

## Chien-Hung (Henry) Li

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### Education

- Ph.D. Chemistry, University of Houston, Houston, U.S. 2009 – 2015  
Advisor: Dr. T. Randall Lee
- B.S. Chemistry, National Dong Hwa University, Hualien, Taiwan 2004 – 2008

### Professional Experience

- Assistant Professor – Kaohsiung Medical University, Taiwan 2018 – present  
Department of Medicinal and Applied Chemistry
- Postdoctoral Associate – Queen's University, Canada 2016 – 2018  
Advisor: Dr. Cathleen M. Crudden
- Postdoctoral Associate – University of Houston, U.S. 2015 – 2016  
Advisor: Dr. T. Randall Lee

### Honors and Awards

- TCSUH Student Travel Award 2014

### Publications (\*denote as co-first author; # denote as KMU students)

1. Liu, T.; Zhang, Y.; Li, C.-H.; Marquez, M. D.; Tran, H.-V.; Hernández, F. C. R.; Yao, Y.; Lee, T. R. Semihollow Core-Shell Nanoparticles with Porous SiO<sub>2</sub> Shells Encapsulating Elemental Sulfur for Lithium-Sulfur Batteries. *ACS Appl. Mater. Interfaces*. **2020**, *12*, 47368–47376.
2. Li, C.-H.\*; Khantamat, O.\*; Liu, T.; Arnob, M. M. P.; Lin, L.#; Jamison, A. C.; Shih, W.-C.; Lee, T.-C.; Lee, T. R. Optically Tunable Tin Oxide-Coated Hollow Gold-Silver Nanorattles for Use in Solar-Driven Application. *ACS Omega* **2020**, *5*, 23769–23777.
3. Medhi, R.; Li, C.-H.; Lee, S.; Srinoi, P.; Marquez, M. D.; Hernandez, F. C. R.; Jacobson, A. J.; Lee, T. -C.; Lee, T. R. Antimony- and Zinc-Doped Tin Oxide Shells Coated Au Nanoparticles and Au-Ag Nanoshells Having Tunable Extinctions for Sensing and Photonic Applications. *ACS Appl. Nano Mater.* **2020**, *3*, 8958–8971.
4. Chen, Y.-T.; Li, C.-H.; Chen, P.-Y. Galvanic Replacement on Electrodeposited Tangled Zn Nanowire Sacrificial Template for Preparing Porous and Hollow Ni Electrodes in Ionic Liquid. *J. Mol. Liq.* **2020**, *298*, 112050.
5. Medhi, R.; Li, C.-H.; Lee, S.; Marquez, M.; Jacobson, A.; Lee, T.-C.; Lee, T. R. Uniformly Spherical and Monodisperse Antimony- and Zinc-Doped Tin Oxide Nanoparticles for Optical and Electronic Applications. *ACS Appl. Nano Mater.* **2019**, *2*, 6554–6564.
6. Smith, C. A.; Narouz, M. N.; Lummis, P. A.; Singh, I.; Nazemi, A.; Li, C.-H.; Crudden, C. M. *N*-Heterocyclic Carbenes in Material Chemistry. *Chem. Rev.* **2019**, *119*, 4986–5056.

7. Stephens, L.\*; Padmos, J. D. \*; Narouz, M. \*; Al-Rashed, A.; Li, C.-H.; Payne, N.; Zamora, M.; Crudden, C. M.; Mauzeroll, J.; Horton, J. H. The Structural and Electrochemical Effects of *N*-Heterocyclic Carbene Monolayers on Magnesium. *J. Electrochem. Soc.*, **2018**, *165*, G139–G145.
8. Man, R. W. Y.; Li, C.-H.; Maclean, M. W. A.; Zenkina, O. V.; Zamora, M. T.; Saunders, L. N.; Rousina-Webb, A.; Nambo, M.; Crudden, C. M. Ultrastable Gold Nanoparticles Modified by Bidentate *N*-Heterocyclic Carbene Ligands. *J. Am. Chem. Soc.*, **2018**, *140*, 1576–1579.
9. Khantamat, O.\*; Li, C.-H.\*; Liu, S.-P.; Liu, T.; Lee, H. J.; Zenasni, O.; Lee, T.-C.; Cai, C.; Lee, T. R. Broadening the Photoresponsive Activity of Anatase TiO<sub>2</sub> Particles via Decoration with Partial Gold Shells. *J. Colloid Interface Sci.*, **2018**, *513*, 715–725.
10. Narouz, M. R.; Li, C.-H.; Nazemi, A.; Crudden, C. M. Amphiphilic *N*-Heterocyclic Carbene-Stabilized Gold Nanoparticles and Their Self-Assembly in Polar Solvents. *Langmuir*, **2017**, *33*, 14211–14219.
11. Lin, Z.-T.; Gu, J.; Li, C.-H.; Lee, T. R.; Xie, L.; Chen, S.; Jiang, S.; Yuan, Y.; Hong, X.; Wang, H.; Wang, D.; Wang, X.; Jiang, G.-B.; Heon, M.; Wu, T. A Nanoparticle-Decorated Biomolecule-Responsive Polymer Enables Robust Signaling Cascade for Biosensing. *Adv. Mater.* **2017**, *29*, 1702090.
12. Salorinne, K.; Man, R. W. Y.; Li, C.-H.; Taki, M.; Nambo, M.; Crudden, C. M. Water-Soluble *N*-Heterocyclic Carbene-Protected Gold Nanoparticles: Size-Controlled Synthesis, Stability, and Optical Properties. *Angew. Chem. Int. Ed.* **2017**, *56*, 6198–6202.
13. Tarkington, L.; Bryan, W. W.; Kolhatkar, T.; Markle, N.; Raska, E.; Cubacub, M. M.; Rittikulsittichai, S.; Li, C.-H.; Chen, Y.-T.; Jamison, A. C.; Lee, T. R. Magnetic Microorganisms: Using Chemically Functionalized Magnetic Nanoparticles to Observe and Control Paramecia. *J. Chem. Educ.* **2017**, *94*, 85–90.
14. Huang, C.-J.; Chu, S.-H.; Li, C.-H.; Lee, T. R. Surface Modification with Zwitterionic Cysteine Betaine for Nanoshells-Assisted Near-Infrared Plasmonic Hyperthermia. *Colloids Surf. B* **2016**, *145*, 291–300.
15. Li, C.-H.; Li, M.-C.; Liu, S.-P.; Jamison, A. C.; Lee, D.; Lee, T. R.; Lee, T.-C. Plasmonically Enhanced Photocatalytic Hydrogen Production from Water: The Critical Role of Tunable Surface Plasmon Resonance from Gold-Silver Nanoshells. *ACS Appl. Mater. Interfaces* **2016**, *8*, 9152–9161.
16. Huang, C.-J.; Chu, S.-H.; Wang, L.-C.; Li, C.-H.; Lee, T. R. Bio-Inspired Zwitterionic Surface Assembly with Robust Photostability and Fouling Resistance. *ACS Appl. Mater. Interfaces* **2015**, *7*, 23776–23786.
17. Khantamat, O.; Li, C.-H.; Yu, F.; Jamison, A. C.; Shih, W.-C.; Cai, C.; Lee, T. R. Gold Nanoshell-Decorated Silicone Surfaces for the NIR Photothermal Destruction of Pathogenic Bacterium *E. faecalis*. *ACS Appl. Mater. Interfaces* **2015**, *7*, 3981–3993.
18. Zeng, J.; Zhao, F.; Li, M.; Li, C.-H.; Lee, T. R.; Shih, W.-C. Morphological Control and Plasmonic Tuning of Nanoporous Gold Nanoparticles by Surface Modifications. *J. Mater. Chem. C* **2015**, *3*, 247–252.

19. Li, C.-H.; Jamison, A. C.; Rittikulsittichai, S.; Lee, T.-C.; Lee, T. R. In-Situ Growth of Hollow Gold-Silver Nanoshells within Porous Silica Offers Tunable Plasmonic Extinctions and Enhanced Colloidal Stability. *ACS Appl. Mater. Interfaces* **2014**, *6*, 19943–19950.
20. Zeng, J.; Zhao, F.; Qi, J.; Li, Y.; Li, C.-H.; Yao, Y.; Lee, T. R.; Shih, W.-C. Internal and External Morphology-Dependent Plasmonic Resonance in Monolithic Nanoporous Gold Nanoparticles. *RSC Adv.* **2014**, *4*, 36682–36688.
21. Lee, F.-Y.; Yang, K.-Y.; Wang, Y.-C.; Li, C.-H.; Lee, T. R., Lee, T.-C. Electrochemical Properties of An AgInS<sub>2</sub> Photoanode Prepared Using Ultrasonic-Assisted Chemical Bath Deposition. *RSC Adv.* **2014**, *4*, 35215–35223.
22. Zhao, F.; Zeng, J.; Arnob, M. M. P.; Sun, P.; Qi, J.; Motwani, P.; Gheewala, M.; Li, C.-H., Paterson, A.; Strych, U.; Raja, B.; Willson, R. C.; Wolfe, J. C.; Lee, T. R.; Shih, W.-C. Monolithic NPG Nanoparticles with Large Surface Area, Tunable Plasmonics, and High-Density Internal Hot-Spots. *Nanoscale* **2014**, *6*, 8199–8207.
23. Lee, H. J.; Jamison, A. C.; Yuan, Y.; Li, C.-H.; Rittikulsittichai, S.; Rusakova, I.; Lee, T. R. Robust Carboxylic Acid-Terminated Organic Thin Films and Nanoparticle Protectants Generated from Bidentate Alkanethiols. *Langmuir* **2013**, *29*, 10432–10439.

### Invited Talks

Dept. of Chemical Engineering Seminar, National Cheng Kung University, Taiwan	2021
2021 Chemistry National Meeting, National Central University, Taiwan	2021
2020 Bioorganic Division Conference, Taiwan	2020
2 <sup>nd</sup> International Conference on Nanoscience and Nanotechnology, India	2019
1 <sup>st</sup> International Symposium on Sustainable Chemistry and Environmental Health Science, Taiwan	2019
Dept. of Chemistry Seminar, National Central University, Taiwan	2019
4 <sup>th</sup> Joint Conference between KMU and Keio University, Taiwan	2019
Dept. of Chemical and Materials Engineering Seminar, National Kaohsiung University of Science and Technology, Taiwan	2019
Dept. of Chemistry Seminar, Soochow University, Taiwan	2019
3 <sup>rd</sup> International Conference on Recent Advances in Material Chemistry, India	2019
Dept. of Chemistry Seminar, National Dong Hwa University, Taiwan	2018

### Activities and Affiliations

University of Houston Chemistry Graduate Student Council Treasurer	2012 – 2013
American Chemical Society	2013 – present
Canadian Chemical Society	2017 – present
Chinese Chemical Society	2018 – present