Curriculum Vitae

ASSOCIATE PROFESSOR BENCHAPORN LERTANANTAWONG

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EDUCATION

2002- 2007	King Mongkut's University of Technology Thonburi, Thailand PhD (Biotechnology)
1998-2002	King Mongkut's University of Technology Thonburi, Thailand M.Sc. (Biotechnology)
1994-1998	King Mongkut's University of Technology Thonburi, Thailand B.Sc. (Chemistry)

Research EXPERIENCE:

Nanobiosensors for biomedical application, DNA self-assembly, Electrochemistry, Nanomaterials for sensing application, Bio-Chemical Sensors, Electroanalytical chemistry, Electrodeposition, Electrocatalysis, sonochemistry

Electrochemical Skills

Cyclic voltammetry, chronoamperometry, differential pulse voltammetry, stripping voltammetry, square wave voltammetry, bulk electrolysis, chronocoulometry, scanning electrochemical microscopy, ac techniques such as impedance spectroscopy and large amplitude Fourier transformed ac voltammetry.

CAREER HISTORY

19 Jan 2021 – Present	Associate Professor at Mahidol University, Department of Biomedical Engineering, Faculty of Engineering
1 Aug 2018 – Jan 2021	Assistant Professor, Lecturer at Mahidol University, Department of Biomedical Engineering, Faculty of Engineering
31 Jan 2018 – Jul 2018	Assistant Professor, Lecturer at KMUTT Nanoscience and nanotechnology program, Faculty of Sciences.
1 Aug 2016 – Jan 2018	Lecturer, KMUTT Nanoscience and nanotechnology program, Faculty of Sciences.
May 2013 – Jul 2016	Researcher, Pilot Plant Development and Training Institute, KMUTT
May 2009 – May 2013	Senior Lecturer, AIMST University, MALAYSIA Faculty of Applied Sciences

PUBLICATIONS

Journal Articles:

1. Thayanukul P, **Lertanantawong B**, Sirawaraporn W, Charasmongkolcharoen S, Chaibun T, Jittungdee R, Kittayapong P., Simple, sensitive, and cost-effective detection of w AlbB Wolbachia in Aedes mosquitoes, using loop mediated isothermal amplification combined with the electrochemical biosensing method. PLOS Neglected Tropical Diseases. 2022 May 13;16(5):e0009600. https://doi.org/10.1371/journal.pntd.0009600 (H-INDEX 143, IF 4.414)
2. Chaibun, T.; Thanasapburachot, P.; Chatchawal, P.; Su Yin, L.; Jiaranuchart, S.; Jearanaikoon, P.; Promptmas, C.; Buajeeb, W*.; **Lertanantawong, B*.** A Multianalyte Electrochemical Genosensor for the Detection of High-Risk HPV Genotypes in Oral and Cervical Cancers. *Biosensors* **2022**, *12*, 290. https://doi.org/10.3390/bios12050290 (Q2, IF 5.519)
3. Alam, I.; **Lertanantawong, B**.; Sutthibutpong, T.; Punnakitikashem, P.; Asanithi, P. Molecularly Imprinted Polymer-Amyloid Fibril-Based Electrochemical Biosensor for Ultrasensitive Detection of Tryptophan. *Biosensors* **2022**, *12*, 291. https://doi.org/10.3390/bios12050291 (Q2, IF 5.519)
4. Cheryl S.Y. Yeap, Thanyarat Chaibun, Su Yin Lee, Bin Zhao, Yuan Jan, Chan La-o-vorakiat, Werasak Surareungchai, Shiping Song and **Benchaporn Lertanantawong***, Ultrasensitive pathogen detection with a rolling circle amplification-empowered multiplex electrochemical DNA sensor, Chemical Communications, 2021,57, 12155-12158. DOI https://doi.org/10.1039/D1CC05181D (IF 6.222)
5. Ibrar Alam, **Benchaporn Lertanantawong**, Worapot Prongmanee, Tossaporn Lertvanithphol, Mati Horprathum, Thana Sutthibutpong, Piyapong Asanithi, Investigating lysozyme amyloid fibrillization by electrochemical impedance spectroscopy for application in lysozyme sensor, Journal of Electroanalytical Chemistry, (2021) Volume 901,15799. https://doi.org/10.1016/j.jelechem.2021.115799. (IF 4.464)
6. Devkota, M., Chuangchote, S., La-o-vorakiat, C. Lertsathitphong, P., **Lertanantawong, B.**, Somasundrum, M., Surareungchai, W., Photoelectrochemical reduction rate of ferricyanide at different TiO_2 forms: comparison of SECM and cyclic voltammetric results. J Solid State Electrochem 25, 1691–1698 (2021). https://doi.org/10.1007/s10008-021-04928-8
7. Thanyarat Chaibun, Jiratchaya Puenpa, Tatchanun Ngamdee, Nimaradee Boonapatcharoen, Pornpat Athamanolap, Anthony Peter O'Mullane, Sompong Vongpunsawad, Yong Poovorawan, Lee Su Yin, **Benchaporn Lertanantawong***, Rapid Electrochemical Detection of Coronavirus SARS-CoV-2 (2020), Nature Communication, 12, 802 (2021). https://doi.org/10.1038/s41467-021-21121-7
8. Duy Ba Ngo, Thanyarat Chaibun, Lee Su Yin, Baskar Thangaraj, **Benchaporn Lertanantawong***, Werasak Surareungchai*, Electrochemical DNA detection of hepatitis E virus genotype 3 using PbS quantum dot labelling. Anal Bioanal Chem (2020). https://doi.org/10.1007/s00216-020-03061-1)

9. Tatchanun Ngamdee; Su Yin Lee; Sompong Vongpunsawad; Yong Poovorawan; Werasak Surareungchai; **Benchaporn Lertanantawong***, (2020), Target Induced-DNA Strand Displacement Reaction Using Gold Nanoparticle Labeling for Hepatitis E Virus Detection, Analytica Chimica Acta, Volume 1134, Pages 10-17.
10. Panjaphong Lertsathitphong, Anthony P. O'Mullane, **Benchaporn Lertanantawong***, (2020) Electrochemical restructuring of Gold electrodes with redox active species to create electrocatalytically active nanostructured surfaces, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Volume 592, page 124580.
11. Pringkasemchai, A., Hoshyargar, F. , **Lertanantawong, B***. and O'Mullane, A. P.(2019), Lightweight ITO Electrodes Decorated with Gold Nanostructures for Electrochemical Applications. Electroanalysis (2019) Volume 31, Issue 11, pages 2095–2102. doi:10.1002/elan.201900152
12. **B. Lertanantawong,** A. Krissanaprasit, T. Chaibun, K. Vesterager Gothelf, W. Surareungchai, Multiplexed DNA Detection with DNA Tweezers in a One-Pot Reaction, Materials Science for Energy Technologies (2019) Volume 2, Issue 3, December 2019, Pages 503-508, doi: https://doi.org/10.1016/j.mset. 2019.05.001
13. **B**. **Lertanantawong***, Panjaphong Lertsathitphong, A. O'Mullane*, Chemical reactivity of Ga based liquid metals with redox active species and its influence on electrochemical processes, 2018, Electrochem. Comm., Volume 93, Pages 15-19.
14. T. Chaibun, C. La-o-vorakiat, A. O'Mullane, **B. Lertanantawong*,** W. Surareungchai, Fingerprinting Green Curry: an Electrochemical Approach to Food Quality Control, 2018, ACS Sens., Volume 3 (6), Pages 1149–1155.
15. **B Lertanantawong**, J. Riches, A. O'Mullane, Room temperature electrochemical synthesis of crystalline GaOOH nanoparticles from expanding liquid metals 2018, Langmuir. Volume 34(26), Pages 7604-7611.
16. **B. Lertanantawong**, F. Hoshyargar and A. P. O'Mullane, Directing nanostructure formation of gold via the in situ under potential deposition of a secondary metal for the detection of nitrite ions, 2018, ChemElectroChem, Volume 5, Issue 6, Pages 911-916.
17. M. M Balbin, **B. Lertanantawong**, W. Suraruengchai, C. N. Mingala, Colorimetric detection of caprine arthritis encephalitis virus (CAEV) through loop-mediated isothermal amplification (LAMP) with gold Nanoprobes, 2017, Small Ruminant Research, Volume 147, Pages 48-55.
18. M. krishna, S. Cheunkar, **B. Lertanantawong**, T. Ramakrishnappa, D.H. Nagaraju, W. Surareungchai, R. G. Balakrishna, K. R. Reddy., Graphene oxide Cu(II) composite electrode for nonenzymatic determination of hydrogen peroxide, 2016, Journal of Electroanalytical Chemistry, Volume 776, Pages 59-65
19. **B. Lertanantawong**, W. Surareungchai, A. P. O'Mullane, Utilising solution dispersed platinum nanoparticles to direct the growth of electrodeposited platinum nanostructures and its influence on the electrocatalytic oxidation of small organic molecules, 2016, Journal of Electroanalytical Chemistry, Volume 779, Pages 99-105.

20. D. Vijian, S. V. Chinni, Lee S. Y., **B. Lertanantawong***, W. Surareungchai, "Simultaneous Multiple Detection of Pathogens using Quantum Dots Mediated Electrochemical Detection". Biosensors and Bioelectronics, Volume 77, 15 March 2016, Pages 805-811.
21. P.S. Liew; **B. Lertanantawong***, S. Y. Lee; R. Manickam ; Y.H. Lee; W. Surareungchai, "Electrochemical Genosensor Assay Using Lyophilized Gold Nanoparticles/Latex Microsphere Label for Detection of Vibrio cholera". Talanta, Volume 139, 6 March 2015, Pages 167-173.
22. G. C. Guan, Liew P.S., P. Rijiravanich, Lee S.Y., K. Marimuthu, **B. Lertanantawong***, M.Ravichandran, W. Surareungchai, "Development of an ultrasensitive genosensor based on multi- layer latex-gold nanoparticles for detection of fish pathogen, Aphanomyces invadans". Talanta Volume 117, 15 December 2013, Pages 312-317.
23. **B. Lertanantawong**, A. P. O'Mullane, J. Zhang, W. Surareungchai, M. Somasundrum, and A. M. Bond, "Investigation of Mediated Oxidation of Ascorbic Acid by Ferrocenemethanol Using Large-Amplitude Fourier Transformed ac Voltammetry under Quasi-Reversible Electron-Transfer Conditions at an Indium Tin Oxide Electrode." Analytical Chemistry (Article); 2008; 80(17); 6515-6525.
24. **B. Lertanantawong**, Anthony P. O'Mullane, Werasak Surareungchai, Mithran Somasundrum, L. Declan Burke, and Alan M. Bond, "The Electrochemistry of Gold in Aqueous Solution: A Fourier Transformed Alternating Current Voltammetry Approach." Langmuir (Research Article) 24(6) (2008) 2856-2868.
25. **B. Loetanantawong**, C. Suracheep, M. Somasundrum and W. Surareungchai, "Electrocatalytic tetracycline oxidation at a mixed-valent ruthenium oxide-ruthenium cyanide-modified glassy carbon electrode and determination of tetracyclines by liquid chromatography with electrochemical detection." Analytical Chemistry 76 (2004) 2266-2272.

Book Chapter:

Oaew, S., **Lertanantawong, B**., Rijiravanich, P., Somasundrum, M., Surareungchai, W., Nanomaterial based electrochemical sensors for highly sensitive foodborne pathogen detection, pp. 203-225, in ed. Ahmed, M.D., Zourob, M., Tamiya, E. "Food Biosensors", the Royal Society of Chemistry, London.

Invited Speaker (International Conference)

1. Electrochemical DNA Sensors for Multiple Pathogens Detection), "Materials Thailand: AMF-AMEC2021" during 7th- 9th July, 2021 by online

International conferences:

1. Khunnaphat Lertborworn, Panjaphong Lertsathitphong, Zenith Samransamruadkit, Phuritpach Nantasitangkool, Nalin Ratnarathorn and **Benchaporn Lertanantawong*** "An Electroanalysis of Elements in Gunpowder in Explosive Ordnance Disposal Field" (DET-NRCE 4), in symposium "DETECTION – NRCE" at the CBRNE Research & Innovation Conference in Lille, France. 3-6 May 2022

2. **Benchaporn Lertanantawong***, Thanyarat Chaibun, Jiratchaya Puenpa, Tatchanun Ngamdee, Nimaradee Boonapatcharoen, Pornpat Athamanolap, Anthony Peter O'Mullane, Sompong Vongpunsawad, Yong Poovorawan, Lee Su Yin, "Ultrasensitive Electrochemical DNA Sensors for SARS-CoV-2 detection." (ise213807), in symposium "S05 - New Electrochemical Approaches and Devices for Monitoring Diseases and Human Health" at the 72nd Annual Meeting of the International Society of Electrochemistry in Jeju Island, Korea. 29 August - 03 September 2021
3. Panjaphong Lertsathitphong and **B. Lertanantawong***, The active gold nanostructured formation and it electrocatalysis in sensing application from electrochemical restructuring with redox active species, "Materials Thailand: AMF-AMEC2021" during 7th- 9th July, 2021 by online.
4. Chavalchart Herabut and **B. Lertanantawong***, Toilet Gadget and System for Urine Monitoring, "Materials Thailand: AMF-AMEC2021" during 7th- 9th July, 2021 by online.
5. **B. Lertanantawong***, T. Chaibun, C. La-o-vorakiat, A. O'Mullane, W. Surareungchai, The Identification of Key Ingredients of Green Curry by use of Differential Pulse Voltammetry with an Unmodified Electrode, The 69th Annual Meeting of the International Society of Electrochemistry, 2 - 7 September 2018 Bologna, Italy.
6. **B. Lertanantawong**, W. Surareungchai, A. P O'Mullane, Influence of Nanoparticle-Electrode Collisions on the Electrodeposition of Pt Nanostructures and their Electrocatalytic Properties, 19th Topical Meeting of the International Society of Electrochemistry, 17 – 20 April 2016, Engineering School, The University of Auckland, New Zealand.
7. D. Vijian, **B. Lertanantawong**, W. Surareungchai, Simultaneous Multiple Detection Of Pathogens Using Quantum Dots Mediated Electrochemical Detection The 8th SEATUC Symposium, 4th – 5th March 2014, M-Suites Hotel, Johor Bahru, Malaysia.
8. D. Vijian, **B. Lertanantawong**, W. Surareungchai, (2013), "Characterization Study of Quantum Dots And Multiplex Electrochemical Detection of Enteric Pathogens." Aseanplus2013, 11-13 December 2013, Mae Fah Luang University, Chiangrai, Thailand.
9. L. Pei Sheng, L. Su Yin, **B. Lertanantawong**, W. Surareungchai (2013) "Optimization Study of Dry Reagent Gold Nanoparticles-Based DNA Biosensor for the Detection of Vibrio cholera." December 2013, Mae Fah Luang University, Chiangrai, Thailand.
10. Lee Y. H., Liew P. S., Lee S. Y. and **B. Lertanantawong** (2013) "Rapid Detection of vibrio cholerae Bacteria Employing A DNA Biosensor from Gold Nanoparticles Loaded Latex Polymeric Spheres." ASIASENSE 2013, 27-29 August 2013, Ramada Plaza Melaka Hotel, Melaka, Malaysia.
11. J. Thavanathan, **B. Lertanantawong** and P. Lalitha (2011) "Immobilization & Hybridization Study of Gold nanoparticles Against Salt Induced Aggregation Using Oligonucleotides." The 14th Asian Chemical Congress 2011, 5-8 September 2011, The Queen Sirikit National Convention Centre (QSNCC), Bangkok, Thailand.
12. C.-K. Guan, S.-Y. Lee, P. Rijiravanich, **B. Lertanantawong** and W. Surareungchai (2011) "Electrochemical Genosensor based on Colloidal Gold Nanoparticles for the Detection Etiological Agent of Epizootic Ulcerative Syndrome (EUS) in Fish." The 14th Asian Chemical

Congress 2011, 5-8 September 2011, The Queen Sirikit National Convention Centre (QSNCC), Bangkok, Thailand.

13. **B. Lertanantawong**, A. P. O'Mullane, J. Zhang, W. Surareungchai, M. Somasundrum, and A. M. Bond (2008) "Mediated Oxidation Of Ascorbic Acid Using Planar Gold And Gold Nanoparticles." Pure and Applied Chemistry Conference 2008, January 30 - February 1, 2008, Sofitel Centara Grand Bangkok, Bangkok, Thailand.
14. K. Cheuanrangsikul, **B. Lertanantawong**, P. Rijiravanich, P. Khownarumit, P. Srithongkham, M. Somasundrum, and W. Surareungchai, "A Disposable glucose biosensor based on screen-printed carbon electrodes mediated with ferrocene methanol-GOD on latex mixture." PACCON, 2008.
15. **B. Loetanantawong**, W. Surareungchai and M. Somasundrum (2005) "Redox- Mediated Oxidation of Ethylene in Liquid and Gas Phase Using Ferrocene Derivatives." The 208th Meeting of the Electrochemical Society, 16-21 October 2005, Los Angeles, California.
16. Oong C. L. and **B. Lertanantawong** (2011) "Ultrasensitive Electrochemical DNA Sensor for the Detection of Vibrio cholerae Using Gold Nanoparticles-Latex Conjugation.", 22nd Intervarsity Biochemistry Seminar 2011, 19 March 2011, University Kebangsaan, Malaysia.