P. Saengkaew**, S. Sanorpim, V. Yordsri, C. Thanachayanont, N. Nuntawong and W. Rathanasakulthong, “**Characterization of N-type and P-type Aluminium Antimonides on Si substrates for room-temperature optoelectronic devices**” , Materials Science in Semiconductor Processing 88(2018), p.224-233

Year 2017

27. K. Cheewajaroen, **P. Saengkaew**, S. Sanorpim, V. Yordsri, C. Thanachayanont, N. Nuntawong and W. Rathanasakulthong, “**N-type and p-type AlSb films on Si substrates for radiation detection sensors**” , The 2nd International Conference on Applied Surface Science (ICASS) at Furama Hotel, Dalian, China, June 12-15, 2017

Year 2016

26. **P. Saengkaew**, S. Sanorpim, M. Jitpukdee, K. Cheewajaroen, C. Yenchai, D. Thong-aram, V. Yordsri, C. Thanachayanont, and N. Nuntawong, “**Impact of precursor purity on optical properties and radiation detection of CsI:Tl scintillators**” , Applied Physics A, August 2016, 122(8): 729/1-7
25. K. Cheewajaroen, **P. Saengkaew**, S. Sanorpim, V. Yordsri, C. Thanachayanont, N. Nuntawong and W. Rathanasakulthong, “**Growth and Characterization of Aluminum Antimonides for Radiation Detectors**”, The 18th International Conference on Crystal Growth and Epitaxy (ICCGE-18), The Nagoya Congress Center, Nagoya, Japan, August 7-12, 2016

Year 2015

24. **P. Saengkaew**, M. Jitpukdee, K. Cheewajaroen, S. Khaophew, V. Yordsri, and C. Thanachayanont, “**Growth and Characterizations of Cesium Iodides for Radiation Detection Materials**”, *The 41st Congress on Science and Technology of Thailand (STT41)*, Suranaree University, NakhonRatchasima, Thailand (D_D0041), 6-8 November 2015.
23. **P. Saengkaew**, S. Sanorpim, K. Cheewajaroen, V. Yordsri, C. Thanachayanont, and W. Rathanasakulthong, “**Growth and Characterizations of II-V Semiconductors for Radiation Detection**”, *The 41st Congress on Science and Technology of Thailand (STT41)*, Suranaree University, NakhonRatchasima, Thailand (D_D0039), 6-8 November 2015.
22. **P. Saengkaew**, K. Chantanachai, K. Cheewajaroen, and W. Nimsiri “**Characterization and Electrical Properties of Chitosan for Waste Water Treatment**”, *International Conference on Condensed Matter and Applied Physics (ICC2015)*, by AIP (American Institute of Physics) conference proceedings, Bikaner, Rajasthan, India (ID72), 30-31 October 2015.
21. **P. Saengkaew**, S. Sanorpim, V. Yordsri, C. Thanachayanont, and K. Onabe, “**Characterization of semi-polar GaN on GaAs substrates**”, *Journal of Crystal Growth* 411, p. 76-80 (February 2015)

Year 2014

20. W. Rattanawong, **P. Saengkaew**, N. Ploysuayngam, S. Pan-Amphan, and W. Teerasongsawat, “**Electrical Properties and Characterization of Chitosan Applied in Cosmetics**”, *Journal of Chitin and Chitosan*, Vol. 2, No.3, 185–190, 2014 (September 2014)
19. **P. Saengkaew**, S. Sanorpim, C. Thanachayanont, V. Yordsri and K. Onabe, “**The Impact of Al-composition on Microstructures and Crystalline Quality of Semi-Polar $Al_xGa_{1-x}N$ on GaAs Substrates by MOVPE Growth**”, *Conference on LED and Its Industrial Application 2014 (LEDIA'14)*, 22-24 April 2014, Yokohama, Japan (April 2014)

Year 2013

18. **P. Saengkaew**, S. Sanorpim, C. Thanachayanont, V. Yordsri and K. Onabe, “**Microstructural analysis of semi-polar AlGa_xN on GaAs substrates by MOVPE**

- growth**”, 13th Thailand Research Fund (TRF) meeting of seniors and newcomers 2013, Cha-am, Petchaburi, Thailand, (October 2013)
17. **P. Saengkaew**, W. Rattanawong, N. Ploysuayngam, S. Pan-Amphan, W. Teerasongsawat, and K. Chantanachai, **“Improvement of cosmetic products by the addition of chitosan from shrimp shell wastes”**, Thailand Research Expo 2013, Bangkok Convention Center, Centara Grand Hotel Central World, Bangkok, Thailand (August 2013)
16. **P. Saengkaew**, W. Rattanawong, N. Ploysuayngam, S. Pan-amphan, and W. Teerasongsawat, **“Characterization and Electrical Properties of Chitosan for Improvement of Cosmetic Products”**, The 7th Conference of the Asian Consortium on Computational Materials Science (ACCMs-7), Nakhon Ratchasima, Thailand, (July 2013).
15. N. Ploysuayngam, W. Rattanawong, K. Chantanachai and **P. Saengkaew**, **“Characterization and Electrical Properties of Chitosan for Improvement of Facial Powders”**, The 8th Siam Physics Congress (SPC2013), Chiangmai Grandview Hotel & Convention Center, Chiangmai, Thailand, (March 2013).
14. S. Pan-amphan, W. Teerasongsawat, K. Chantanachai, W. Rattanawong and **P. Saengkaew**, **“Characterization and Electrical Properties of Chitosan for Improvement of Lipstick Products”**, The 8th Siam Physics Congress (SPC2013), Chiangmai Grandview Hotel & Convention Center, Chiangmai, Thailand, (March 2013).

Year 2012

13. **P. Saengkaew**, S. Sanorpim, C. Thanachayanont, V. Yordsri and K. Onabe, **“Influence of Al content on the quality and properties of AlGaN on GaAs substrates”**, International Workshop on Nitride Semiconductors (IWN2012), Sapporo Convention Center, Sapporo, Japan, ThP-PR-44, (October 2012).
12. W. Pokeaw, J. Kongmode, A. Na-Nakorn, **P. Saengkaew**, R. Yeetsorn, and M. Tirarattanasompot, **“Syntheses and Characterization of Tin Compound Films Refined from Used Tinsplate Cans”**, The 38th Congress on Science and Technology of Thailand (STT38), The Empress Convention Centre Chiangmai, Chiangmai, Thailand, D_D0039, (October 2012).

Year 2011

11. **P. Saengkaew**, A. Dadgar, J. Blaesing, T. Hempel, S. Sanorpim, C. Thanachayanont, V. Yordsri, W. Rattanasakulthong, and A. Krost; **“The role of Ga to improve AlN-nucleation layer for $Al_{0.1}Ga_{0.9}N/Si(111)$ ”**, *World Academy of Science Engineering and Technology*, Vol.59, November(2011), p. 1950-1953
10. **P. Saengkaew**, W. Ussawawongaraya, S. Khaweerat, S. Rugmai, S. Ouajai, J. Luengviriyaya, S. Sanorpim, M. Tirarattanasompot, and S. Rhianphumikarakit; **“A preliminary x-ray study on human-hair microstructures for a health-state indicator”**, *World Academy of Science Engineering and Technology*, Vol.59, November(2011), p. 1945-1949
9. **P. Saengkaew**, W. Ussawawongaraya, S. Khaweerat, S. Ouajai, J. Luengviriyaya, S. Sanorpim, M. Tirarattanasompot and S. Rhianphumikarakit, **“Microstructural analysis of human hair in correlation to breast cancer diagnosis by X-ray techniques”**, *The 6th Siam Physics Congress (SPC2011)*, Pattaya, Thailand, SPC0142, (2011).
8. **P. Saengkaew**, A. Dadgar, J. Blaesing, S. Sanorpim, W. Rattanasakulthong, and A. Krost, **“The impact of Ga in AlN-nucleation layer for $Al_{0.1}Ga_{0.9}N$ layers on Si(111) substrates”**, *The 6th Siam Physics Congress (SPC2011)*, Pattaya, Thailand, SPC0156, (2011).
7. **P. Saengkaew**, A. Dadgar, J. Blaesing, S. Sanorpim, C. Thanachayanont, V. Yordsri, W. Rattanasakulthong, and A. Krost, **“Improved AlN-nucleation layer for $Al_{0.1}Ga_{0.9}N/Si(111)$ ”**, *The 9th International Conference on Nitride Semiconductors (ICNS 2011)*, Glasgow, The United Kingdom, PB2.22 (2011).
6. A. Rohrbeck, H. Witte, **P. Saengkaew**, T. Fey, A. Dadgar, J. Christen, and A. Krost, **“Investigations of pn-junctions based on AlGaN / AlN structures for LEDs on Si(111)”**, *DPG-Verhandlungen, Dresden, Germany, HL 47.5*, (2011).
5. H. Witte, A. Rohrbeck, K.-M. Günther, **P. Saengkaew**, J. Blasing, A. Dadgar, and A. Krost **“Electrical investigations of AlGaN/AlN structures for LEDs on Si(111)”**, *Physica Status Solidi (a)*, 208, 1597, (2011).
4. **P. Saengkaew**, S. Sinsart, R. Areekul, S. Sanorpim, A. Charoenpatanapysal, and K. Onabe; **“Characterizations of Aluminium Gallium Nitride on Gallium-Arsenide Substrates”**, *The 37th Congress on Science and Technology of Thailand (STT37)*, Central World, Bangkok, Thailand, B_B0075, (2011).

Year 2010

3. K.-M. Günther, H. Witte, A. Rohrbeck, P. Saengkaew, J. Bläsing, A. Dadgar and A. Krost, “*Elektrische Untersuchungen an AlN/AlGaInN-Strukturen für LEDs auf Si(111)*”, DPG-Verhandlungen, Regensburg, Germany, HL 56.9, (2010).
2. L. Groh, C. Hums, M. Wieneke, P. Saengkaew, J. Bläsing and A. Krost, “*Charakterisierung von AlGaInN mittels Röntgenbeugung und -fluoreszenz*”, DPG-Verhandlungen, Regensburg, Germany, HL 27.5, (2010).
1. P. Saengkaew, A. Dadgar, J. Bläsing, H. Witte, M. Müller, K. M. Günther, T. Fey, B. Bastek, F. Bertram, M.v. Kurnatowski, M. Wieneke, T. Hempel, P. Veit, R. Clos, J. Christen, and A. Krost, “*Crack-free AlGaInN-based UV LED on Si(111) substrate*”, DPG-Verhandlungen, Regensburg, Germany, HL 31.10, (2010).

9. Achievements

- DAAD scholarship awarded by German Academic Exchange Service
- Graduated student’s award for excellence in master program of nuclear technology, Chalulalongkorn University

10. Research Grants

- Ratchadapisek Sompot Fund, Chulalongkorn University for 1 year (2019-2020);
“*Development of Scintillation Crystals for Pocket Dosimeter*”
- Thai Research Fund for new scholars for 2 years (2015-2017);
“*Investigation on Multi-Layer III–V Semiconductors for Radiation Detections and Photovoltaic Applications*”
- Ratchadapisek Sompot Fund, Chulalongkorn University for 1 year (2015);
“*Growth and characterization of detector materials by homemade vertical Bridgman-Stockbarger crystal growth furnace*”
- Thai Research Fund for new scholars for 2 years (2011-2013);
“*Structural Analysis of non-polar group III-Nitrides grown on GaAs substrates by MOVPE*”
- Research Fund of Applied Science Faculty, KMUTNB for 1 year (2014);
“*Structural analysis and characterization of chitosan extracted from shrimp shell wastes for industrial wastewater treatment*”
- Research Fund of Applied Science Faculty, KMUTNB for 1 year (2012);

“Structural and elemental analysis to improve cosmetic products by adding chitosan from shrimp shell wastes”

- Research Fund of Applied Science Faculty, KMUTNB for 1 year (2005);
“Analysis of Trace Elements in Hair of Breast Cancer Patients by X – Ray fluorescence analysis”

11. Experiences on Training, Workshop and Visiting

- Visiting to “CGN Fangchenggang Nuclear Power Plant”: 24-26 December 2018, Fangchenggang, China
- “US.NRC. IRDP Practical Basics of Civil/Structural, Welding and Non-destructive Examination, Mechanical, and Electrical and Nuclear Quality Assurance”: 23-26 July, 2018 at OAP office, Bangkok, Thailand
- “GICNT Destiny Elephant: the Nuclear Forensics Regional Exercise” by IAEA: 6-8 March 2018, Bangkok, Thailand
- “US.NRC. Construction and Vendor Inspections Workshop”: 15-19 January, 2018 at OAP office, Bangkok, Thailand
- “Joint ICTP-IAEA School on Nuclear Knowledge Management”: September 2017 at ICTP, Trieste, Italy.
- Visiting researcher for “the development of CsI crystals for next detectors for school students”: 19 June to 14 July 2017, at Division for Environment Health and Safety, The University of Tokyo, Tokyo, Japan
- “Instructor Training Course (ITC2016) on Nuclear Reactor Engineering”: 22 August to 14 October 2016 at JAEA, Japan
- “Regional Workshop on the Development of National Training Programmes in Computer Security”: 27 June to 1 July 2016 at ISCN, JAEA, Tokai, Japan
- “Workshop on Introducing Nuclear Sciences and Technology to Secondary Schools: Results of the Pilot Phase and the Way Forward”: 14-18 December 2015, at ANSTO, Sydney, Lucas Heights, Australia
- Visiting to Kyung Hee University, Hanyang University, KINGS, KEPCO Nuclear Fuel(KNF) and KORI NPP site(KHNP) by Korea Nuclear Association (KNA) for International Cooperation: 21-25 September 2015, Seoul and Pusan, Korea

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Biography

Phannee Saengkaew, Dr.rer.nat, is an Assistant Professor of Nuclear Engineering, Department of Nuclear Engineering, Faculty of Engineering, Chulalongkorn University. She is providing teaching at Department of Nuclear Engineering, Faculty of Engineering, Chulalongkorn University; radiation protection, radiation dosimetry, radioisotope production and materials analysis by nuclear techniques.

She has published about 10 peer review papers and about 20 proceeding papers on developments of scintillators or optical crystals and optoelectronics devices, materials analysis by nuclear techniques. She is also a reviewer for some journals about materials science and nuclear engineering. She is a member of Nuclear Society of Thailand and The Science Society of Thailand. She has supervised some graduate students to completion, all with high impact publications. She has received a research award of Outstanding presentation of Young Scholar Award by Thailand Research Fund. She has secured four major grants from Chulalongkorn University (2) and Thailand Research Fund (2). Her research interests include applications of radioisotopes and neutron, radioisotope production, modified materials by irradiation and development of radiation detectors, especially scintillation crystals and optoelectronics devices.