

CURRICULUM VITAE

Chin-Fa Lee (李進發)

Department of Chemistry,
National Chung Hsing University,
Taichung, Taiwan 402

Tel. (886)-4-2284-0411 (Ext. 810) Fax (886)-4-2286-2547 E-mail: cfalee@dragon.nchu.edu.tw

Brief Pertinent Biography:

Date of Birth: February 2, 1975

Married with two sons

Education

B.Sc.	Tam-Kang University	1997
Ph.D.	National Taiwan University	2002

Positions Held:

Director, Instrument Center	National Chung Hsing University	2023-present
Lifetime Distinguished Professor	National Chung Hsing University	2020-present
Chairman (Chemistry Department)	National Chung Hsing University	2019-present
Distinguished Professor	National Chung Hsing University	2016-2020
Professor	National Chung Hsing University	2014-present
Associate Professor	National Chung Hsing University	2011-2014
Assistant Professor	National Chung Hsing University	2008-2011
Postdoctoral Fellow	University of Edinburgh (with Leigh, D. A.)	2005-2007
Postdoctoral Associate	Yale University (with Hatwig, J. F.)	2003-2004
Postdoctoral Researcher	Institute of Chemistry, Academia Sinica	2002-2003

Honors

Chairman, 2024 International Organic and Bioorganic Symposium, 2024
Organizer, New Organosulfur Chemistry at Pacificchem, 2021
Asian Core Program Lectureship Award (Korea), 2016
Asian Core Program Lectureship Award (Hong Kong), 2016
Organizer, New Organosulfur Chemistry at Pacificchem, 2015
The Thieme Chemistry Journals Award, Thieme Chemistry, Germany, 2014
Outstanding Young Chemist Award, Chemical Society located in Taipei, 2013
Asian Core Program Lectureship Award, 2013
Asian Core Program Lectureship Award, 2012
Distinguished Teaching Award II, National Chung Hsing University, 2012
Golden-Jade Fellow, Kenda Foundation, Taiwan, 2011
Outstanding Research Achievement, National Chung Hsing University, 2011

Lectures

More than 23 invited international conference lectures.

Publications

More than 56 scientific papers.

Current Research Interests

Transition metal catalysis, supramolecular chemistry, organic and materials chemistry.

Patents

Three patents

PUBLICATION LIST

1. Chang Liao, N.-C.; Basha, R. S.; Shih, B.-H.; Liu, C.-C.; Wang, M.-H.; Lin, P.-H.*; Lee, C.-F.* "Copper cluster complex-catalyzed C–S bond formation" *Catal. Sci. Technol.* **2024**, *14*, 6609–6620.
2. Chen, Z.-W.; Bai, R.; Annamalai, P.; Badsara, S. S.*; Lee, C.-F.* "Zinc-Catalyzed N-Aroylation of Sulfoximines with Carboxylic Acids" *Chem. Asian J.* **2024**, *19*, 202400780
3. Hsia, Y.-T.; Lu, Y.-L.; Bai, R.; Badsara, S. S.; Lee, C.-F.* "Palladium-catalyzed synthesis of 2,3-disubstituted indoles via arylation of *ortho*-alkynylanilines with arylsiloxanes" *Org. Biomol. Chem.* **2023**, *21*, 7602-7610.
4. Chen, W.-C.; Bai, R.; Cheng, W.-L.; Peng, C.-Y.; Reddy, D. M.; Badsara, S. S.; Lee, C.-F.* "Base-mediated chalcogenoaminative annulation of 2-alkynylanilines for direct access to 3-sulphenyl/selenyl-1H-indoles" *Org. Biomol. Chem.* **2023**, *21*, 3002-3013.
5. Chen, Z.-W.; Pratheepkumar, A.; Bai, R.; Hu, Y.-Y.; Badsara, S. S.*; Huang, K.-W.; Lee, C.-F.* "Cesium Carbonate-catalyzed Synthesis of Phosphorothioates via S-phosphination of Thioketones" *Chem. Commun.* **2022**, *58*, 11001-11004.
6. Shen, B.-R.; Pratheepkumar, A.; Bai, R.; Badsara, S. S.; Lee, C.-F.* "Blue LED-Mediated Syntheses of Arylazo Phosphine Oxides and Phosphonates via N–P Bond Formation" *Org. Lett.* **2022**, *24*, 5988-5993.
7. Shen, B.-R.; Pratheepkumar, A.; Bai, R.; Lee, C.-F.* "Blue LED-Promoted Syntheses of Phosphorothioates and Phosphorodithioates" *J. Org. Chem.* **2022**, *87*, 8858-8870.
8. Chen, Z.-W.; Bai, R.; Pratheepkumar, A.; Badsara, S. S.; Lee, C.-F. "The journey of C–S bond formation from metal catalysis to electrocatalysis" *New J. Chem.* **2022**, *46*, 15-38.
9. Pratheepkumar, A.; Liu, K.-C.; Badsara, S. S.; Lee, C.-F.* "Carbon-Sulfur Bond Constructions: From Transition-Metal Catalysis to Sustainable Catalysis" *Chem. Rec.* **2021**, *21*, 3674-3688.
10. Wang, S.-F.; Li, C.-E.; Liu, Y.-C.; Reddy, D. M.; Basha, R. S. "PalladiumCatalyzed Decarbonylative Thioetherification of 2-Pyridyl Thioesters" *Asian J. Org. Chem.* **2020**, 1826-1833.
11. Liu, Y.-C.; Reddy, D. M.; Chen, X.-A.; Shieh, Y.-C.; Lee, C.-F.* "Blue LED-Promoted Oxathiacetalization of Aldehydes and Ketones" *Eur. J. Org. Chem.* **2020**, 2542-2552.
12. Liu, Y.-C.; Reddy, D. M.; Chen, X.-A.; Shieh, Y.-C.; Lee, C.-F.* "Blue LED-Promoted Oxathiacetalization of Aldehydes and Ketones" *Eur. J. Org. Chem.* **2020**, 2542-2552.
13. Li, C.-Y.; Liu, Y.-C.; Li, Y.-X.; Reddy, D. M.; Lee, C.-F.* "Electrochemical Dehydrogenative Phosphorylation of Thiols" *Org. Lett.* **2019**, *21*, 7833-7836.
14. Shih, B.-H.; Basha, R. S.; Lee, C.-F.* "Nickel-Catalyzed Cross-Coupling of Aryl Redoxactive Esters with Aryl Zinc Reagents" *ACS Catal.* **2019**, *9*, 8862.
15. Shieh, Y.-C.; Du, K.; Xue, Y.-J.; Shih, B.-H.; Basha, R. S. Lee, C.-F.* "Syntheses of thioethers and selenide ethers from anilines" *J. Org. Chem.* **2019**, *84*, 6223-6231.
16. Du, K.; Wang, S.-C.; Basha, R. S.; Lee, C.-F.* "Visible-Light Photoredox-Catalyzed Thioacetalization of Aldehydes Under Metal-Free and Solvent-Free Conditions" *Adv. Synth. Catal.* **2019**, *361*, 1597-1605. [Front Cover Picture]
17. Luo, Y.-G.; Basha, R. S.; Reddy, D. M.; Xue, Y.-J.; Chen, T.-H.; Lee, C.-F.* "Palladium-Catalyzed Synthesis of 2,3-Diaryl-N-methyl Indoles from *ortho*-Alkynylanilines and Aryl Pinacol Boronic Esters" *Org. Lett.* **2018**, *20*, 6872-6876.
18. Wang, F.; Yang, P.; Choi, J.-s. ; Antovski, P.; Zhu, Y.; Xu, X.; Kuo, T.-H.; Lin, L.-E.; Kim, D. N. H.; Huang, P.-C.; Xu, H.; Lee, C.-F.; Wang, C.*; Hsu, C.-C.*; Chen, K.*; Weiss, P. S.*; Tseng, H.-R.* "Cross-Linked Fluorescent Supramolecular Nanoparticles for Intradermal

- Controlled Release of Antifungal Drug-A Therapeutic Approach for Onychomycosis" *ACS Nano* **2018**, *12*, 6851-6859.
19. Lee, C.-F.*; Basha, R. S.; Badsara, S.-S. "Engineered C-S Bond Construction" *Top. Curr. Chem.* **2018**, *376*, 25. <https://doi.org/10.1007/s41061-018-0203-6>.
 20. Basha, R. S.; Chen, C.-W.; Reddy, D. M.; Lee, C.-F.* "Iodine-Mediated Direct Generation of *o*-Quinone Methides at Room Temperature: A Facile Protocol for the Synthesis of *ortho*-Hydroxy Benzyl Thioethers" *Chem. Asian J.* **2018**, *13*, 2475-2483. [Special Issue: Homogeneous Catalysis from Young Investigators in Asia]
 21. Jhuang, H.-S.; Liu, Y.-W.; Reddy, D. M.; Tzeng, Y.-Z.; Lin, W.-Y.*; Lee, C.-F.* "Microwave assisted synthesis of thioesters from aldehydes and thiols in water" *J. Chin. Chem. Soc.* **2018**, *65*, 24-27. [Special Issue in Honor of Prof. Tien-Yau Luh's 70th Birthday].
 22. Son, Y.; Kim, H.-S.; Lee, J.-H.; Jang, J.; Lee, C.-F.*; Lee, S.* "Nickel-catalyzed decarboxylative coupling of an alkynyl carboxylic acid with aryl iodides" *Tetrahedron Lett.* **2017**, *58*, 1413-1416.
 23. Chen, C.-W.; Chen, Y.-L.; Reddy, D. M.; Du, K.; Li, C.-E.; Shih, B.-H.; Xue, Y.-J.; Lee, C.-F.* "CuI/oxalic diamide-catalyzed cross-coupling of thiols with aryl bromides and aryl chlorides" *Chem.-A Eur. J.* **2017**, *23*, 10087-10091.
 24. Reddy, D. M.; Wang, S.-C.; Du, K.; Lee, C.-F.* "Palladium-catalyzed *ortho*-C-H arylation of acetophenone oxime ethers with aryl pinacol boronic esters" *J. Org. Chem.* **2017**, *82*, 10070-10076.
 25. Chen, T.-H.; Reddy, D. M.; Lee, C.-F.* "A palladium-catalyzed oxidative cross-coupling reaction between aryl pinacol boronates and *H*-phosphonates in ethanol" *RSC Adv.* **2017**, *7*, 30214-30220.
 26. Hsu, W.-C.; Li, C.-E.; Lee, C.-F.* "Para-selective C-H thioetherification" *Asian J. Org. Chem.* **2017**, *6*, 1667-1673.
 27. Lu, S.-Y.; Badsara, S. S.; Wu, Y.-C.; Reddy, D. M.; Lee, C.-F.* "CuCl/TBHP catalyzed synthesis of amides from aldehydes and amines in water" *Tetrahedron Lett.* **2016**, *57*, 633-636.
 28. Hsieh, P.-A.; Badsara, S. S.; Tsai, C.-H.; Reddy, D. M.; Lee, C.-F.* "Peracetic acid mediated sp² C-H selenation of arenes" *Synlett* **2016**, *27*, 1557-1562.
 29. Tsai, C.-H.; Reddy, D. M.; Hsieh, P.-A.; Liu, Y.-C.; Kandasamy, M.; Lin, W.-Y.*; Lee, C.-F.* "PIFA-mediated synthesis of acysulfenic acid alkylesters and benzoyl alkyl disulfides from thioacids" *Synthesis* **2016**, *48*, 4459-4464.
 30. Tan, C. M.; Li, C.-H.; Tsao, N.-W.; Su, L.-W.; Lu, Y.-T.; Chang, S. H.; Lin, Y. Y.; Liou, J.-C.; Hsieh, L.-C.; Yu, J.-Z.; Sheue, C.-R.; Wang, S.-Y.; Lee, C.-F.; Yang, J.-Y.* "Phytoplasma SAP11 alters 3-isobutyl-2-methoxypyrazine biosynthesis in *Nicotiana benthamiana* by suppressing NbOMT1" *J. Exp. Bot.* **2016**, *67*, 4415-4425.
 31. Jhuang, H.-S.; Reddy, D. M.; Chen, T.-H.; Lee, C.-F.* "DTBP/TBHP-promoted hydroacylation of unactivated alkenes" *Asian J. Org. Chem.* **2016**, *5*, 1452-1456.
 32. Chen, Y.-A.; Badsara, S.-S.; Tsai, W.-T.; Lee, C.-F.* "Microwave-Assisted Copper-Catalyzed Cross-Coupling Reaction of Thiols with Aryl Iodides in Water" *Synthesis* **2015**, *47*, 181-186.
 33. Liu, Y.-W.; Badsara, S.-S.; Liu, Y.-C.; Lee, C.-F.* "K₂S₂O₈/I₂ promoted syntheses of α -thio- β -dicarbonyl compounds via oxidative C-S coupling reactions under transition metal-free and solventfree conditions" *RSC Adv.* **2015**, *5*, 44299-44305.
 34. Tsai, W.-T.; Lin, Y.-Y.; Chen, Y.-A.; Lee, C.-F.* "Ligand-Free Copper-Catalyzed Cross-Coupling Reaction of Alkynes with Aryl Iodides and Vinyl Halides" *Synlett* **2014**, *25*, 443-447.
 35. Huang, Y.-T.; Lu, S.-Y.; Yi, C.-L.; Lee, C.-F.* "Iron-Catalyzed Synthesis of Thioesters From Thiols and Aldehydes in Water" *J. Org. Chem.* **2014**, *79*, 4561-4568.

36. Huang, Y.-T.; Tsai, W.-T.; Badsara, S.-S.; Lee, C.-F.* "Copper-Catalyzed Cross-Coupling Reaction of Thiols with Aryl Iodides under Ligand-Free Conditions" *J. Chin. Chem. Soc.* **2014**, *61*, 967-974. [Invited Paper]
37. Badsara, S.-S.; Liu, Y.-C.; Hsieh, P.-A.; Zeng, J.-W.; Lu, S.-Y.; Liu, Y.-W.; Lee, C.-F.* "Metal-free sp³ C-H functionalization: a novel approach for the syntheses of selenide ethers and thioesters from methyl arenes" *Chem. Commun.* **2014**, *50*, 11374-11377.
38. Badsara, S.-S.; Chan, C.-C.; Lee, C.-F.* "Transition-Metal-Free Syntheses of Pyridine-Containing Thioethers Through Two-Fold C-S Bond Formation" *Asian J. Org. Chem.* **2014**, *3*, 1197-1203.
39. Liou, J.-C.; Badsara, S.-S.; Lee, C.-F.* "Syntheses of selenoesters through C-H selenation of aldehydes with diselenides under metal-free and solvent-free conditions" *RSC Adv.* **2014**, *4*, 41237-41244.
40. Lee, C.-F.*; Liu, Y.-C.; Badsara, S. S. "Transition-Metal-Catalyzed C-S Bond Coupling Reaction" *Chem. Asian J.* **2014**, *9*, 706-722. [Invited Focus Review]
41. Zeng, J.-W.; Liu, Y.-C.; Xie, B.-A.; Huang, Y.-T.; Yi, C.-L.; Badsara, S. S.; Lee, C.-F.* "Metal-Free Cross-Coupling Reaction of Aldehydes with Disulfides By Using DTBP as an Oxidant in Solvent-Free Conditions" *Green Chem.* **2014**, *16*, 2644-2652.
42. Liu, Y.-C.; Lee, C.-F.* "N-Chlorosuccinimide-promoted synthesis of thiophosphates from thiols and phosphonates under mild conditions" *Green Chem.* **2014**, *16*, 357-364.
43. Yi, C.-L.; Huang, Y.-T.; Lee, C.-F.* "Synthesis of thioesters through copper-catalyzed coupling of aldehydes with thiols in water" *Green Chem.* **2013**, *15*, 2476-2484. [Top 10 most-accessed articles July-September 2013:\(http://blogs.rsc.org/gc/2013/12/06/top-10-most-accessed-articles-july%e2%80%93september-2013/\)](http://blogs.rsc.org/gc/2013/12/06/top-10-most-accessed-articles-july%e2%80%93september-2013/)
44. Liu, T.-J.; Yi, C.-L.; Chan, C.-C.; Lee, C.-F.* "Manganese-Catalyzed Cross-Coupling of Thiols with Aryl Iodides" *Chem. Asian J.* **2013**, *8*, 1029-1034.
45. Cheng, C.-H.; Ramesh, C.; Kao, H.-L.; Wang, Y.-J.; Chan, C.-C.; Lee, C.-F.* "Synthesis of Aryl Thioethers Through the NCS-Promoted Cross-Coupling Reaction of Thiols with Grignard Reagents" *J. Org. Chem.* **2012**, *77*, 10369-10374.
46. Cheng, J.-H.; Yi, C.-L.; Liu, T.-J.; Lee, C.-F.* "Highly regioselective synthesis of aryl chalcogenides through C-H functionalization of arenes" *Chem. Commun.* **2012**, *48*, 8440-8442.
47. Lin, Y.-Y.; Wang, Y.-J.; Lin, C.-H.; Cheng, J.-H.; Lee, C.-F.* "Synthesis of Alkenyl Sulfides Through the Iron-Catalyzed Cross-Coupling Reaction of Vinyl Halides with Thiols" *J. Org. Chem.* **2012**, *77*, 6100-6106.
48. Kao, H.-L.; Lee, C.-F.* "Efficient Copper-Catalyzed S-Vinylation of Thiols with Vinyl Halides" *Org. Lett.* **2011**, *13*, 5204-5207.
49. Ballesteros, B.; Faust, T. B.; Lee, C.-F.; Leigh, D. A.*; Muryn, C. A.; Pritchard, R. G.; Schultz, D.; Teat, S. J.; Timco, G. A.; Winpenny, R. E. P.* "Synthesis, Structure, and Dynamic Properties of Hybrid Organic-Inorganic Rotaxanes" *J. Am. Chem. Soc.* **2010**, *132*, 15435-15444.
50. Chen, C.-K.; Chen, Y.-W.; Lin, C.-H.; Lin, H.-P.*; Lee, C.-F.* "Synthesis of CuO on mesoporous silica and its applications for coupling reactions of thiols with aryl iodides" *Chem. Commun.* **2010**, *46*, 282-284.
51. Wu, J.-R.; Lin, C.-H.; Lee, C.-F.* "Iron-catalyzed thioetherification of thiols with aryl iodides" *Chem. Commun.* **2009**, 4450-4452.
52. Lee, C.-F.; Leigh, D. A.*; Pritchard, R. G.; Schultz, D.; Teat, S. J.; Timco, G. A.; Winpenny, R. E. P.* "Hybrid Organic-Inorganic Rotaxanes and Molecular Shuttles" *Nature* **2009**, *458*, 314-318.

53. Serreli, V.; Lee, C.-F.; Kay, E. R.; Leigh, D. A.* "A Molecular Information Ratchet" *Nature* **2007**, *445*, 523-527.
54. Chou, C.-M.; Chen, W.-Q.; Chen, J.-H.; Lin, C.-L.; Tseng, J.-C.; Lee, C.-F.; Luh, T.-Y.* "Convergent/Divergent Synthesis and Photophysical Studies of Alternating Benzene-Furan Oligoaryls from Substituted Propargylic Dithioacetals" *Chem. Asian J.* **2006**, *1-2*, 46-55.
55. Lee, C.-F.; Liu, C.-Y.; Song, H.-C.; Luo, S.-J.; Tseng, J.-C.; Tso, H.-H.; Luh, T.-Y.* "Bidirectional iterative synthesis of alternating benzene furan oligomers towards molecular wires" *Chem. Commun.* **2002**, 2824-2825.
56. Zhang, L.-Z.; Chen, C.-W.; Lee, C.-F.; Wu, C.-C.*; Luh, T.-Y.* "Non-amine-based Furan-containing Oligoaryls as Efficient Transporting Materials" *Chem. Commun.* **2002**, 2336-2337.
57. Lee, C.-F.; Yang, L.-M.; Hwu, T.-Y.; Feng, A.-S.; Tseng, J.-C.; Luh, T.-Y.* "One-Pot Synthesis of Substituted Furans and Pyrroles from Propargylic Dithioacetals. New Annulation Route to Highly Photoluminescent Oligoaryls" *J. Am. Chem. Soc.* **2000**, *122*, 4992-4993.
58. Tseng, H.-R.; Lee, C.-F.; Yang, L.-M.; Luh, T.-Y.* "Umpolung of the Carbon-Sulfur Bonds. Novel Synthesis of Substituted Allenes from Propargylic Dithioacetals" *J. Org. Chem.* **1999**, *64*, 8582-8587.

Patents

1. Luh, T.-Y.; Zhang, L.; Lee, C.-F.; Wu, C.-C.; Chen, C.-W. "Furan-Containing Hole Transporting Materials," **Taiwan** 1254071, **2006**, 2006/05/01-2025/05/21
2. "Furan-Containing Hole Transporting Materials", Luh, T.-Y.; Zhang, L.; Lee, C.-F.; Wu, C.-C.; Chen, C.-W. **U. S. Patent** 7,128,983 B2, October 31, 2006.
3. "Furan-Containing Hole Transporting Materials ", Luh, T.-Y.; Zhang, L.; Lee, C.-F.; Wu, C.-C.; Chen, C.-W. **Jap Patent** 4,834,286, September 30, 2011.