



Academic Appointments & Education	Distinguished Professor	National Taiwan University	2024–present	
	Professor	Department of Chemical Engineering National Taiwan University	2021–present	
	Professor (Joint Appointment)	Center of Condensed Matter Sciences National Taiwan University	2025–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 • CO₂ capture • Pervaporation		
		Honors	• Excellent Teaching Award (9 times), <i>National Taiwan University</i>	2026, 2025, 2024, 2022, 2021, 2020, 2019, 2018, 2016
			• Ching Long-Chanda Chemical Corp. Distinguished Lectureship, <i>National Taiwan University</i>	2024
			• Professor Wei-Ming Lu Innovation Teaching Award, <i>Taiwan Institute of Chemical Engineers</i>	2024
	• Fan-Tsan Chen Lectureship, <i>National Taiwan University</i>		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
- 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

**Editors &
Professional
Services**

- Chairperson of International Affairs Committee at TwIChE 2025-present
- Chairperson of User Executive Committee at National Synchrotron Radiation Research Center 2025
- Vice Chair of User Executive Committee at National Synchrotron Radiation Research Center 2024
- Member of Council at Taiwan Membrane Society 2023-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 (16th ICIM Special Issue)* 2022
- Co-chair of 1st Taipei International Conference on Catalysis 2022
- Organizing committee of 16th International Conference of Inorganic 2022

Membranes (ICIM)

- Co-organizer of 1st 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 3rd ChemE Symposium between Sogang University and NTU 2021
- Co-organizer of 1st ChemE Workshop between KAIST and NTU 2021
- Co-organizer of 3rd International Symposium on Porous Materials 2021
- Associate Editor for *Journal of the Taiwan Institute of Chemical Engineers* 2020–present
- Co-organizer of 2nd International Symposium on Porous Materials 2020 2020
- Co-organizer of Taiwan-Korea Symposium at Annual Meeting of KICChE 2019
- Co-organizer of 2nd ChemE Symposium between Sogang University and NTU 2019
- Co-organizer of 1st ChemE Symposium between Sogang University and NTU 2018
- Organizer of Taiwan-Korea Symposium at Annual Meeting of TwICChE 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 12th World Filtration Congress 2016
- Session chair of the 9th 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

Peer Reviewed Journal Articles

110. Hsiao, L.-W.; Chiu, C.-c.; Lin, L.-C.; **Kang, D.-Y.***, Critical Role of Interfacial Mass Transfer in MOF Membranes for Gas Separation, *Energy Fuels*, **2026**, accepted.
109. Chi, L.-T.; Hsiao, L.-W.; Chuang, C.-H.; **Kang, D.-Y.***, Activation-Controlled Structural Integrity in A520 MOF Membranes for Efficient CO₂/N₂ and CO₂/CH₄ Separation, *ACS Appl. Mater. Interfaces*, **2026**, accepted.
108. Lin, B.-H.; Chuang, C.-H.; Hsiao, L.-W.; Wang, H.-Y.; Chi, L.-T.; Lin, Y.-H.; Lin, L.-C.*; **Kang, D.-Y.***, Controlled Secondary Growth of CAU-1-NH₂ Membranes with Improved CO₂ Separation Performance, *Langmuir*, **2026**, accepted.
107. Thomas, J.; Chen, C.-H.*; Park, G.Y.; Hsu, P.-S.; Wu, P.-C.; Lee, S.-L.; Liu, C.-L.; **Kang, D.-Y.***, Binary-filler engineering of ZIF-8 and mesoporous silica in PEBAX mixed-matrix membranes toward enhanced CO₂ separation performance, *CrystEngComm*, **2026**, accepted.
106. Darban, M.A.; Lock, S.S.M.*; Hussain, W.; Waqas, S.; Lim, L.G.; Lock, I.S.M.; **Kang, D.-Y.**; Othman, M.H.D.; Ban, Z.H.; Yiin, C.L.; Ilyas, S.U.; Cheng, L.J., High-performance [EMIM][Tf₂N]-grafted silica/polysulfone hybrid membranes for enhanced CO₂/CH₄ separation: An

- experimental and computational approach, *J. Taiwan Inst. Chem. Eng.*, **2026**, 188, 106767.
105. Chi, L.-T.; Chuang, C.-H.; Zhuang, X.-L.; Wang, H.-Y.; Nam, K.J.; Chi, H.-Y.; Lee, J.S.*; Lin, L.-C.*; **Kang, D.-Y.***, Mixed-Linker-Directed Seed-Free Growth of CO₂-Selective MOF-303 Membranes, *Adv. Mater. Technol.*, **2026**, 11(10), e01880.
 104. Thomas, J.; Chang, C.-T.; **Kang, D.-Y.***; Tung, K.-L.*; Liu, C.-L.*; Microengineered Polyketone-Nylon Membrane with Thermal Calendaring for Nanomaterial Rejection, *J. Taiwan Inst. Chem. Eng.*, **2026**, 179, 106450.
 103. Chuang, C.-H.; Seong, J.; Hsiao, L.-W.; Lin C.-Y.; Lee, J.S.*; **Kang, D.-Y.***, Critical role in structural optimization and activation of CAU-23 membranes for CO₂ separation, *Small*, **2025**, 21(46), e09215.
 102. Ju, Y.-H.; Hsieh, T.-Y.; Lin, Y.-H.; Liu, C.-L.; **Kang, D.-Y.***; Luo, S.-C.*; Hybrid MOF-Zwitterionic Polymer Membranes for Efficient and Antifouling Solar Seawater Desalination, *ACS Appl. Polym. Mater.*, **2025**, 7(18), 12211–12219.
 101. Wu, P.-C.; Lee, H.J.; Lin, Y.-F.; Tung, K.-L.; Lee, J.S.*; **Kang, D.-Y.***, Tailoring linker defects in MOF-808 to improve CO₂ separation in mixed matrix membranes, *J. Membr. Sci.*, **2025**, 736, 124688.
 100. Lin, Y.-H.; Chou, Y.-C.; Chen, J.-J.; Liu, C.-L.; Luo, S.-C.*; **Kang, D.-Y.***, High-performance interfacial solar steam generation enabled by synergistic integration of MXene, bentonite, and MOF-303, *Sep. Purif. Technol.*, **2025**, 378, 134490.
 99. Loh, J.C.; Lock, S.S.M.*; Lee, B.K.Y.; Darban, M.A.; **Kang, D.-Y.**; Othman, M.H.D.; Ban, Z.H., An atomistical elucidation of the 6FDA-durene-based mixed matrix membrane and ionic liquid mixed matrix membrane for CO₂/CH₄ separation, *Results Eng.*, **2025**, 27, 105939.
 98. Darban, M.A.; Lock, S.S.M.*; Ilyas, S.U.; Waqas, S.; Lim, L.G.; Lock, I.S.M., **Kang, D.-Y.**; Othman, M.H.D.; Yiin, C.L.; Hira, N.e; Bashir, Z., A Critical Review on Advancements and Challenges in CO₂ Gas Separation via 6FDA-based Membranes, Chemical and Water Stabilities, *Carbon Capture Sci. Technol.*, **2025**, 15, 100423.
 97. Hung, L.-I.; Pal, S.; Hsu, T.-T.; Tseng, S.-T.; Wu, T.-L.; So, P.B.*; Chang, Y.-T.; Wang, S.-L.; Wang, Y.-T.; Chen, T.-H.*; Chan, C.-W.; Chen, H.-T.*; **Kang, D.-Y.***; Lin, C.-H.*; Facile Synthesis of Ultramicroporous Organic-Linked Zincophosphate with High Thermal, Chemical and Water Stabilities, *Chem. Eur. J.*, **2025**, e202500136.
 96. Wang, Y.-H.; Hsu, C.-C.; Hong, H.-S.; Ding, J.-F.; Jeng, U.-S.; **Kang, D.-Y.**; Luo, S.-C.; Tung, S.-H.; Liu C.-L.*; A Dual-Function Poly(vinyl alcohol) Hydrogel for Solar Water Production and Thermoelectric Energy Generation, *ACS Sustain. Chem. Eng.*, **2025**, 13(10), 4231–4241.
 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.*, **2025**, 64(2), 1265–1273.
 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.*, **2025**, 11, eads4711.
 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*, **2025**, 21(19), 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), 49640–49650.
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 CO₂/CH₄ 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 co-polyimide 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 CO₂ 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 H₂/CH₄ and CO₂/CH₄ 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 CO₂ 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 C₃H₆/C₃H₈ 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 CO₂/CH₄ 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 CO₂ 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 CO₂ 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 C₃H₆/C₃H₈ 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**, 34(14), 4180-4187.
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.
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Patents	4. Nair, S; Kang, D.-Y.; Brunelli, B.A.; Jones, C.W., Functionalized Single-Walled Nanotubes and Methods Thereof, US Patent # 9290381 B2 3. Nair, S; Kang, D.-Y.; Jones, C.W., Single-Walled Metal Oxide and Metal Sulphide Nanotubes/Polymer Composites, US Patent #9174842 B2 2. Kang, D.-Y.; Nair, S; Jones, C.W., Single-Walled Metal Oxide Nanotubes, US Patent #8637693 B2 1. Wu, E., Kang, D.-Y., Wang, D.-M. Light Emitting Diode Die with at Least One Phosphor Layer and Method for Forming the Same, US Patent #8242517
Invited Lectures	32. Seminar (125th Anniversary), School of Chemical & Biomolecular Engineering at Georgia Institute of Technology, USA Sep. 2025 31. Seminar, Department of Chemical Engineering at National Taiwan University of Science and Technology, Taiwan Nov. 2024 30. Seminar, Department of Chemical and Biochemical Engineering at Sogang University, Taiwan Jun. 2024 29. Seminar, Department of Chemistry at National Central University, Taiwan May 2024 28. Seminar, Department of Environmental Engineering at National Chung Hsing University, Taiwan May 2022 27. Seminar, Department of Environmental Engineering at National Chung Hsing Sep. 2022

	University, Taiwan	
26.	Seminar, Department of Chemical and Materials Engineering at National Central University, Taiwan	Apr. 2020
25.	Seminar, Department of Materials Science and Engineering at National Taiwan University of Science and Technology, Taiwan	Dec. 2019
24.	Seminar, Department of Chemistry at National Tsing Hua University, Taiwan	Dec. 2019
23.	Seminar, Department of Chemical and Biomolecular Engineering at KAIST, Korea	Oct. 2019
22.	Seminar, Entirgis, Hsinchu, Taiwan	Jun. 2019
21.	Seminar, Department of Chemical Engineering at National Tsing Hua University, Taiwan	May 2019
20.	Seminar, Department of Chemical Engineering at National Cheng Kung University, Taiwan	Dec. 2018
19.	Seminar, Department of Chemical Engineering at Inha University, Korea	Aug. 2018
18.	Seminar, LCY Chemical Group, Taiwan	Jun. 2018
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	Aug. 2013

University, Taiwan

1. Nano@Tech Seminar, Institute for Electronics and Nanotechnology at Georgia Institute of Technology, USA Apr. 2013

Conferences		
54.	Kang, D.-Y.* (Invited Speaker) , Next-Generation ChemE Education, <i>TwIChE Annual Meeting</i> , Tainan, Taiwan	Dec. 2025
53.	Kang, D.-Y.* (Invited Speaker) , Mass Transfer in MOF Membranes, <i>CSLT Annual Meeting</i> , Taichung, Taiwan	Mar. 2025
52.	Kang, D.-Y.* (Keynote Speaker) , Mass Transfer in the Ultramicropores within Metal-Organic Framework Membranes, <i>TwIChE Annual Meeting</i> , Taoyuan, Taiwan	Nov. 2024
51.	Kang, D.-Y.* (Invited Speaker) , Investigation of Molecular Transport in MOF Membranes, <i>MOF 2024</i> , Singapore	Jul. 2024
50.	Kang, D.-Y.* (Keynote Speaker) , Understanding molecular transport in MOF membranes, <i>ICOM 2023</i> , Chiba, Japan	Jul. 2023
49.	Kang, D.-Y.* (Keynote Speaker) , MOF membranes for gas separation and pervaporation, <i>AMS annual meeting</i> , Singapore	Jul. 2022
48.	Kang, D.-Y.* (Keynote Speaker) , Recent Advances in MOF Membranes for Gas Separation, <i>16th ICIM</i> , Taipei	Jun. 2022
47.	Kang, D.-Y.* (Invited Speaker) , MOF membranes for gas separations: recent advancement, <i>ICHES</i> , online	Mar. 2022
46.	Kang, D.-Y.* (Invited Speaker) , MOF Membranes for Gas Separations, <i>TwIChE annual meeting</i> , 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, <i>Pacificchem</i> , online	Dec. 2021
44.	Kang, D.-Y.* (Invited Speaker) , Mass Transfer in MOFs and Their Applications on Membrane Gas Separations, <i>MACRO 2020+</i> , online	May 2021
43.	Kang, D.-Y.* (Award Lecture) , Advancing Metal-Organic Framework Membranes for Highly-Efficient Molecular Separations, <i>Annual Meeting of The Society of Chemical Engineers</i> , Japan, online	Mar. 2021
42.	Kang, D.-Y.* (Keynote Speaker) , CO ₂ Selective MOF Membrane with Favorable Charge Effect, <i>30th Anniversary of Membrane Society of Korea</i> , online	Oct. 2020
41.	Kang, D.-Y.* (Invited Speaker) , Emerging Applications of Zeolite/Ceramic Nanotube Thin Films and MOF Membranes for Gas Separations, <i>International Symposium on Porous Materials</i> , Tokyo, Japan	Nov. 2019
40.	Kang, D.-Y.* (Invited Speaker) , Zeolite/MOF membranes for antifogging coating and molecular separations, <i>KICHe Annual Meeting</i> , 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, <i>12th Conference of the Aseanian Membrane Society</i> , Jeju, Korea	Jul. 2019
38.	Kang, D.-Y.* (Invited Speaker) , Influence of Structural Flexibility of MOF	Jun. 2019

- Membranes on Molecular Transport Properties, *International Membrane Conference in Taiwan (IMCT)*, Taipei, Taiwan
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, *2nd 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 or Reusable Resources, *International Symposium on the Circular Economy, Chemical Industry, and Tax Policy*, Taipei, Taiwan Apr. 2018
 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, *7th 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, *7th 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, *12th 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, *1st 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 Membranes Using Atmospheric Pressure Plasma Jet, *Sol-Gel 2015*, Kyoto, Japan Sep. 2015
13. **Kang, D.-Y.***, Ultra Thin Nanotube Composite Membranes for Molecular Separations, *9th 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 CO₂ 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 Oct. 2012

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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, *Pacificchem*, 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

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, Sp 2025, Sp 2026

Contact	Address	Department of Chemical Engineering National Taiwan University No. 1, Sec. 4, Roosevelt Road Taipei 106319, Taiwan
	Tel	+886-2-33661767
	Email	dunyen@ntu.edu.tw
	Website	http://dunyen-ntu.net
	ORCID	0000-0002-2349-4432