

CURRICULUM VITAE for Dr. Han Sen SOO

Contact Information

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21 Nanyang Link, SPMS-CBC-05-03

Division of Chemistry and Biological Chemistry

School of Physical and Mathematical Sciences

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Employment History

Associate Professor (1 March 2020 -), Nanyang Assistant Professor (1 April 2013 – 29 February 2020), Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, September 2012 –

- Independently taught CM 9091: Industrial and Environmental Chemistry (Jan – May 2013 – 2020)
- Co-taught 17th & 18th SM2 CM1021: Basic Inorganic Chemistry (Aug – Nov 2013 & 2014)
- Co-taught CM 3021: Organometallic Chemistry (for Year 3; Aug – Nov 2015 – 2019)

Post-Doctoral Fellow, Physical Biosciences Division and Helios Solar Energy Research Center, Lawrence Berkeley National Laboratory, Berkeley, CA 2010 – 2012 (Heinz Frei)

- Development of integrated systems for artificial photosynthesis

Graduate Student Researcher and Instructor, Department of Chemistry, University of California, Berkeley, Berkeley, CA 2005 – 2009 (Christopher J. Chang)

- Thesis for Ph.D. “Small Molecule Activation, Group Transfer, and Redox Reactivity of Iron, Cobalt, and Manganese Centers with New First and Second Coordination Sphere Scaffolds”

Undergraduate Research Assistant, Massachusetts Institute of Technology, Cambridge, MA 1999 – 2003 (Christopher C. Cummins)

- Thesis for S.M. “Synthetic and Mechanistic Investigations on Tantalum, Molybdenum, and Copper Complexes Supported by Novel Enolate and Macrocyclic Ligands”

Education

Ph.D., Chemistry, University of California, Berkeley, December 2009

S.M., Chemistry, Massachusetts Institute of Technology, June 2003

S.B., Chemistry, Massachusetts Institute of Technology, June 2003

Publications

1. Tan, D.; Ng, Z. X.; Ganguly, R.; Li, Y.; Soo, H. S.* Mohamed, S.* García, F. Investigating the solid-state assembly of pharmaceutically-relevant N,N-dimethyl-O-thiocarbamates in the absence of labile hydrogen bonds, *CrystEngComm* **2020**, Accepted.
2. Wang, J.; Soo, H. S.*; García, F. Synthesis, properties, and catalysis of p-block complexes supported by bis(arylimino)acenaphthene ligands, *Commun. Chem.* **2020**, *3*, 113.
3. Chin, K. F.; Dokić, M.; Soo, H. S.* Photoelectrochemical cells for artificial photosynthesis: alternatives to water oxidation, *Trends Chem.* **2020**, *2*, 485 – 488.
4. Klejna, S.; Mazur, T.; Wlaźlak, E.; Zawal, P.; Soo, H. S.*; Szaciłowski, K. Halogen-containing semiconductors: From artificial photosynthesis to unconventional computing, *Coord. Chem. Rev.* **2020**, *415*, 213316.
5. Ng, A. Y. R.; Boruah, B.; Chin, K. F.; Modak, J. M.; Soo, H. S.* Photoelectrochemical cells for artificial photosynthesis: alternatives to water oxidation, *ChemNanoMat* **2020**, *6*, 185 – 203.
6. Gazi, S.; Dokić, M.; Chin, K. F.; Ng, P.; Soo, H. S.* Visible Light Driven Cascade Carbon-Carbon Bond Scission for Organic Transformations and Plastics Recycling, *Adv. Sci.* **2019**, *6*, 1902020.

7. Hong, Z.; Chong, W. K.; Ng, A. Y. R.; Li, M.; Ganguly, R.; Sum, T. C.; Soo, H. S.* Hydrophobic Metal Halide Perovskites for Visible-Light Photoredox C-C Bond Cleavage and Dehydrogenation Catalysis, *Angew. Chem. Int. Ed.* **2019**, *58*, 3456 – 3460.
8. Vu, M. D.; Das, M.; Guo, A.; Ang, Z.-E.; Đokić, M.; Soo, H. S.; Liu, X. W. Visible-Light Photoredox Enables Ketone Carbonyl Alkylation for Easy Access to Tertiary Alcohols, *ACS Catal.* **2019**, *9*, 9009 – 9014.
9. Ng, L. K.-S.; Tan, E. J.-C.; Goh, T. W.; Zhao, X.; Chen, Z.; Sum, T. C.; Soo, H. S.* Mesoporous SiO₂/BiVO₄/CuO_x Nanospheres for Z-Scheme, Visible Light Aerobic C-N Coupling and Dehydrogenation, *Appl. Mater. Today* **2019**, *15*, 192 – 202.
10. Hong, Z.; Tan, D.; John, R. A.; Tay, Y. K. E.; Ho, Y. K. T.; Zhao, X.; Sum, T. C.; Mathews, N.; Garcia, F.; and Soo, H. S.* Completely Solvent-Free Protocols to Access Phase-Pure, Metastable Metal Halide Perovskites and Functional Photodetectors from the Precursor Salts, *iScience* **2019**, *16*, 312 – 325.
11. Ho, X. L.; Das, S. P.; Ng, L. K.-S.; Ng, A. Y. R.; Ganguly, R.; Soo, H. S.* Cobalt Complex of a Tetraamido Macrocyclic Ligand as a Precursor for Electrocatalytic Hydrogen Evolution, *Organometallics* **2019**, *38*, 1397 – 1406.
12. Ho, X. L.; Shao, H.; Ng, Y. Y.; Ganguly, R.; Lu, Y.; Soo, H. S.* Visible Light Driven Hydrogen Evolution by Molecular Nickel Catalysts with Time-Resolved Spectroscopic and DFT Insights, *Inorg. Chem.* **2019**, *58*, 1469 – 1480.
13. Ng, Y. Y.; Tan, L. J.; Ng, S. M.; Chai, Y. T.; Ganguly, R.; Du, Y.; Yeow, E. K. L.; Soo, H. S.* Spectroscopic Characterization and Mechanistic Studies on Visible Light Photoredox Carbon–Carbon Bond Formation by Bis(arylimino)acenaphthene Copper Photosensitizers, *ACS Catal.* **2018**, *8*, 11277 – 11286.
14. Ghosh, D.; Febriansyah, B.; Gupta, D.; Ng, L. K.-S.; Xi, S.; Du, Y.; Baikie, T.; Dong, Z.; Soo, H. S.* Hybrid Nanomaterials with Single-Site Catalysts by Spatially Controllable Immobilization of Nickel Complexes via Photoclick Chemistry for Alkene Epoxidation, *ACS Nano*, **2018**, *12*, 5903 – 5912.
15. Đokić, M.; Soo, H. S.* Artificial Photosynthesis by Light Absorption, Charge Separation, and Multielectron Catalysis, *Chem. Commun.* **2018**, *54*, 6554 – 6572.
16. Lim, J. H.; Engelmann, X.; Corby, S.; Ganguly, R.; Ray, K.; Soo, H. S.* CH Activation and Nucleophilic Substitution in a Photochemically Generated High Valent Iron Complex, *Chem. Sci.* **2018**, *9*, 3992 – 4002.
17. Hasan, K.; Wang, J.; Pal, A. K.; Hierlinger, C.; Guerchais, V.; Soo, H. S.*; García, F.; Zysman-Colman, E., Bay-Region Functionalisation of Ar-BIAN Ligands and Their Use Within Highly Absorptive Cationic Iridium(III) Dyes, *Sci. Rep.* **2017**, *7*, 15520.
18. Gazi, S.; Đokić, M.; Moeljadi, A. M. P.; Ganguly, R.; Hirao, H.; Soo, H. S.* Kinetics and DFT Studies of Photoredox Carbon-Carbon Bond Cleavage Reactions by Molecular Vanadium Catalysts under Ambient Conditions, *ACS Catal.* **2017**, *7*, 4682 – 4691.
19. Wang, J.; Ganguly, R.; Li, Y.; Díaz, J.; Soo, H. S.*; García, F. Synthesis and the Optical and Electrochemical Properties of Indium(III) Bis(arylimino)acenaphthene Complexes, *Inorg. Chem.* **2017**, *56*, 7811 – 7820.
20. Thirumal, K.; Chong, W. K.; Xie, W.; Ganguly, R.; Muduli, S. K.; Sherburne, M.; Asta, M.; Mhaisalkar, S.; Sum, T. C.; Soo, H. S.; Mathews, N. Morphology-Independent Stable White-Light Emission from Self-Assembled Two-Dimensional Perovskites Driven by Strong Exciton–Phonon Coupling to the Organic Framework, *Chem. Mater.* **2017**, *29*, 3947 – 3953.
21. Gong, Y.; Wang, D. P.; Wu, R.; Gazi, S.; Soo, H. S.; Sritharan, T.; Chen, Z. New Insights into the Photocatalytic Activity of 3-D Core–Shell P25@Silica Nanocomposites: Impact of Mesoporous Coating, *Dalton Trans.* **2017**, *46*, 4994 – 5002.
22. Kee, J. W.; Shao, H.; Kee, C. W.; Lu, Y.; Soo, H. S.*; Tan, C. H. Mechanistic Insights for the Photoredox Organocatalytic Fluorination of Aliphatic Carbons by Anthraquinone Using Time-Resolved and DFT Studies, *Catal. Sci. Technol.* **2017**, *7*, 848 – 857.
23. Das, S. P.; Ganguly, R.; Li, Y.; Soo, H. S.* Nucleophilic reactivity and electrocatalytic reduction of halogenated organic compounds by nickel *o*-phenylenedioxamidate complexes, *Dalton Trans.* **2016**, *45*, 13556 – 13564.
24. Koh, T. M.; Thirumal, K.; Soo, H. S.*; Mathews, N. Multidimensional Perovskites: A Mixed Cation Approach Towards Ambient Stable and Tunable Perovskite Photovoltaics, *ChemSusChem*, **2016**, *9*, 2541 – 2558.
25. Shao, H.; Muduli, S. K.; Tran, D. P.; Soo, H. S.* Enhancing Electrocatalytic Hydrogen Evolution by Nickel Salicylaldehyde Complexes with Alkali Metal Cations in Aqueous Media, *Chem. Commun.* **2016**, *52*, 2948 – 2951.

26. Wang, J.; Ganguly, R.; Li, Y.; Díaz, J.; Soo, H. S.*; García, F. Multi-Step Solvent-Free Mechanochemical Route to Indium(III) Complexes, *Dalton Trans.* **2016**, *45*, 7941 – 7946.
27. Hong, Z.; Ong, D. Y.; Muduli, S. K.; Too, P. C.; Chan, G. H.; Tnay, Y. L.; Chiba, S.*; Nishiyama, Y.*; Hirao, H.*; Soo, H. S.* Understanding the Origins of Nucleophilic Hydride Reactivity of Sodium Hydride-Iodide Composite, *Chem. Eur. J.*, **2016**, *22*, 7108 – 7114 (featured as “hot paper”).
28. Kee, J. W.; Ng, Y. Y.; Kulkarni, S. A.; Muduli, S. K.; Xu, K.; Ganguly, R.; Lu, Y.; Hirao, H.; Soo, H. S.* Development of Bis(arylimino)acenaphthene (BIAN) Copper Complexes as Visible Light Harvesters for Potential Photovoltaic Applications, *Inorg. Chem. Front.* **2016**, *3*, 651 – 662.
29. Gazi, S.; Ng, W. K. H.; Ganguly, R.; Moeljadi, A. M. P.; Hirao, H.; Soo, H. S.* Selective photocatalytic C–C bond cleavage under ambient conditions with earth abundant vanadium complexes, *Chem. Sci.* **2015**, *6*, 7130 – 7142.
30. Muduli, A. K.; Wang, S.; Chen, S.; Ng, C. F.; Huan, A. C. H.; Sum, T. C.; Soo, H. S.* Mesoporous cerium oxide nanospheres for the visible-light driven photocatalytic degradation of dyes, *Beilstein J. Nanotechnol.* **2014**, *5*, 517 – 523.
31. Macnaughtan, M. L.; Soo, H. S.; Frei, H. Binuclear ZrOCo Metal-to-Metal Charge-Transfer Unit in Mesoporous Silica for Light-Driven CO₂ Reduction to CO and Formate, *J. Phys. Chem. C* **2014**, *118*, 7874 – 7885.
32. Agiral, A.; Soo, H. S.; Frei, H. Visible Light Induced Hole Transport from Sensitizer to Co₃O₄ Water Oxidation Catalyst across Nanoscale Silica Barrier with Embedded Molecular Wires, *Chem. Mater.* **2013**, *25*, 2264 – 2273.
33. Soo, H. S.; Agiral, A.; Bachmeier, A.; Frei, H. Visible Light-Induced Hole Injection into Rectifying Molecular Wires Anchored on Co₃O₄ and SiO₂ Nanoparticles, *J. Am. Chem. Soc.* **2012**, *134*, 17104 – 17116.
34. Soo, H. S.; Macnaughtan, M. L.; Weare, W. W.; Yano, J.; Frei, H. EXAFS Spectroscopic Analysis of Heterobinuclear TiOMn Charge-Transfer Chromophore in Mesoporous Silica, *J. Phys. Chem. C* **2011**, *115*, 24893 – 24905.
35. Soo, H. S.; Sougrati, M. T.; Grandjean, F.; Long, G. J. Chang, C. J. A Seven-Coordinate Iron Platform and its Oxo and Nitrene Reactivity, *Inorg. Chim. Acta* **2011**, *369*, 82 – 91.
36. Harris, T. D.; Soo, H. S.; Chang, C. J.; Long, J. R. A Cyano-Bridged Fe^{II}Re^{IV}(CN)₂ Cluster Incorporating Two High-Magnetic Anisotropy Building Units, *Inorg. Chim. Acta* **2011**, *369*, 91 – 96.
37. Soo, H. S.; Komor, A. C.; Iavarone, A. T.; Chang, C. J. A Hydrogen-Bond Facilitated Cycle for Oxygen Reduction by an Acid- and Base-Compatible Iron Platform, *Inorg. Chem.* **2009**, *48*, 10024 – 10035.
38. Demoin, D. W.; Pluth, M.; Soo, H. S.; Xu, Y. Dimethoxyphosphinoyl phenyl ketone *p*-tolylsulfonylethylhydrazone, *Acta Cryst. E* **2006**, *62*, 3551 – 3552.
39. Soo, H. S.; Figueroa, J. S.; Cummins, C. C. A Homoleptic Molybdenum(IV) Enolate Complex: Synthesis, Molecular and Electronic Structure, and NCN Group Transfer to Form a Terminal Cyanoimide of Molybdenum(VI), *J. Am. Chem. Soc.* **2004**, *126*, 11370 – 11376.
40. Soo, H. S.; Diaconescu, P. L.; Cummins, C. C. A Sterically Demanding Enolate Ligand: Tantalum Ligation and Pyridine Coupling, *Organometallics* **2004**, *23*, 498 – 503.

Patents

1. Soo, H. S.*; Gazi, S.; Dokic, M. Selective Carbon-Carbon Bond Cleavage by Earth Abundant Vanadium Compound Under Visible Light Photocatalysis, 10201500823Q SG PRV filed on 3 February 2015, PCT/SG2016/050056 PCT filed on 3 February 2016, 11201705500Q PCT-SG awarded on 12 November 2020, WO 2016/126207 published August 2016.
2. Thirumal, K.; Mhaisalkar, S.; Mathews, N.; Soo, H. S. Low-Dimensional Inorganic-Organic Hybrid Metal Halide Perovskites, 10201705690Y SG PRV filed on 11 July 2017, PCT/SG2018/050344 PCT filed on 11 July 2018, WO 2019/013709 published January 2019.

Awards

1. School of Physical and Mathematical Sciences Young Researcher Award 2019
2. Keynote Lectureship, Asian International Symposium for Outstanding Scientists, The Chemical Society of Japan, 2019
3. Nanyang Education Award (NEA) 2017/2018 – School
4. School of Physical and Mathematical Sciences Teaching Excellence Award 2016/2017
5. APA Prize for Young Scientists 2016, The Asian and Oceanian Photochemistry Association
6. Nanyang Assistant Professorship, Nanyang Technological University, 2013

7. Departmental Fellowship, Chemistry Department, U. C. Berkeley, 2007
8. Phi Beta Kappa Honors Society, Massachusetts Institute of Technology, 2003
 - Prestigious academic honor society for the most outstanding students in the liberal arts and sciences in the United States.
9. Alpha Chi Sigma Award, Massachusetts Institute of Technology, 2003
 - Outstanding achievement in scholarship, research, and service to the department.
10. Strem Prize, Massachusetts Institute of Technology, 2002, 2003
 - Awarded for the best undergraduate research presentation at the chemistry UROP symposium.
11. Overseas Merit Scholarship, Public Service Commission, Singapore, 1999 – 2003

Research Funding

1. **PI** for the Pfizer-only PIPS Grant “(Photo)electrocatalytic Dehydrogenative Cross-Coupling of (Hetero)arenes Paired with Electrocatalytic Reduction Reactions”; expiring Dec 2022.
2. **PI** for the A*STAR AME IRG Grant “High-Throughput Screening of Perovskites for Catalysis by Mechanochemistry and Machine Learning”; expiring Sep 2023.
3. **PI** for MOE Tier 1 Grant “Improving Photocatalysts That Recycle Microplastics to Fuels by Artificial Intelligence”; expiring Feb 2023.
4. **PI** for MOE Tier 1 Grant “(Hetero)arene C-H Activation and Umpolung Nucleophilic Substitution by High-Valent Iron on (Photo)electrochemical Cells”; expiring Feb 2021.
5. **PI** for the A*STAR AME IRG Grant “C-C bond activation with photoredox vanadium catalysts under flow conditions towards advanced fine chemicals and pharmaceutical manufacturing”; expiring Dec 2020.
6. Co-PI for the A*STAR AME IRG Grant “Novel porous materials for highly efficient CO₂ capture and catalytic conversion” together with Prof. Zhao Yanli as PI; expiring Jun 2020.
7. Co-PI for the A*STAR AME IRG Grant “Mechanochemical Approaches to Main Group Solid-State Photoredox Systems” together with Prof. Felipe Garcia as PI; expiring Jun 2021.
8. **PI** for MOE Tier 1 Grant “Molecular copper complexes as luminophores for affordable, energy-efficient, and ultra-bright organic light emitting diodes” in collaboration with Prof. Eli Zysman-Colman (University of St Andrews, UK); expiring Oct 2019.
9. **PI** for MOE Tier 1 Grant “Development of photocatalytic systems for H₂ evolution from seawater using Earth-abundant molecular components and solar energy”; expiring Sep 2018.
10. **PI** of collaboration with ICES (A*STAR) for seed funding under project “Development of multifunctional and microfluidic flow reactor for biomass lignin to chemicals by photodriven oxidative catalysis”; expiring Mar 2017.
11. **PI** of collaboration with Johnson Matthey Singapore for IGS student under project “Photocatalytic degradation of model pollutants in aqueous media”; expiring Jan 2018.
12. Co-PI of the NRF’s Campus for Research Excellence And Technological Enterprise (CREATE), the Singapore-Berkeley Initiative for Sustainable Energy (SINBERISE). Funding for starting a research programme in “Development of efficient photocatalysts for generation of solar fuels”; expiring Dec 2017.
13. **PI** of Nanyang Assistant Professorship; “Innovated photosynthesis by simultaneous CO₂ reduction and pollutant oxidation”; expiring Mar 2016.
14. **PI** for MOE Tier 1 Grant “Designing earth-abundant visible light absorbers for capturing solar energy”; expiring Mar 2016.
15. **PI** for NTU Start-Up Grant “Integrated renewable energy and environmental remediation strategies: Innovated photosynthesis using molecular catalysts grafted on nanomaterials”; expiring Sep 2015.

Conferences, Workshops, and Seminars

1. Soo, H. S.* Invited speaker at 9th Pacific Symposium on Radical Chemistry, Pacific Grove, California, USA, June 2019.
2. Soo, H. S.* 7th UK Solar Fuels Symposium, Cambridge, UK, March 2019.
3. Soo, H. S.*; Ng, Y. Y.; Chin, K. F.; Dokic, M.; Hong, Z.; Ng, L. K.-S.; Ng, A. Y. R.; Ho, X. L. Artificial Photosynthesis Faraday Discussion, Cambridge, UK, March 2019.
4. Soo, H. S.* **Keynote speaker** at Asian International Symposium for Outstanding Scientists, 99th Chemical Society of Japan Annual Meeting, Kobe, Japan, March 2019.
5. Ng, Y. Y.; Ho, X. L.; Hong, Z.; Ng, L. K.-S.; Dokic, M.; Chin, K.; Soo, H. S.* Gordon Research Conference on Inorganic Reaction Mechanisms, Galveston, Texas, USA, March 2019.

6. Soo, H. S.* Invited speaker at 9th Asian Biological Inorganic Chemistry Conference, Singapore, December 2018.
7. Soo, H. S.* Invited speaker at 7th Asia-Oceania Conference on Green and Sustainable Chemistry, Singapore, November 2018.
8. Soo, H. S.* Invited speaker at 43rd International Conference on Coordination Chemistry, Sendai, Japan, July 2018.
9. Soo, H. S.* Invited speaker at University of Edinburgh, Edinburgh, United Kingdom, June 2018.
10. Soo, H. S.* Invited speaker at University of St Andrews, St Andrews, United Kingdom, June 2018.
11. Soo, H. S.* Invited speaker at Korea-Taiwan-Japan Bioinorganic Chemistry Symposium, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea, May 2018.
12. Soo, H. S.* Invited speaker at Singapore-Japan Bilateral Meeting on Functional Materials Chemistry, Nanyang Technological University, Singapore, April 2018.
13. Soo, H. S.* Invited speaker at Technical University of Braunschweig, Braunschweig, Germany, April 2018.
14. Soo, H. S.* Invited presenter at ECOST-Bio, Erkner, Germany, April 2018.
15. Soo, H. S.* Invited speaker at Friedrich-Alexander University of Nurember-Erlangen, Erlangen, Germany, April 2018.
16. Soo, H. S.* Invited speaker at RIKEN, Tokyo, Japan, March 2018.
17. Soo, H. S.* Invited speaker at University of Tokyo, Tokyo, Japan, March 2018.
18. Soo, H. S.* Invited speaker at KU-NTU Joint International Symposium on Pharmaceutical Sciences, Fukuoka, Japan, March 2018.
19. Ng, Y. Y.; Wang, J.; Ho, X. L.; Lim, J. H.; Dokic, M.; Chin, K. F.; Soo, H. S.* Gordon Research Conference on Renewable Energy: Solar Fuels, Ventura, CA, USA, January 2018.
20. Soo, H. S.* Invited speaker at University of California, Berkeley, California, USA, January 2018.
21. Soo, H. S.* 4th Japan-Taiwan-Singapore-Hong Kong Quadrilateral Symposium on Coordination Chemistry, Hong Kong SAR, December 2017.
22. Soo, H. S.* Invited speaker at City University of Hong Kong, Hong Kong SAR, December 2017.
23. Soo, H. S.* Invited speaker at the University of Hong Kong, Hong Kong SAR, December 2017.
24. Ng, Y. Y.; Ho, X. L.; Dokic, M.; Chin, K.; Soo, H. S.* Invited speaker at 1st Singapore Japan Germany Trilateral Symposium on Precision Synthesis & Catalysis, Singapore, November 2017.
25. Soo, H. S.* Invited speaker at North Carolina State University, Raleigh, North Carolina, USA, November 2017.
26. Soo, H. S.* Invited speaker at University of California Los Angeles, Los Angeles, California, USA, November 2017.
27. Soo, H. S.* Invited speaker at Caltech, Pasadena, California, USA, November 2017.
28. Soo, H. S.* Invited speaker at University of British Columbia, Vancouver, Canada, November 2017.
29. Soo, H. S.* Invited speaker at Michigan State University, East Lansing, Michigan, USA, November 2017.
30. Soo, H. S.* Invited speaker at Dalian Institute of Chemical Physics, Dalian, China, October 2017.
31. Soo, H. S.* Invited speaker at Nankai University, Tianjin, China, October 2017.
32. Soo, H. S.* Invited speaker at Tsinghua University, Beijing, China, October 2017.
33. Ho, X. L.; Ng, Y. Y.; Wang, J.; Thirumal, K.; Dokic, M.; Chin, K.; Soo, H. S.* ChemComm Symposia on Energy Science and Materials, Beijing, Tianjin, and Dalian, China, October 2017.
34. Soo, H. S.* Invited speaker at University of Queensland, Brisbane, Australia, August 2017.
35. Soo, H. S.* Invited speaker at University of Sydney, Sydney, Australia, August 2017.
36. Soo, H. S.* Invited speaker at Monash University, Melbourne, Australia, July 2017.
37. Soo, H. S.* 6th Asian Conference on Coordination Chemistry, Melbourne, Australia, July 2017.
38. Soo, H. S.* Invited speaker at Kyushu University, Fukuoka, Japan, July 2017.
39. Lim, J. H.; Ho, X. L.; Ng, Y. Y.; Wang, J.; Dokic, M.; Gazi, S.; Soo, H. S.* Gordon Research Conference on Inorganic Reaction Mechanisms, Galveston, Texas, USA, March 2017.
40. Ng, Y. Y.; Wang, J.; Ho, X. L.; Gazi, S.; Lim, J. H.; Soo, H. S.* Invited speaker at 3rd International Conference on Molecular Functional Catalysis, Singapore, February 2017.
41. Soo, H. S.* Invited speaker at 11th International Symposium for Chinese Inorganic Chemists & 14th International Symposium for Chinese Organic Chemists, Singapore, December 2016.
42. Thirumal, K.; Ng, Y. Y.; Wang, J.; Shao, H.; Gazi, S.; Dokic, M.; García, F.; Soo, H. S.* Invited speaker and award winner at 9th Asian Photochemistry Conference, Singapore, December 2016.

43. Soo, H. S.* Invited speaker at NTU-Tokyo Institute of Technology Joint Workshop, Tokyo, Japan, November 2016.
44. Soo, H. S.* Invited speaker at 7th International Symposium on Catalysis and Fine Chemicals, Taipei, Taiwan, November 2016.
45. Soo, H. S.* Invited speaker at Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea, October 2016.
46. Hong, Z.; Ong, D. Y.; Shao, H.; Gazi, S.; Soo, H. S.* Invited speaker at ICCEOCA-11 and ARNCEOCA-2, Daejeon, South Korea, October 2016.
47. Soo, H. S.* Invited speaker at 3rd Japan-Taiwan-Singapore-Hong Kong Quadrilateral Symposium on Coordination Chemistry, Hsinchu, Taiwan, August 2016.
48. Soo, H. S.* Invited speaker at National Tsing Hua University, Taipei, Taiwan, August 2016.
49. Kee, J. W.; Ng, Y. Y.; Kulkarni, S. A.; Muduli, S. K.; Ganguly, R.; Lu, Y.; Wang, J.; Garcia, F.; Soo, H. S.* 42nd International Conference on Coordination Chemistry, Brest, France, July 2016.
50. Soo, H. S.* Invited speaker at Institute Colloquium at Humboldt-Universität zu Berlin, Berlin, Germany, June 2016.
51. Kee, J. W.; Ng, Y. Y.; Kulkarni, S. A.; Muduli, S. K.; Ganguly, R.; Lu, Y.; Wang, J.; Garcia, F.; Soo, H. S.* Gordon Research Conference on Inorganic Chemistry, Biddeford, Maine, USA, June 2016.
52. Shao, H.; Muduli, S. K.; Tran, P. D.; Soo, H. S.* American Chemical Society National Meeting, San Diego, CA, USA, March 2016.
53. Soo, H. S.*; Gazi, S.; Dokic, M. American Chemical Society National Meeting, San Diego, CA, USA, March 2016.
54. Kee, J. W.; Lu, Y.; Ganguly, R.; Soo, H. S.* American Chemical Society National Meeting, San Diego, CA, USA, March 2016.
55. Gazi, S.; Ng, W. K. H.; Ganguly, R.; Hirao, H.*; Soo, H. S.* American Chemical Society National Meeting, Boston, MA, USA, August 2015.
56. Kee, J. W.; Soo, H. S.* 7th Pacific Symposium on Radical Chemistry (PSRC-7), Singapore, July 2015
57. Gazi, S.; Soo, H. S.* 7th Pacific Symposium on Radical Chemistry (PSRC-7), Singapore, July 2015.
58. Soo, H. S.*; Muduli, S. K.; Gazi, S. Co-Chair, Symposium on Molecular Catalysis toward Sustainable Energy, Singapore, July 2014.
59. Soo, H. S.*; Muduli, S. K.; Gazi, S. International Conference on Coordination Chemistry, Singapore, July 2014.
60. Gazi, S.; Soo, H. S.* "Photochemical depolymerization of biomass with molecular catalysts," International Conference on Coordination Chemistry, Singapore, July 2014.
61. Soo, H. S.* 1st Nankai-NTU Bilateral Symposium on Nanochem, April 2014
62. Soo, H. S.; Frei, H. Gordon Research Conference/Seminar on Renewable Energy: Solar Fuels, Lucca, Italy, May 2012.
63. Agiral, A.; Soo, H. S.; Frei, H. American Chemical Society National Meeting, San Diego, CA, USA, March 2012.
64. Soo, H. S.; Agiral, A.; Frei, H. American Chemical Society National Meeting, Denver, CO, USA, August 2011.
65. Agiral, A.; Soo, H. S.; Frei, H. American Chemical Society National Meeting, Denver, CO, USA, August 2011.
66. Soo, H. S.; Frei, H. Gordon Research Conference/Seminar on Renewable Energy: Solar Fuels, Ventura, CA, USA, January 2011.
67. Soo, H. S.; Bachmeier, A.; Jiao, F.; Frei, H. Satellite Meeting of 15th International Congress of Photosynthesis, Singapore, August 2010.
68. Chang, C. J.; Harman, W. H.; Soo, H. S. American Chemical Society National Meeting, Chicago, IL, USA, March 2007.
69. Soo, H. S.; Cummins, C. C. American Chemical Society National Meeting, Atlanta, GA, USA, March 2006.

Service

1. Director-Designate of CBC's Master of Science in Chemical Sciences and Instrumentation 2019 -
2. Coordinator of CBC's undergraduate outreach program. Participated and presented in over 50 events from 2012 - 2018.
3. Coordinator of CBC's final year projects 2015 - 2018

4. Member of MOE Syllabus Development Committee (SDC) January 2014 to December 2016.
5. Member of focus group discussion on science, technology, engineering, and mathematics (STEM) at MOE in March 2015.
6. Member of over 25 theses defenses, over 30 qualifying examinations for Ph.D. candidates, and examiner of over 60 final year projects.
7. Reviewer for 19 different journals (including *Nature Communications*, *Advanced Materials*, *Chemical Science*)
8. Reviewer of research grants (including NTU, Ministry of Education Singapore, US Department of Energy Basic Energy Sciences)
9. Organizing committee member of 9 conferences/workshops in Singapore (including 2 as Co-Chair)

Mentorship

- 7 post-doctoral fellows
- 9 Ph.D. students
- 15 final year project students
- 12 URECA students
- 10 C. N. Yang scholars
- 26 summer research students
- 21 exchange students