



<b>Academic Appointments &amp; Education</b>	Distinguished Professor	National Taiwan University	2024–present
	Professor	Department of Chemical Engineering National Taiwan University	2021–present
	Professor (Joint Appointment)	International Graduate Program of Molecular Science and Technology National Taiwan University	2022–present
	Associate Professor	Department of Chemical Engineering National Taiwan University	2017–2021
	Assistant Professor	Department of Chemical Engineering National Taiwan University	2013–2017
	Postdoc	School of Chemistry & Biochemistry Georgia Institute of Technology <i>Advisor: Prof. Seth Marder</i>	2012–2013
	PhD	School of Chemical & Biomolecular Engineering Georgia Institute of Technology <i>Advisors: Profs. Sankar Nair and Christopher Jones</i>	2008–2012
	MS	Institute of Applied Mechanics National Taiwan University	2004–2006
	BS	Department of Chemical Engineering National Taiwan University	2000–2004

- Research Interests**
- Metal-organic framework (MOF) membranes
  - Membrane gas separations
  - CO<sub>2</sub> capture
  - Pervaporation

- Awards, Honors, Editorial Boards**
- Professor Wei-Ming Lu Innovation Teaching Award, *Taiwan Institute of Chemical Engineers* 2024
  - Fan-Tsan Chen Lectureship, *National Taiwan University* 2024
  - Professor Tsai-Teh Lai Award, *Taiwan Institute of Chemical Engineers* 2023
  - Outstanding Research Award, *National Science and Technology Council* 2023
  - Aspiration Award (SAA Fellow) in Excellent Academic Performance, *College of Engineering at National Taiwan University* 2022
  - Award for Exceptional Performance (2 times), *National Taiwan University* 2022, 2021
  - Excellent Teaching Award (7 times), *National Taiwan University* 2024, 2022, 2021,

2020, 2019, 2018,

2016

- LCY Young Faculty Award for Outstanding Academic Performance, *Taiwan Institute of Chemical Engineers* 2021
- Excellent Paper Award, *Taiwan Institute of Chemical Engineers* 2021
- Young Scholars' Creativity Award, *Foundation for Advancement of Outstanding Scholarship* 2021
- SCEJ Award for Outstanding Asian Researcher and Engineer, *The Society of Chemical Engineers, Japan* 2020
- Ta-You Wu Memorial Award, *Ministry of Science and Technology of Taiwan* 2020
- MOST Young Scholar Fellowship - The Columbus Program, *Ministry of Science and Technology of Taiwan* 2019–2023
- Excellent Mentor Award, *National Taiwan University* 2019
- Outstanding Mentor Award, *ChE at National Taiwan University* 2018
- Young Faculty Award, *Taiwan Institute of Chemical Engineers* 2016
- Outstanding Young Faculty Grants, *Ministry of Science and Technology of Taiwan* 2015–2018
- Young Scientist Award – Gold Award, *IUMRS-ICA* 2014
- Merit Pay Award for Distinguished Scholars, *Ministry of Science and Technology of Taiwan* 2013–2016

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**Editors &  
Professional  
Services**

- Chairperson of International Affairs Committee at TwIChE 2025-present
- Chairperson of User Executive Committee at National Synchrotron Radiation Research Center 2025-present
- Vice Chair of User Executive Committee at National Synchrotron Radiation Research Center 2024–2025
- Member of Council at Taiwan Membrane Society 2024-present
- Direct of NTU-MST Program, National Taiwan University 2023–present
- Member of Council at Taiwan Filtration and Separations Society 2023-present
- Editorial Board Member, *Journal of Membrane Science* 2023-present
- Vice Chair of Department of Chemical Engineering, National Taiwan University 2022–2023
- Guest Editor for *Separation and Purification Technology (16<sup>th</sup> ICIM Special Issue)* 2022
- Co-chair of 1<sup>st</sup> Taipei International Conference on Catalysis 2022
- Organizing committee of 16<sup>th</sup> International Conference of Inorganic Membranes (ICIM) 2022
- Co-organizer of 1<sup>st</sup> ChemE Workshop between KAIST and NTU 2022
- Board of Supervisor in Taiwan Membrane Society 2021-2023
- Early Career Editorial Board Member for *Journal of Membrane Science* 2021-2023

- Organizer of 3<sup>rd</sup> ChemE Symposium between Sogang University and NTU 2021
- Co-organizer of 1<sup>st</sup> ChemE Workshop between KAIST and NTU 2021
- Co-organizer of 3<sup>rd</sup> International Symposium on Porous Materials 2021
- Associate Editor for *Journal of the Taiwan Institute of Chemical Engineers* 2020–present
- Co-organizer of 2<sup>nd</sup> International Symposium on Porous Materials 2020 2020
- Co-organizer of Taiwan-Korea Symposium at Annual Meeting of KIChE 2019
- Co-organizer of 2<sup>nd</sup> ChemE Symposium between Sogang University and NTU 2019
- Co-organizer of 1<sup>st</sup> ChemE Symposium between Sogang University and NTU 2018
- Organizer of Taiwan-Korea Symposium at Annual Meeting of TwIChE 2018
- Secretary of International Workshop of Process Intensification (IWPI) 2018 2018
- Preparatory committee of International Symposium on Transport Phenomena and Applications (STPA) 2018
- Technical committee of International Conference of Advanced Materials Research 2018
- Co-PI of MOST project management: development of high-value added materials and technologies from waste and renewable resources in circular economy 2017-2021
- Session chair of the 12<sup>th</sup> World Filtration Congress 2016
- Session chair of the 9<sup>th</sup> Conference of Asian Membrane Society 2015
- Organizing committee member of International Conference on Nanospace Materials 2015
- Organizing committee member of Taiwan Symposium on Catalysis and Reaction Engineering 2015

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**Peer Reviewed  
Journal  
Articles**

95. Wang, H.-Y.; Chi, L.-T.; K.; Nam, K.J.; Chuang, C.-H.; Hsiao, L.-W.; Lee, J.S.; **Kang, D.-Y.\***, In Situ Synthesis of MIL-160 Tubular Membrane with High Selectivity for Gas Separation, *Ind. Eng. Chem. Res.*, **2024**, accepted.
94. Pal, A.; Suresh, S.; Khan, A.; Kuo, L.-W.; Chi, L.-T.; Ganguly, A.; Kao, C.-Y.; Sharma, M.K.; Wang, T.-S.A.; **Kang, D.-Y.\***; Lin, Z.-H.\*, Metal-organic frameworks as thermocatalysts for hydrogen peroxide generation and environmental antibacterial applications, *Sci. Adv.*, **2024**, accepted.
93. Nam, K.J.; Mohamed, A.M.O.; Seong, J.; An, H.; **Kang, D.-Y.\***; Economou, I.G.\*; Lee, J.S.\*; Cobalt-Based ZIF Composite Membranes: In Situ Defect Engineering for Enhanced Water Stability and Gas Separation, *Small*, **2024**, 2409515.
92. Han, P.-C.; Chuang, C.-H.; Lin, S.-W.; Xiang, X.; Wang, Z.\*; Kuzumoto, M.; Tokuda, S.; Tateishi, T.; Legrand, A.; Tsang, M.Y.; Yang, H.-C.; Wu, C.-W.\*; Urayama, K.; **Kang, D.-Y.\***; Furukawa, S.\*; Phase-transformable metal-organic polyhedra for membrane processing and switchable gas separation, *Nat. Commun.*, **2024**, 15(1), 9523.
91. Chuang, C.-H.; Peng, Y.-H.; Chang, C.-K.; Chang, P.-Y.; **Kang, D.-Y.\***; Yeh, L.-H.\*; MOF-303 with Crystal orientation control in angstrom-scale channel membranes for significantly enhanced blue energy harvesting, *Chem. Eng. J.*, **2024**, 499, 155934.
90. Lin, Y.-H.; Lin, H.-H.; Lee, Y.-S.; Yu, W.-Y.; Luo, S.-C.\*; **Kang, D.-Y.\***, MOF-303 with Lowered Water Evaporation Enthalpy for Solar Steam Generation, *ACS Appl. Mater. Interfaces*, **2024**, 16, 37,

89. Darban, M.A.; Lock, S.S.M.\*; Ilyas, S.U.; **Kang, D.-Y.**; Othman, M.H.D.; Yilin, C.L.; Waqas, S.; Bashir, Z., Molecular simulation of [P8883][Tf2N] ionic liquid decorated silica in 6FDA-ODA based mixed matrix membrane for enhanced CO<sub>2</sub>/CH<sub>4</sub> separation, *RSC Adv.*, **2024**, 14, 22894–22915.
88. Hundessa, N.K.; Hu, C.-C.\*; **Kang, D.-Y.\***; Chou, P.-C.; Ajebe, E.G.; Lee, K.-R.; Lai, J.-Y.\*, Ultra-high flux loose nanofiltration membrane based on metal organic framework (CAU-10-H)/P84 copolyimide for dye/salt fractionation from industrial waste water, *Desalination*, **2024**, 586, 117871.
87. Hsu, C.-H.; Lin, C.-Y.; Wang, H.-Y.; Lin, P.-Y.; Chuang, C.-H.; Hsiao, L.-W.; Chiu, C.-c.\*; **Kang, D.-Y.\***, Single-file diffusion and its influence on membrane gas separation: a case study on UTSA-280, *J. Membr. Sci.*, **2024**, 706, 122920.
86. Wu, P.-C.; Wang, H.-Y.; **Kang, D.-Y.\***; Tung, K.-L.\*, Green Delamination of 2D LDH Nanosheets Incorporated in Mixed Matrix Membrane for CO<sub>2</sub> Capture, *J. Membr. Sci.*, **2024**, 702, 122797.
85. Lin, M.-H.; Hsu, C.-H.; **Kang, D.-Y.\***; Liu, C.-L.\*, Correlating Framework Structures and Thermoelectric Performance of Metal-Organic Framework/Carbon Nanotube Thermoelectric Hybrids with N-P Type Inversion, *Chem. Eng. J.*, **2024**, 485, 149732.
84. Hsu, C.-H.; Yu, H.-Y.; Lee, H.J.; Wu, P.-H.; Huang, S.-J.; Lee, J.S.\*; Yu, T.-Y.\*; Li, Y.-P.\*; **Kang, D.-Y.\***, Fast Water Transport in UTSA-280 via a Knock-off Mechanism, *Angew. Chem. Int. ed.*, **2023**, 62(39), e202309874.
83. Hu, F.-H.; Chi, L.-T.; Syu, G.-B.; Yu, T.-Y.; Lin, M.-P.; Chen, J.-J.\*; Yu, W.-Y.\*; **Kang, D.-Y.\***, Mixed-linker MOF-303 membranes for pervaporation, *J. Membr. Sci. Lett.*, **2023**, 3(2), 100053.
82. Hong, Y.-W.; Laysandra, L.; Chiu, Y.-C.\*; **Kang, D.-Y.\***, Vacuum-Assisted Self-Healing Amphiphilic Copolymer Membranes for Gas Separation, *ACS Appl. Mater. Interfaces*, **2023**, 15, 28, 34075–34086.
81. Chang, C.-K.; Ko, T.-R.; Lin, T.-Y.; Lin, Y.-C.; Yu, H.J.; Lee, J.S.\*; Li, Y.-P.\*; Wu, H.-L.\*; **Kang, D.-Y.\***, Mixed-linker strategy for suppressing structural flexibility of metal-organic framework membranes for gas separation, *Commun. Chem.*, **2023**, 6, 118.
80. **Kang, D.-Y.\***; Lee, J.S.\*, Challenges in Developing MOF-Based Membranes for Gas Separation, *Langmuir*, **2023**, 39, 2871–2880.
79. Hung, H.-L.; Iizuka, T.; Deng, S.; Lyu, Q.; Hsu, C.-H.; Oe, N.; Lin, L.-C.\*; Hosono, N.\*; **Kang, D.-Y.\***, Engineering gas separation property of metal-organic framework membranes via polymer insertion, *Sep. Purif. Technol.*, **2023**, 310, 123115.
78. Hu, T.-N.; Hsu, C.-H.; Chiou, D.-S.; **Kang, D.-Y.\***; Luo, S.-C.\*, CAU-10-H as Efficient Water Sorbent for Solar Steam Generation, *J. Taiwan Inst. Chem. Eng.*, **2022**, 141, 104593.
77. Yu, H.J.; Chiou, D.-S.; Hsu, C.-H.; Tsai, H.-Y.; Kan, M.-Y.; Lee, J.S.\*; **Kang, D.-Y.\***, Engineering CAU-10-H for preparation of mixed matrix membrane for gas separations, *J. Membr. Sci.*, **2022**, 663, 121024.
76. Chiou, D.-S.; Chuang, Y.-C.; Chang, C.-K.; Hsu, C.-H.; Lin, L.-C.; **Kang, D.-Y.\***, X-ray diffraction for probing free energy profiles and self-diffusivity of gases in metal-organic frameworks, *CrystEngComm*, **2022**, 24, 6302–6308. [selected as HOT article]
75. Lai, J.-Y.; Wang, T.-Y.; Zou, C.; Chen, J.-J.\*; Lin, L.-C.\*; **Kang, D.-Y.\***, Highly-selective MOF-303

membrane for alcohol dehydration, *J. Membr. Sci.*, **2022**, 661, 120879.

74. **Kang, D.-Y.\***; Lee, J.S.\*; Lin, L.-C.\*, X-Ray Diffraction and Molecular Simulations in the Study of Metal-Organic Frameworks for Membrane Gas Separation, *Langmuir*, **2022**, 38, 31, 9441–9453.
73. Usman, M.; Yang, A.-C.; Inamdar, A.I.; Kamal, S; Hsu, J.-C.; **Kang, D.-Y.**; Tseng, T.-W.; Hung, C.-H.\*; Lu, K.-L.\*, Thin Film Growth of 3D Sr-based Metal-Organic Framework on Conductive Glass via Electrochemical Deposition, *ChemistryOpen*, **2022**, 11, e202100295.
72. Hung, T.-H.; Xu, Z.-X.; **Kang, D.-Y.**; Lin, L.-C.\*, Chemistry-encoded Convolutional Neural Networks for Predicting Gaseous Adsorption in Porous Materials, *J. Phys. Chem. C*, **2022**, 126, 2813–2822.
71. Eguchi, M.\*; Konarova, M.; Torad, N. L.; Chang, T.-A.; **Kang, D.-Y.**; Shapter, J. G.; Yamauchi, Y., Highly Adhesive and Disposable Inorganic Barrier Films: Made from 2D Silicate Nanosheets and Water, *J. Mater. Chem. A*, **2022**, 10, 1956–1964.
70. Chang, C.-K.; Yu, H.J.; Jang, H.; Hung, T.-H.; Chang, C.-K.; Kim\*, J.; Lee, J.S.\*; **Kang, D.-Y.\***, Conformational-change-induced selectivity enhancement of CAU-10-PDC membrane for H<sub>2</sub>/CH<sub>4</sub> and CO<sub>2</sub>/CH<sub>4</sub> separation, *J. Membr. Sci. Lett.*, 2021, 1, 100005.
69. Hung, T.-H.; Lyu, Q.; Lin, L.-C.\*; **Kang, D.-Y.\***, Transport-Relevant Pore Limiting Diameter for Molecular Separations in Metal-Organic Framework Membranes, *J. Phys. Chem. C*, **2021**, 125, 20416–20425.
68. Kan, M.-Y.; Lyu, Q.; Chu, Y.-H.; Hsu, C.-C.; Lu, K.-L.; Lin, L.-C.\*; **Kang, D.-Y.\***, Suppressing Defect Formation in Metal-organic Framework Membranes via Plasma-assisted Synthesis for Gas Separations, *ACS Appl. Mater. Interfaces*, **2021**, 13, 41904–41915.
67. Guo, J.-C.; Zou, C.; Chiang, C.-Y.; Chang, T.-A.; Chen, J.-J.\*; L.-C. Lin\*; **Kang, D.-Y.\***, NaP1 zeolite membranes with high selectivity for water-alcohol pervaporation, *J. Membr. Sci.*, **2021**, 639, 119762.
66. Hung, T.-H.; Deng, X.; Lyu, Q.; Lin, L.-C.\*; **Kang, D.-Y.\***, Coulombic effect on permeation of CO<sub>2</sub> in metal-organic framework membranes, *J. Membr. Sci.*, **2021**, 639, 119742.
65. An, H.; Cho, K.Y.; Lyu, Q.; Chiou, D.-S.; Nam, K.J.; **Kang, D.-Y.\***; Lin, L.-C.\*; Lee, J.S.\*, Facile Defect Engineering of Zeolitic Imidazolate Frameworks Towards Enhanced C<sub>3</sub>H<sub>6</sub>/C<sub>3</sub>H<sub>8</sub> Separation Performance, *Adv. Funct. Mater.*, **2021**, 31, 2105577.
64. Hsieh, Y.-J.; Zou C; Chen, J.-J.\*; Lin, L.-C.\*; **Kang, D.-Y.\***, Pillared-bilayer metal-organic framework membranes for dehydration of isopropanol, *Microporous Mesoporous Mater.*, **2021**, 326, 111344.
63. Shin, J.H.; Kan, M.-Y.; Oh, J.-W.; Yu, H.J.; Lin, L.-C.; **Kang, D.-Y.\***; Lee, J.S.\*, Solubility selectivity-enhanced SIFSIX-3-Ni-containing mixed matrix membranes for improved CO<sub>2</sub>/CH<sub>4</sub> separation efficiency, *J. Membr. Sci.*, **2021**, 633, 119390.
62. Chiou, D.-S.; Yu, H.J.; Hung, T.-H.; Lyu, Q.; Chang C.-K.; Lee, J.S.\*; Lin, L.-C.\*; **Kang, D.-Y.\***, Highly CO<sub>2</sub> Selective Metal-Organic Framework Membranes with Favorable Coulombic Effect, *Adv. Funct. Mater.*, **2021**, 31, 2006924.
61. Tao, T.-L.; Chang, C.-K.; Kang, Y.-H.; Chen, J.-J.; **Kang, D.-Y.\***, Enhanced pervaporation performance of zeolite membranes treated by atmospheric-pressure plasma, *J. Taiwan Inst. Chem. Eng.*, **2020**, 116, 112–120.

60. Chang, T.-A.; Hsu, W.-J.; Hung, T.-H.; Hu, S.-W.; Tsao, H.K.; Zou, C.; Lin, L.-C.; Kang, Y.-H.; Chen, J.-J.\*; **Kang, D.-Y.\***, Toward Long-lasting Low-haze Anti-fog Coatings through the Deposition of Zeolites, *Ind. Eng. Chem. Res.*, **2020**, 59(29), 13042–13050.
59. Lyu, Q.; **Kang, D.-Y.**; Hu, S.\*; Lin, L.-C.\*, Exploiting interior surface functionalization in reverse osmosis desalination membranes to mitigate permeability–selectivity trade-off: molecular simulations of nanotube-based membranes, *Desalination*, **2020**, 491, 114537.
58. Ren, L.-X.; Chang, F.-L.; **Kang, D.-Y.**; Chen, C.-L.\*, Hybrid membrane process for post-combustion CO<sub>2</sub> capture from coal-fired power plant, *J. Membr. Sci.*, **2020**, 603, 118001.
57. Chen, J.-J.; Chiu, H.-C.; Chang, C.-W.; Shen, C.-Y.; Kang, Y.-H.; Chi, H.-Y.; Chang, C.-K.; Chuang, Y.C.; **Kang, D.-Y.\***, Core-shell metal-organic frameworks with improving cyclic stability for water adsorption, *J. Chem. Eng. Japan*, **2020**, 53(8), 1–7.
56. Lee, L.-W.; Chi, H.-Y.; Kao, Y.-C.; Hung, T.-H.; Chiou, D.-S.; Lee, G.-H.; Peng, S.-M., **Kang, D.-Y.\***; Wang, C.-M.\*, Zinc(II)–Organic Framework Films with Thermochromic and Solvatochromic Applications, *Chem. Eur. J.*, **2020**, 26, 4204–4208.
55. Oh, J.W.; Cho, K.Y.; Kan, M.-Y.; Yu, H.J.; **Kang D.-Y.\***; Lee, J.S.\*, High-flux mixed matrix membranes containing bimetallic zeolitic imidazole framework-8 for C<sub>3</sub>H<sub>6</sub>/C<sub>3</sub>H<sub>8</sub> separation, *J. Membr. Sci.*, **2020**, 117735.
54. Su, C.-Y.†; Lyu, Q.†; **Kang, D.-Y.†\***; Yang, Z.-H.; Lam, C.H.; Chen, Y.-H.; Lo, S.-C.; Hua, C.-C.\*; Lin, L.-C.\*, Hexagonal superalignment of nano-objects with tunable separation in a dilute and spacer-free solution, *Phys. Rev. Lett.*, **2019**, 123, 238002.
53. Hsu, W.-J.; Ibrahim, I.; Lin, Y.-H.; Yang, Z.-H.; Yucelen, G.I.; Han, J.W.\*; **Kang, D.-Y.\***, Transparent Conductive Films Derived from Single-Walled Aluminosilicate Nanotubes, *ACS Appl. Nano Mater.*, **2019**, 2(10), 6677-6689.
52. Kan, M.-Y.; Shin, J.H.; Yang, C.-T.; Chang, C.-K.; Lee, L.-W.; Chen, B.-H.; Lu, K.-L.; Lee, J.S.\*; Lin, L.-C.\*; **Kang, D.-Y.\***, Activation-Controlled Structure Deformation of Pillared-Bilayer Metal-Organic Framework Membranes for Gas Separations, *Chem. Mater.*, **2019**, 31, 7666-7677.
51. Huang, Y.-C.; Hsu, W.-J.; Wang, C.-Y.; Tsao, H.-K.; Kang, Y.-H. ; Chen, J.-J.\*; **Kang, D.-Y.\***, Wetting Properties and Thin Film Quality in the Wet Deposition of Zeolites, *ACS Omega*, **2019**, 4, 13488-13495.
50. Lee, L.-W.‡; Pao, S.-Y.‡; Pathak, A.; **Kang, D.-Y.\***; Lu, K.-L.\*, Membrane adsorber containing new Sm(III)–organic framework for dye removal, *Environ. Sci. Nano*, **2019**, 6, 1067-1076 (inside cover).
49. Hsu, W.-J.; Huang, P.-S.; Huang, Y.-C.; Hu, S.-W.; Tsao, H.-K.; **Kang, D.-Y.\***, Zeolite-Based Anti-Fogging Coating via Direct Wet Deposition, *Langmuir*, **2019**, 35 (7), 2538-2546.
48. Chi, H.-Y.‡; Hung, S.-H.‡; Kan, M.-Y.; Lee, L.-W.; Lam, C. H., Chen, J.-J.\*; **Kang, D.-Y.\***, Metal-organic frameworks for dye sorption: structure–property relationships and scalable deposition of the membrane adsorber, *CrystEngComm*, **2018**, 20, 5465-5474.
47. Huang, P.-S.; Lam C.H.; Su, C.-Y.; Chen, Y.-R.; Lee, W.-Y.; Wang, D.-M.; Hua, C.-C.\*; **Kang, D.-Y.\*** Scalable Wet Deposition of Zeolite AEI with a High Degree of Preferred Crystal Orientation, *Angew. Chem. Int. Ed.*, **2018**, 57, 13271-13276.
46. Chen, Y.-R.; Liou, K.-H.; **Kang, D.-Y.**; Chen, J.-J.\*; Lin, L.-C., Investigation of the Water Adsorption Properties and Structural Stability of MIL-100(Fe) with Different Anions, *Langmuir*, **2018**,

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45. Lam, C. H.; Hsu, W.-J.; Chi, H.-Y.; Kang, Y.-H.; Chen, J.-J.\*; **Kang, D.-Y.\***, High-Throughput Fabrication of Zeolite Thin Films *via* Ultrasonic Nozzle Spray Deposition, *Microporous Mesoporous Mater.*, **2018**, 267, 171-180.
44. Huang, K.-Y.; Chi, H.-Y.; Kao, P.-K.; Huang, F.-H.; Jian, Q.-M.; Cheng, I.-C.; Lee, W.-Y.; Hsu, C.-C.\*; **Kang, D.-Y.\***, Atmospheric Pressure Plasma Jet Assisted Synthesis of Zeolite-Based Low-*k* Thin Films, *ACS Appl. Mater. Interfaces*, **2018**, 10(1), 900-908.
43. Su, C.-Y.; Yang, A.-C.; Jiang, J.-S.; Yang, Z.-H.; Huang, Y.-S.; **Kang, D.-Y.\***; Hua, C.-C.\*, "Properties of Single-Walled Aluminosilicate Nanotube/Poly(vinyl alcohol) Aqueous Dispersions", *J. Phys. Chem. B*, **2018**, 122(1), 380-391.
42. Huang, P.-S.; Su, C.-Y.; Lam, C. H.; Lee, W.-Y.; Wang, D.-M.; Hua, C.-C.\*; **Kang, D.-Y.\***, Direct Wet Deposition of Zeolite FAU Thin Films Using Stabilized Colloidal Suspensions, *Microporous Mesoporous Mater.*, **2018**, 272, 268-295.
41. Lam, C. H.‡; Chi, H.-Y.‡; Hsu, S.-M.; Li, Y.-S.; Lee, W.-Y.; Cheng, I.-C.; **Kang, D.-Y.\***, Surfactant-Mediated Self-Assembly of Nanocrystals to Form Hierarchically Structured Zeolite Thin Films with Controlled Crystal Orientation, *RSC Adv.*, **2017**, 7, 49048-49055.
40. Ting, H.‡; Chi, H.-Y.‡; Lam, C. H.; Chan, K.-Y.; **Kang, D.-Y.\***, High-Permeance Metal-Organic Framework-Based Membrane Adsorber for Removal of Dye Molecules in Aqueous Phase, *Environ. Sci. Nano*, **2017**, 4, 2205-2214.
39. Li, Y.-L.; Chi, H.-Y.; Kan, M.-Y.; Pao, S.-Y.; Kang, Y.-H.; Chen, J.-J.\*; **Kang, D.-Y.\***, Surface Engineering Layered Metal-Organic Framework to Enhance Processability and Stability in Water, *ChemNanoMat*, **2017**, 3, 902-908.
38. Chen, Y.-R.; Tsuru, T.; **Kang, D.-Y.\***, Simulation and Design of Catalytic Membrane Reactor for Hydrogen Production via Methylcyclohexane Dehydrogenation, *Int. J. Hydrogen Energy*, **2017**, 42(42), 26296-26307.
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36. Liu, C.-H.; **Kang, D.-Y.\***, Influence of Interwall Interaction in Double-Walled Aluminogermanate Nanotubes on Mechanical Properties, *Comput. Mater. Sci.*, **2017**, 135, 54-63.
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34. Chiang, C.-C.; Wu, D.-Y.; **Kang, D.-Y.\***, Detailed Simulation of Fluid Dynamics and Heat Transfer in Coffee Bean Roaster, *J. Food Process. Eng.*, **2017**, 40, e12398.
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32. Yang, A.-C.; Li, Y.-S.; Lam, C. H.; Chi, H.-Y.; Cheng, I.-C.\*; **Kang, D.-Y.\***, Solution-Processed Ultra-Low-*k* Thin Films Comprising Single-Walled Aluminosilicate Nanotubes, *Nanoscale*, **2016**, 8, 17427-17432.
31. Lo, Y.; Lam, C. H.; Chang, C.-W.; Yang, A.-C.; **Kang, D.-Y.\***, Polymorphism/Pseudopolymorphism of Metal-Organic Frameworks Composed of Zinc(II) and 2-Methylimidazole: Synthesis,

Stability, and Application in Gas Storage, *RSC Adv.*, **2016**, 6, 89148-89156.

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29. Wang, T.-p.; **Kang, D.-Y.\***, cif2tube - Algorithm for Constructing Nanotube and Nanoscroll Models from Crystallographic Information Files, *J. Taiwan Inst. Chem. Eng.*, **2016**, 68, 415-422.
28. Chiang, C.-C.; Su, C.-Y.; Yang, A.-C.; Wang, T.-Y.; Lee, W.-Y.; Hua, C.-C.\*; **Kang, D.-Y.\***, Relationships between the Solution and Solid-State Properties of Solution-Cast Low-k Silica Thin Films, *Phys. Chem. Chem. Phys.*, **2016**, 18, 20371-20380.
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20. **Kang, D.-Y.\***; Liou, K.-H.; Chang, W.-L., Investigating Friction as a Main Source of Entropy Generation in the Expansion of Confined Gas in a Piston-and-Cylinder Device, *J. Chem. Educ.*, **2015**, 92 (10), 1667-1671.
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18. Mukundam, V.; Dhanunjayarao, K.; Chuang, C.-N.; **Kang, D.-Y.**; Leung, M.-k.; Hsieh, K.-H.; Venkatasubbaiah, K.\*, Design, Synthesis, Photophysical and Electrochemical Properties of 2-(4,5-diphenyl-1-p-aryl-1H-imidazol-2-yl)phenol-based Boron Complexes, *Dalton Trans.*, **2015**, 44, 10228-10236.
17. **Kang, D.-Y.\***; Lydon, M.E.; Yucelen, G.I.; Jones, C.W.; Nair, S.\*, Solution-Processed Ultrathin Aluminosilicate Nanotube-Poly(vinyl alcohol) Composite Membranes with Partial Alignment of Nanotubes, *ChemNanoMat*, **2015**, 1(2), 102-108 (Inside Front Cover).
16. Wang, T.-p.; **Kang, D.-Y.\***, Predictions of Effective Diffusivity of Mixed Matrix Membranes with



Tubular Fillers, *J. Membr. Sci.*, **2015**, 485, 123-131.

15. He, X.; Cai, D.; **Kang, D.-Y.**; Haske, W.; Zhang, Y.; Zuniga, C.A.; Wunsch, B.H.; Barlow, S.; Leisen, J.; Bucknall, D.; Kippelen, B\*; Marder, S.R.\*, Phosphorescent Light-Emitting Diodes Using Triscarbazole/Bis(oxadiazole) Hosts: Comparison of Homopolymer Blends and Random and Block Copolymers, *J. Mater. Chem. C*, **2014**, 2, 6743.
14. **Kang, D.-Y.**; Brunelli, N.A.; Yucelen, G.I.; Venkatasubramanian, A.; Zang, J.; Leisen, J.; Hesketh, P.J.; Jones, C.W.\*; Nair, S.\*, Direct Synthesis of Single-Walled Aminoaluminosilicate Nanotubes with Enhanced Molecular Adsorption Selectivity, *Nat. Commun.*, **2014**, 5, 3342.
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6. Yucelen, G. I.; **Kang, D.-Y.**; Guerrero, R. C.; Wright, E. R.; Beckham, H. W.; Nair, S.\*, Shaping Nanotubes at the Molecular Scale from Precursors of Controlled Curvature, *Nano Lett.*, **2012**, 12 (2), 827-832.
5. **Kang, D.-Y.**; Tong, H. M.; Zang, J.; Sholl. D.S.; Jones, C. W.\*; Nair, S.\*, Single-Walled Aluminosilicate Nanotube / Poly (vinyl alcohol) Nanocomposite Membranes, *ACS Appl. Mater. Interfaces*, **2012**, 4 (2), 965-972.
4. **Kang, D.-Y.**; Jones, C. W.\*; Nair, S.\*, Modeling Mass Transport in Composite Membranes with Tubular Fillers, *J. Membr. Sci.*, **2011**, 381 (1), 50-63.
3. **Kang, D.-Y.**; Zang, J.; Jones, C. W.\*; Nair, S.\*, Single-Walled Aluminosilicate Nanotubes with Organic-Modified Interiors. *J. Phys. Chem. C*, **2011**, 115 (15), 7676-7685.
2. **Kang, D.-Y.**; Zang, J.; Wright, E. R.; McCanna, A. L.; Jones, C. W.\*; Nair, S.\*, Dehydration,

Dehydroxylation, and Rehydroxylation of Single-Walled Aluminosilicate Nanotubes. *ACS Nano*, **2010**, 4 (8), 4897-4907.

1. **Kang, D.-Y.\***; Wu, E; Wang, D.-M., Modeling White Light-Emitting Diodes with Phosphor Layers. *Appl. Phys. Lett.*, **2006**, 89 (23), 231102.

<b>Book Chapters</b>	<ol style="list-style-type: none"> <li>1. <b>Kang, D.-Y.*</b>; Hung, H.-L.; Tsai, H.-Y.; Lai, J.-Y.; Hung, T.-H.; Metal-organic framework membranes for gas separation and pervaporation, <i>60 Years of the Loeb-Sourirajan Membrane</i> (Editors: Hui-Hsin Tseng, Woei Lau, Mohammad Al-Ghouti, Liang An), Elsevier, 2022, ISBN: 978-0-323-89977-2</li> </ol>
<b>Patents</b>	<ol style="list-style-type: none"> <li>4. Nair, S; <b>Kang, D.-Y.</b>; Brunelli, B.A.; Jones, C.W., Functionalized Single-Walled Nanotubes and Methods Thereof, US Patent # 9290381 B2</li> <li>3. Nair, S; <b>Kang, D.-Y.</b>; Jones, C.W., Single-Walled Metal Oxide and Metal Sulphide Nanotubes/Polymer Composites, US Patent #9174842 B2</li> <li>2. <b>Kang, D.-Y.</b>; Nair, S; Jones, C.W., Single-Walled Metal Oxide Nanotubes, US Patent #8637693 B2</li> <li>1. Wu, E., <b>Kang, D.-Y.</b>, Wang, D.-M. Light Emitting Diode Die with at Least One Phosphor Layer and Method for Forming the Same, US Patent #8242517</li> </ol>
<b>Invited Lectures</b>	<ol style="list-style-type: none"> <li>31. Seminar, Department of Chemical Engineering at National Taiwan University of Science and Technology, Taiwan Nov. 2024</li> <li>30. Seminar, Department of Chemical and Biochemical Engineering at Sogang University, Taiwan Jun. 2024</li> <li>29. Seminar, Department of Chemistry at National Central University, Taiwan May 2024</li> <li>28. Seminar, Department of Environmental Engineering at National Chung Hsing University, Taiwan May 2022</li> <li>27. Seminar, Department of Environmental Engineering at National Chung Hsing University, Taiwan Sep. 2022</li> <li>26. Seminar, Department of Chemical and Materials Engineering at National Central University, Taiwan Apr. 2020</li> <li>25. Seminar, Department of Materials Science and Engineering at National Taiwan University of Science and Technology, Taiwan Dec. 2019</li> <li>24. Seminar, Department of Chemistry at National Tsing Hua University, Taiwan Dec. 2019</li> <li>23. Seminar, Department of Chemical and Biomolecular Engineering at KAIST, Korea Oct. 2019</li> <li>22. Seminar, Entirgis, Hsinchu, Taiwan Jun. 2019</li> <li>21. Seminar, Department of Chemical Engineering at National Tsing Hua University, Taiwan May 2019</li> <li>20. Seminar, Department of Chemical Engineering at National Cheng Kung University, Taiwan Dec. 2018</li> <li>19. Seminar, Department of Chemical Engineering at Inha University, Korea Aug. 2018</li> <li>18. Seminar, LCY Chemical Group, Taiwan Jun. 2018</li> </ol>

17. Seminar, Department of Chemical Engineering at National Taiwan University of Science and Technology, Taiwan May 2017
16. Seminar, Department of Mechanical Engineering at National Taiwan University of Science and Technology, Taiwan May 2017
15. Seminar, The Department of Chemical Engineering at Hiroshima University, Japan Apr. 2017
14. Seminar, The Affiliated Senior High School of National Taiwan Normal University, Taiwan Dec. 2016
13. Seminar, Taipei Municipal Song Shan Senior High School, Taiwan Nov. 2016
12. Seminar, Taipei Wego Private Bilingual High School, Taiwan Oct. 2016
11. Seminar, Department of Chemical Engineering at National Chung Cheng University, Taiwan Jun. 2016
10. Seminar, Department of Chemical Engineering at National Cheng Kung University, Taiwan Dec. 2015
9. Seminar, Institute of Polymer Science and Engineering at National Taiwan University, Taiwan Jun. 2015
8. Seminar, Department of Materials Science and Engineering at National Chiao Tung University, Taiwan Jun. 2015
7. Seminar, Department of Chemical Engineering at National Chung Hsing University, Taiwan May 2015
6. Seminar, Institute of Applied Mechanics at National Taiwan University, Taiwan Mar. 2015
5. Seminar, Department of Chemical and Materials Engineering at National Central University, Taiwan Jun. 2014
4. Seminar, Linkou Senior High School, Taiwan Jun. 2014
3. Seminar, Department of Chemical Engineering at National Chung Cheng University, Taiwan Jan. 2014
2. Seminar, R&D Center for Membrane Technology at Chung Yuan Christian University, Taiwan Aug. 2013
1. Nano@Tech Seminar, Institute for Electronics and Nanotechnology at Georgia Institute of Technology, USA Apr. 2013

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## Conferences

52. **Kang, D.-Y.\* (Keynote Speaker)**, Mass Transfer in the Ultramicropores within Metal-Organic Framework Membranes, *TwIChE Annual Meeting*, Taoyuan, Taiwan Nov. 2024
51. **Kang, D.-Y.\* (Invited Speaker)**, Investigation of Molecular Transport in MOF Membranes, *MOF 2024*, Singapore Jul. 2024
50. **Kang, D.-Y.\* (Keynote Speaker)**, Understanding molecular transport in MOF membranes, *ICOM 2023*, Chiba, Japan Jul. 2023
49. **Kang, D.-Y.\* (Keynote Speaker)**, MOF membranes for gas separation and pervaporation, *AMS annual meeting*, Singapore Jul. 2022
48. **Kang, D.-Y.\* (Keynote Speaker)**, Recent Advances in MOF Membranes for Gas Separation, *16<sup>th</sup> ICIM*, Taipei Jun. 2022

47. **Kang, D.-Y.\* (Invited Speaker)**, MOF membranes for gas separations: recent advancement, *IChES*, online Mar. 2022
46. **Kang, D.-Y.\* (Invited Speaker)**, MOF Membranes for Gas Separations, *TwIChE annual meeting*, Kaohsiung Jan. 2022
45. **Kang, D.-Y.\* (Invited Speaker)**, Rational engineering of metal-organic framework membranes for gas separation - a combination of computational and experimental approach, *PacificChem*, online Dec. 2021
44. **Kang, D.-Y.\* (Invited Speaker)**, Mass Transfer in MOFs and Their Applications on Membrane Gas Separations, *MACRO 2020+*, online May 2021
43. **Kang, D.-Y.\* (Award Lecture)**, Advancing Metal-Organic Framework Membranes for Highly-Efficient Molecular Separations, *Annual Meeting of The Society of Chemical Engineers, Japan*, online Mar. 2021
42. **Kang, D.-Y.\* (Keynote Speaker)**, CO<sub>2</sub> Selective MOF Membrane with Favorable Charge Effect, *30<sup>th</sup> Anniversary of Membrane Society of Korea*, online Oct. 2020
41. **Kang, D.-Y.\* (Invited Speaker)**, Emerging Applications of Zeolite/Ceramic Nanotube Thin Films and MOF Membranes for Gas Separations, *International Symposium on Porous Materials*, Tokyo, Japan Nov. 2019
40. **Kang, D.-Y.\* (Invited Speaker)**, Zeolite/MOF membranes for antifogging coating and molecular separations, *KIChE Annual Meeting*, Daejeon, Korea Oct. 2019
39. **Kang, D.-Y.\* (Invited Speaker)**, Effects of Framework Flexibility and Aperture Size of Metal-Organic Frameworks on Molecular Transport in Membranes, *12<sup>th</sup> Conference of the Aseanian Membrane Society*, Jeju, Korea Jul. 2019
38. **Kang, D.-Y.\* (Invited Speaker)**, Influence of Structural Flexibility of MOF Membranes on Molecular Transport Properties, *International Membrane Conference in Taiwan (IMCT)*, Taipei, Taiwan Jun. 2019
37. **Kang, D.-Y.\* (Invited Speaker)**, MOF and Zeolite Membranes: Fabrication and Applications, *Annual Meeting of Taiwan Filtration and Separations Society*, Taipei, Taiwan May 2019
36. **Kang, D.-Y.\* (Invited Speaker)**, *Advanced Hybrid Materials and Membrane Separation Symposium*, Chung Yuan Christian University, Taoyuan City, Taiwan May 2019
35. **Kang, D.-Y.\* (Invited Speaker)**, Deposition and Applications of Zeolite/MOF Membranes, *2<sup>nd</sup> SGU-NTU ChemE Symposium*, Sogang University, Seoul, Korea Apr. 2019
34. **Kang, D.-Y.\* (Invited Speaker)**, Metal-organic framework membranes for liquid-phase and gas-phase separations, *Symposium on Advanced Drying Techniques*, ITRI, Hsinchu, Taiwan Oct. 2018
33. **Kang, D.-Y.\* (Invited Speaker)**, Metal-organic framework membranes for liquid-phase and gas-phase separations, *Summer Workshop of KIChE*, Cheonan, Korea Aug. 2018
32. **Kang, D.-Y.\* (Invited Speaker)**, Wet Deposition of Nanoporous Thin Films, *7th Summer Course and Workshop on Emergent Functional Matter Science*, Hsinchu, Taiwan Jun. 2018
31. **Kang, D.-Y.\* (Keynote Speaker)**, High-Value Products Produced from Waste Apr. 2018

or Reusable Resources, *International Symposium on the Circular Economy, Chemical Industry, and Tax Policy*, Taipei, Taiwan

30. **Kang, D.-Y.\***, Membranes Comprising Metal-Organic Frameworks for Water Treatment, ICAMR, Fukuoka, Japan Jan. 2018
29. **Kang, D.-Y.\* (Invited Speaker)**, Composite Membranes Comprising Two Microporous Materials for Gas Separation, *Fall Meeting of Catalysis Society of Taiwan*, Taipei, Taiwan Dec. 2017
28. **Kang, D.-Y.\***, Metal-Organic Frameworks as Membrane Adsorber for Water Treatment, *IUMRS-ICA*, Taipei, Taiwan Nov. 2017
27. **Kang, D.-Y.\* (Invited Speaker)**, Wet Deposition of Inorganic Nanoporous Thin Films, *KIChE Annual Meeting*, Daejeon, Korea Oct. 2017
26. **Kang, D.-Y.\***, Wet Deposition of Low-k Thin Films Composed of Ceramic Nanotubes, *ICMSET*, Seoul, Korea Oct. 2017
25. **Kang, D.-Y.\* (Invited Speaker)**, Microwave-Assisted Synthesis of Inorganic Nanomaterials, *CEM Workshop*, Taipei, Taiwan May 2017
24. **Kang, D.-Y.\* (Invited Speaker)**, Wet Deposition of Inorganic Nanoporous Thin Films, *Japan-Taiwan International Engineering Forum*, Tokyo, Japan Mar. 2017
23. **Kang, D.-Y.\* (Invited Speaker)**, Simulations of Transport Phenomena Using COMSOL Multiphysics – Class Projects, *COMSOL Multiphysics Conference*, Taipei, Taiwan Nov. 2016
22. **Kang, D.-Y.\***, Direct Deposition of Inorganic Nanoporous Thin Films for Applications in Electronics, *7<sup>th</sup> International Zeolite Membrane Meeting*, Dalian, China Aug. 2016
21. **Kang, D.-Y.\***, Hybrid Zeolite Imidazolate Framework Thin Films for Gas Separations, *Advances in Functional Materials*, Jeju, Korea Aug. 2016
20. **Kang, D.-Y.\* (Invited Speaker)**, Emerging methods for fabrication of MOF, zeolite, and nanotube membranes, *7<sup>th</sup> International Symposium on Inorganic Membranes*, Tokyo, Japan Jul. 2016
19. **Kang, D.-Y.\* (Invited Speaker)**; Lo, Y., Hybrid ZIF Membranes with Enhanced Hydrogen Separation Performance, *International Membrane Conference in Taiwan*, Chungli, Taiwan May 2016
18. **Kang, D.-Y.\* (Invited Speaker)**; Lo, Y., ZIF-ZIF Hybrid Membranes for Hydrogen Purification, *12<sup>th</sup> World Filtration Congress*, Taipei, Taiwan Apr. 2016
17. **Kang, D.-Y.\* (Invited Speaker)**, Estimations of Effective Diffusivity of Various Types of Mixed Matrix Membranes, *TwIChE Annual Meeting 2015*, Kaohsiung, Taiwan Nov. 2015
16. **Kang, D.-Y.\* (Keynote Speaker)**, Mechanical Properties of Single-Walled Aluminosilicate Nanotubes, *1<sup>st</sup> Computational Mechanics Conference in Taiwan*, Taipei, Taiwan Oct. 2015
15. **Kang, D.-Y.\* (Invited Speaker)**, Ultra Nanotube Composite Membranes for Molecular Separations, *NTU-NIMS Workshop*, Nantou, Taiwan Sep. 2015
14. **Kang, D.-Y.\***, Facile Removal of Structure Directing Agent from Zeolite Sep. 2015

- Membranes Using Atmospheric Pressure Plasma Jet, *Sol-Gel 2015*, Kyoto, Japan
13. **Kang, D.-Y.\***, Ultra Thin Nanotube Composite Membranes for Molecular Separations, *9<sup>th</sup> Conference of Asian Membrane Society*, Taipei, Taiwan Jul. 2015
  12. **Kang, D.-Y.\* (Invited Speaker)**; Liou, K.-H., Rational Engineering Metal Oxide Nanotubes, International Conference on Nanospace Materials, Taipei, Taiwan Jun. 2015
  11. **Kang, D.-Y.\* (Invited Speaker)**, Inorganic Nanotube-Polymer Composite Membranes for Separation Technology, *Emerging Information and Technology Association (EITA)-New Materials*, Tainan, Taiwan Nov. 2014
  10. **Kang, D.-Y.\* (Invited Speaker)**, Estimation of Effective Thermal Conductivity and Diffusivity of Nanocomposites using COMSOL, *COMSOL Multiphysics Conference*, Taipei, Taiwan Nov. 2014
  9. **Kang, D.-Y.\***, Novel Inorganic Nanotubular Materials for CO<sub>2</sub> Capture, *IUMRS-ICA*, Fukuoka, Japan Aug. 2014
  8. **Kang, D.-Y.\***, Polymer-Inorganic Nanotube Nanocomposite Membranes for Alcohol Dehydration, *IUMRS-ICA*, Fukuoka, Japan Aug. 2014
  7. **Kang, D.-Y.\***, Inorganic Nanotube-Polymer Composites for Novel Separation Platforms, International Conference on Mechanical, *Automotive, and Materials Engineering*, Singapore May 2014
  6. **Kang, D.-Y. (Invited Speaker)\***; Jones, C.W.; Nair, S., Poly(vinyl alcohol)/Single-Walled Aluminosilicate Nanotube Mixed-Matrix-Membrane for Ethanol-Water Mixture Dehydration, *International Membrane Conference in Taiwan*, Chungli, Taiwan Aug. 2013
  5. **Kang, D.-Y.**; Jones, C.W.\*; Nair, S.\*, An Inorganic Nanotube/Polymer Composite Membrane Platform for Molecular Separations, *AIChE Annual Meeting*, Pittsburgh, USA Oct. 2012
  4. **Kang, D.-Y.**; Zang, J.; Sholl, D.S.; Jones, C.W.\*; Nair, S.\*, Single-Walled Aluminosilicate Nanotubes with Organic-Modified Interiors, *AIChE Annual Meeting*, Minneapolis, USA Oct. 2012
  3. **Kang, D.-Y.**; Jones, C.W.\*; Nair, S.\*, Modeling Molecular Transport In Composite Membranes with Tubular Fillers, *AIChE Annual Meeting*, Minneapolis, USA Oct. 2012
  2. **Kang, D.-Y.**; Zang, J.; Sholl, D.S.; Jones, C.W.\*; Nair, S.\*, Single-Walled Aluminosilicate Nanotubes: Emerging Materials for Separations and Renewable Energy Technology, *PacifiChem*, Hawaii, USA Dec. 2010
  1. **Kang, D.-Y.**; Zang, J.; Jones, C.W.\*; Nair S.\*, Dehydration, Dehydroxylation, and Rehydroxylation of Single-Walled Aluminosilicate Nanotubes, *ACS Fall Meeting*, Boston, USA Aug. 2010

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## Teaching

- ChemE 1006 Chemical Engineering Fundamentals Fa 2022
- ChemE 2004 Mass and Energy Balances Sp 2022
- ChemE 3004 Chemical Engineering Thermodynamics Fa 2014, Fa 2015, Fa 2016, Fa 2017, Fa 2018, Fa 2019, Su 2020, Fa 2021, Fa 2022

- ChemE 3007 Fluid Mechanics and Operations Fa 2013, Fa 2014
- ChemE 4006 Chemical Engineering Laboratory Fa 2015, Fa 2016, Sp 2017, Fa 2020, Sp 2021, Fa 2021
- ChemE 5030 Thin-Film Technology and Surface Analysis Sp 2015, Sp 2016, Sp 2017
- ChemE 5036 Computer-Aided Computation for Chemical Engineers Sp 2016, Sp 2017, Sp 2018, Sp 2019, Fa 2019
- ChemE 5053 Introduction to Composite Materials Fa 2013, Fa 2014
- ChemE 2006 Physical Chemistry II Fa 2023, Fa 2024
- ChemE 7003 Advanced Chemical Engineering Thermodynamics Sp 2014, Sp 2015, Sp 2016, Sp 2018, Sp 2019, Sp 2020, Sp 2021, Sp 2024

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**Honors  
of Advised  
Students**

- Xiang-Yu Wang (UG student) wins outstanding oral presentation award at the annual meeting of TwIChE 2023. 2023
- Yi-Hsuan Lin (MS student) wins excellent oral presentation award at the annual meeting of TwIChE 2023. 2023
- Li-Tang Chi (MS student) wins outstanding poster presentation award at the annual meeting of TwIChE 2023. 2023
- Chia-Hui Chuang (MS student) wins excellent oral presentation award at the annual meeting of TwIChE 2023. 2023
- Xiang-Yu Wang wins MOST undergraduate research fellowship. 2023
- Chung-Kai Chang (PhD student) wins outstanding oral presentation award at the annual meeting of TwIChE 2022. 2022
- Yi-Hsuan Lin (MS student) wins excellent oral presentation award at the annual meeting of TwIChE 2022. 2022
- Yi-Hsuan Lin (MS student) wins poster presentation award at the annual meeting of Taiwan Filtration and Separation Society 2022. 2022
- Yao-Wei Hong (MS student) wins poster presentation award at the annual meeting of Taiwan Filtration and Separation Society 2022. 2022
- Hsin-Yu Tsai (MS student) wins excellent poster presentation award at the annual meeting of TwIChE 2021. 2022
- Chung-Kai Chang (PhD student) wins outstanding oral presentation award at the annual meeting of TwIChE 2021. 2022
- Chung-Kai Chang (PhD student) wins 1<sup>st</sup> place in poster presentation at the annual meeting of Taiwan Filtration and Separation Society 2021. 2021
- Da-Shiuan Chiou (PhD student) wins outstanding oral presentation award at the annual meeting of TwIChE 2020. 2020
- Chung-Kai Chang (PhD student) wins excellent oral presentation award at the annual meeting of TwIChE 2020. 2020
- Yi-Chen Huang wins MOST undergraduate research fellowship. 2018
- Ming-Yang Kan (MS student) wins outstanding poster award at the annual meeting of TwIChE 2017 in Taiwan. 2017

- Yu-Hsuan Lin (undergraduate student) wins outstanding poster award at the annual meeting of TwIChE 2017 in Taiwan. 2017
- Yu-Hsuan Lin wins MOST undergraduate research fellowship. 2017
- Chao-Wen Chang (undergraduate student) wins the outstanding English oral presentation Award in the TwIChE Annual Meeting. 2016
- Heng-Yu Chi (research assistant) wins the Excellent Poster Award in the TwIChE Annual Meeting. 2016
- Chon Hei Lam (master student) wins Excellent Poster Award at annual meeting of Taiwan Association for Coating and Thin Film 2016 in Taiwan. 2016
- An-Chih Yang (research assistant) and Heng-Yu Chi (research assistant) win awards on top and outstanding oral performance respectively at Interface Science Conference 2016 in Taiwan. 2016
- Chih-Han Liu wins (master student) Poster Award in 2016 Conference on Functional Materials in Taiwan. 2016
- Yan-Shu Huang wins MOST undergraduate research fellowship. 2016
- Tung-ping Wang wins (master student) Poster Award in 2015 Conference on Computational Fluid Dynamics in Taiwan. 2015
- Tung-ping Wang wins (master student) Microscopy Society of Taiwan Microscopic Imaging Award. 2015
- An-Chih Yang (undergraduate student) wins AIP student poster award in 2015 ICNM 2015
- Ming-Yang Gan (undergraduate student) wins MOST undergraduate research fellowship. 2015
- Ming-Yang Gan (undergraduate student) wins the NTU Presidential Award for outstanding academic performance (Top 5%). 2015
- An-Chih Yang (undergraduate student) wins the NTU Presidential Award for outstanding academic performance (Top 5%). 2015
- Tun-ping Wang (master student) wins the Excellent English Oral Presentation Award in the TwIChE Annual Meeting. 2014
- Kai-Hsin Liou (master student) wins the Excellent English Oral Presentation Award in the TwIChE Annual Meeting. 2014

<b>Research Grants</b>			
<b>32.</b>	Multifunctional M-gallate Metal-Organic Framework Membranes for Light Hydrocarbon Separation, <i>National Science and Technology Council, PI.</i>	NT\$ 1,160,000	2024/01–2025/12
<b>31.</b>	MOF Membrane-Based Technology for Carbon Capture and Gas Separations, <i>National Science and Technology Council, PI.</i>	NT\$ 5,937,000	2023/08–2026/07
<b>30.</b>	Advanced Carbon Capture & Elimination Process Technology: Integration of Membrane adsorption/separation and Electro/chemical conversion (ACCEPT-ME), <i>National Science and Technology Council, co-PI.</i>	NT\$ 9,000,000	2023/07–2024/06
<b>29.</b>	Fabrication of photothermal-driven water production devices with ultramicroporous MOF thin films, <i>National Science and Technology Council, co-PI.</i>	NT\$ 2,500,000	2023/08–2024/07



28.	Metal-Organic Frameworks: relationships between microscopic gas transport properties and macroscopic membrane separation performance, <i>Ministry of Science and Technology of Taiwan, PI.</i>	NT\$ 9,320,000	2022/08– 2026/07
27.	Investigation of metal-organic frameworks with high water adsorption capacity and their applications in membrane separations	NT\$ 400,000	2022/04– 2022/11
26.	Metal-organic framework membranes for gas separations: key techniques to simultaneously achieve high flux and high selectivity, <i>National Taiwan University, PI.</i>	NT\$ 3,600,000	2022/01– 2024/12
25.	Metal-Organic Frameworks: from Molecular-Level Microstructural Engineering to Industrial-Scale Membrane Separation Processes, <i>Grant for International Outstanding Young Scholars (4<sup>th</sup> year out of 4), Ministry of Science and Technology of Taiwan, PI.</i>	NT\$ 5,072,000	2022/02– 2023/01
24.	Metal-organic frameworks for solvent dehydration, <i>Industrial Technology Research Institute of Taiwan, PI.</i>	NT\$ 400,000	2021/04– 2021/11
23.	Metal-Organic Frameworks: from Molecular-Level Microstructural Engineering to Industrial-Scale Membrane Separation Processes, <i>Young Scholar Fellowship - The Columbus Program (3<sup>rd</sup> year out of 4), Ministry of Science and Technology of Taiwan, PI.</i>	NT\$ 5,681,000	2021/02– 2022/01
22.	Porous Materials for Sorption of Volatile Organic Solvent and for Membrane Fabrication, <i>Industrial Technology Research Institute of Taiwan, PI.</i>	NT\$ 400,000	2020/04– 2020/11
21.	Metal-Organic Frameworks: from Molecular-Level Microstructural Engineering to Industrial-Scale Membrane Separation Processes, <i>Young Scholar Fellowship - The Columbus Program (2<sup>nd</sup> year out of 4), Ministry of Science and Technology of Taiwan, PI.</i>	NT\$ 7,733,000	2020/02– 2021/01
20.	Metal-Organic Frameworks: from Molecular-Level Microstructural Engineering to Industrial-Scale Membrane Separation Processes, <i>Young Scholar Fellowship - The Columbus Program (1<sup>st</sup> year out of 4), Ministry of Science and Technology of Taiwan, PI.</i>	NT\$ 9,500,000	2019/02– 2020/01
19.	Applications of microporous materials on acoustic devices, <i>Luxshare, PI</i>	NT\$ 660,000	2019/02– 2019/12
18.	Fabrication and applications in solvent recovery of metal-organic framework membranes, <i>Industrial Technology Research Institute of Taiwan, PI</i>	NT\$ 400,000	2019/04– 2019/11
17.	Zeolite/ceramic nanotube thin films: fundamentals of wet deposition, key techniques, and device applications, <i>Ministry</i>	NT\$ 1,345,000	2018/08– 2019/04

*of Science and Technology of Taiwan, PI.*

16.	Development of core capability on dispersion and thin film engineering via personnel training (Phase I), <i>LCY Chemical Corp., PI.</i>	NT\$ 1,000,000	2018/08– 2019/07
15.	Simulation and Fabrication of Thermally Driven Drying Devices, <i>Industrial Technology Research Institute of Taiwan, PI</i>	NT\$ 400,000	2018/04– 2018/11
14.	Grant for Academic-Research Careers Development Program, <i>National Taiwan University, PI.</i>	NT\$ 2,300,000	2018/06– 2020/12
13.	Investigation on Water Adsorption Stability of Metal Organic Frameworks, <i>Industrial Technology Research Institute of Taiwan, PI</i>	NT\$ 400,000	2017/04– 2017/11
12.	Ultrasonic Spray for Fabrication of Nanoporous Thin Films, <i>Ministry of Science and Technology of Taiwan – LCY Chemical Corp. (industry-university cooperative research project), PI.</i>	NT\$ 1,354,760	2016/11– 2017/10
11.	Development of a Generalized Methodology for the Fabrication of Thin Films with Microporous Metal Organic Frameworks, <i>Ministry of Science and Technology of Taiwan, PI.</i>	NT\$ 3,451,000	2016/08– 2018/07
10.	Investigation on Water Adsorption Stability of Metal Organic Frameworks, <i>Industrial Technology Research Institute of Taiwan, PI</i>	NT\$ 400,000	2016/04– 2016/11
9.	Concentration Enhancement and Deionization of Polymeric Solutions, <i>LCY Chemical Corp., PI.</i>	NT\$ 700,000	2016/03– 2016/12
8.	Wetting and separation efficiency of polypropylene packing modified by nanoparticles, (Taiwan-South Africa joint project), <i>Ministry of Science and Technology of Taiwan, PI.</i>	NT\$ 874,000	2016/01– 2017/12
7.	Predictions of the cyclic stability of porous CO <sub>2</sub> adsorbent, <i>Industrial Technology Research Institute of Taiwan, PI.</i>	NT\$ 200,000	2015/09– 2015/12
6.	Low-Dimensional Nanoporous Materials: Synthesis Mechanism, Membrane Fabrication, and Application in Separations, <i>Outstanding Young Faculty Grant, Ministry of Science and Technology of Taiwan, PI.</i>	NT\$ 4,638,000	2015/08– 2018/07
5.	Structure-Property-Device Performance Relationships of Inorganic Nanotubes (Career Development Project), <i>National Taiwan University, PI.</i>	NT\$ 1,257,600	2015/08– 2016/12
4.	Microporous Metal-Organic Frameworks (MOFs)-Containing Mixed Matrix Membranes (MMMs) for Pervaporation, <i>NIMS-NTU SMART Center joint grant, co-PI.</i>	NT\$ 650,000	2014/10– 2015/07
3.	Advanced Technique for Fabrication Subnanoporous Films, 2014-2015, <i>Taliang Technology Co., Ltd., PI.</i>	NT\$ 126,000	2014/08– 2015/07
2.	Fundamental Study on the Microstructure of Inorganic	NT\$ 380,000	2014/01–

- Nanotube, *The Tsung Cho-Chang Foundation*, **PI**. 2014/12
1. Fundamentals of Inorganic Nanotubes: Self-assembly NT\$ 2,007,000 2013/09-  
Mechanisms, Morphology Control, and Surface Properties, 2015/07  
*Ministry of Science and Technology of Taiwan*, **PI**,

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