

國立中央大學工學院院長候選人資料表

一、個人基本資料

姓名	曹恆光	性別	男	生日	████████	電子信箱	████████
服務單位	國立中央大學 化學工程與材料工程學系					職稱	講座教授
通訊地址	████████████████████			聯絡方式		████████████████████	
學歷	<ul style="list-style-type: none"> ● 1994 Ph.D. Department of Chemical Engineering, Cornell University ● 1988 M.S. 國立臺灣大學 化學工程學系 ● 1986 B.S. 國立臺灣大學 化學工程學系 						
經歷	服務單位		專/兼任	職稱		起迄年月	
	國科會「工程領域產學合作推動規劃計畫」		兼任	共同主持人		2023/01-迄今	
	ACS Langmuir		兼任	Senior Editors		2020/01-迄今	
	Journal of the Taiwan Institute of Chemical Engineers (JTICE)		兼任	Editor-in-Chief		2018/07-迄今	
	科技部 循環材料高值化旗艦專案計畫		兼任	推動辦公室 主持人		2015/04-2021/07	
	中華工程教育學會(IEET)		兼任	團主席、認證委員、EAC 委員		2006/01-迄今	
	台灣化工學會 教育委員會		兼任	主任		2017/01-2018/12	
	科技部工程司 化工學門		兼任	複審委員		2015/01-迄今	
	科技部 化工學門		兼任	召集人		2015/01-2017/12	
	經濟部之中小型低碳及智慧化升級轉型個案補助計畫		兼任	主審及審查委員		2023/01-迄今	
	經濟部綠色工廠標章之清潔生產技術審查		兼任	主審及審查委員		-迄今	
	經濟部產業技術司 A+企業創新研發淬鍊計畫		兼任	主審及審查委員		-迄今	
	國立中央大學 化學工程與材料工程系		兼任	系主任		2011/08-2014/07	
	國立中央大學 秘書室		兼任	主任秘書		2009/02-2011/08	
國立中央大學 研發處		兼任	企劃組組長		2000/08-02004		
國立中央大學 化學工程與材料工程系		專任	講座教授		2014/01-迄今		

二、近年著作目錄

1. Tsao Y.-H., Liao Y.-C., & Tsao H.-K. * (2024) , Capillary flow in nanoslits: Transition from deviation to conformance with the Lucas-Washburn equation , *Physics of Fluids* , 36(9)
2. Huang C.-Y., Chang H.-Y., Tsao H.-K.*, & Sheng Y.-J.* (2024) , Water wicking in phosphorene-based nanochannels: Effect of surface texture , *Journal of Molecular Liquids* , 411
3. Hu H.-W., Tsao H.-K.*, & Sheng Y.-J.* (2024) , Impact of Nonsolvent-Solvent Affinity on Membrane Morphology and Microstructure: Unraveling the Transition from Traversing Pore to Closed Void Structures , *Macromolecules* , 57(15) , 7640-7653
4. Arjunan K.K.,Weng C.-Y., Sheng Y.-J*., & Tsao H.-K.* (2024) , Formation of Self-Healing Granular Eutectogels through Jammed Carbopol Microgels in Supercooled Deep Eutectic Solvent , *Langmuir* , 40(32) , 17081-17089
5. Chang H.-Y., Tsao H.-K.*, & Sheng Y.-J.* (2024) , Enhancement of capillary flow via precursor film thickening in graphene nanochannels , *Journal of Molecular Liquids* , 410
6. Lin Y.-F., & Tsao H.-K.* (2024), Advances in Photocatalytic Nanocomposites for Environmental Applications , *Journal of the Taiwan Institute of Chemical Engineers* , 164
7. He G.-Y.,Wang Y.-C., Tsao H.-K.*, & Sheng Y.-J.* (2024), Wicking dynamics of two-ply channels in porous medium-based microfluidic devices , *Physics of Fluids* , 36(6)
8. He G.-Y.,Tsao H.-K.*, & Sheng Y.-J.* (2024) , Capillary flow in nanoporous media: effective Laplace pressure , *Colloids and Surfaces A: Physicochemical and Engineering Aspects* , 699
9. Vo T.H.,Lam P.K.,Chuang R.-M.,Shieh F.-K., Sheng Y.-J.*,& Tsao H.-K.* (2024) , One-step, additive-free fabrication of highly stretchable and ultra-tough physical polyvinyl alcohol-based eutectogels for strain sensors , *Chemical Engineering Journal* , 493
10. Huang H.-Y.,Tsao Y.-H., Sheng Y.-J.*,& Tsao H.-K.* (2024) , Peculiar wetting behavior of nanodroplets comprising antagonistic alcohol-water mixtures on a graphene surface , *Surfaces and Interfaces* , 51
11. Tsao Y.-H.,Liao Y.-C., & Tsao H.-K.* (2024) , Channel width-dependent viscosity and slip length in nanoslits and effect of surface wettability , *Physics of Fluids* , 36(5)
12. Huang H.-C.,Lin C.-J., Sheng Y.-J.*,& Tsao H.-K.* (2024) , Instability of membranes containing ionizable cationic lipids: Effects of the repulsive range of headgroups and tail structures , *Colloids and Surfaces B: Biointerfaces* , 236
13. Hu H.-W., Tsao H.-K.*, & Sheng Y.-J.* (2024), Nonsolvent-Induced Solidification of Droplets of a Polymer Solution: From a Sphere to a Capsule , *Macromolecules* , 57(3) , 847-857
14. Huang W.-J.,Vo T.H., Sheng Y.-J.* , & Tsao H.-K.* (2024) , Stretchable and conductive physical eutectogel based on type IV deep eutectic solvent through cation-bridging , *Journal of Molecular Liquids* , 396 , 109-2221-E-008-026-MY3
15. Vo T.H.,Lam P.K.,Hsiao T.-F.,Chin C.-J.M., Sheng Y.-J.*,& Tsao H.-K.* (2024) , One-step Fabrication of Physical Eutectogel with Recyclability: Crystalline Domain Regulation Induced by Microgels , *Journal of Colloid and Interface Science* , 659 , 495-502 , 109-2221-E-008-026-MY3
16. Chiu Y.-C.,Vo T.H., Sheng, Yu-Jane*,& Tsao H.-K.* (2023) , Spontaneous Formation of Microgels for a 3D Printing Supporting Medium , *ACS Applied Polymer Materials* , 5(1) , 764-774 , 109-2221-E-008-026-MY3

17. Nuthalapati K., Sheng Y.-J*., & **Tsao H.-K.*** (2023) , Atypical wetting behavior of binary mixtures of partial and total wetting liquids: leak-out phenomena , *Colloids and Surfaces A: Physicochemical and Engineering Aspects* ,666
18. Chang H.-Y., **Tsao H.-K.***, & Sheng Y.-J.* (2023) , Solid-like elastic behavior of nanosized concentrated emulsions: Size-dependent Young's and bulk moduli , *Journal of Molecular Liquids* , 380
19. Nuthalapati K., Sheng Y.-J.* ,& **Tsao H.-K.*** (2023) , Evaporation-driven directed motion of droplets on the glass , *Surfaces and Interfaces* , 38
20. Hsieh W.-Z.,Tsao Y.-H.,**Tsao H.-K.***, & Sheng Y.-J.* (2023) , Diverse wetting behavior of a binary mixture of antagonist liquids: Nanodroplet with finite precursor film and leak-out phenomenon , *Journal of Molecular Liquids* , 372
21. Hsieh M.-C.,Tsao Y.-H., Sheng Y.-J.*,& **Tsao H.-K.*** (2023) , Microstructural Dynamics of Polymer Melts during Stretching: Radial Size Distribution , *Polymers* , 15(9)
22. Chang H.-Y.,**Tsao H.-K.***, & Sheng Y.-J.* (2023) , Abnormal wicking dynamics of total wetting ethanol in graphene nanochannels , *Physics of Fluids* , 35(5)
23. Hu H.-W.,**Tsao H.-K.***, & Sheng Y.-J.* (2023) , Solidification dynamics of polymer membrane by solvent extraction: Spontaneous stratification , *Journal of Membrane Science* , 683
24. Chang S.-Y., Sheng Y.-J.*,& **Tsao H.-K.*** (2023) , Abnormal wetting behavior of supercooled deep eutectic solvents , *Journal of Molecular Liquids* , 387
25. Vo T.H.,Lam P.K., Sheng Y.-J.*,& **Tsao H.-K.*** (2023) , Jammed Microgels in Deep Eutectic Solvents as a Green and Low-Cost Ink for 3D Printing of Reliable Auxetic Strain Sensors , *ACS applied materials & interfaces* , 15(27) ,33109-33118 , 109-2221-E-008-026-MY3
26. Chen G.-L.,He G.-Y., Sheng Y.-J.*,& **Tsao H.-K.*** (2023) , Imbibition Dynamics in a U-Groove Microchannel with Sudden Enlargement , *Langmuir*, 39, 10993-11002
27. Heinz H.,Joshi Y.M.,Zeng H.,**Tsao H.-K.***,de Beer S.J.A.,Koos E.,Takahara A.,&Walker G.C. (2023) , 2023 Highlights in Interface Science and Engineering: A Collection of Virtual Special Issues , *Langmuir* , 39(31) ,10711-10714
28. Nuthalapati K., Sheng Y.-J.*,& **Tsao H.-K.*** (2023) , Ag NPs-coated polyurethane sponge as a water filter for removal of toxic metal ions at high concentrations , *Chemosphere* , 343
29. Lam P.K.,Vo T.H.,Chen J.-H.,Lin S.-W.,Kuo C.-L.,Liao J.-J.,Chen K.-Y.,Huang S.-R.,Li D.,Chang Y.-H.,Chen H.-Y.,Hsieh H.-T.,Hsu Y.-A., **Tsao H.-K.***,Yang H.-C.,&Shieh F.-K. (2023) , A green and ultrafast one-pot mechanochemical approach for efficient biocatalyst encapsulation in MOFs: insights from experiments and computation , *Journal of Materials Chemistry A* , 11(45) , 24678-24685 , 109-2221-E-008-026-MY3
30. Tsao Y.-H.,Liao Y.-C.,& **Tsao H.-K.*** (2023) , Sliding motion of highly deformed droplets on smooth and rough surfaces: Shape oscillation, chaotic breakage, corner shape, and pearling , *Physics of Fluids* , 35(12)
31. **Tsao H.-K.** ; Gilbert C. Walker (2022)“Virtual Issue: Wettability Gradient Surfaces,” *Langmuir*, 38(2) , 603-604.
32. Yu-Ming Huang; Sheng, Yu-Jane*;**Tsao H.-K.*** (2022) “Peculiar encounter between self-propelled droplet and static droplet: swallow, rerouting, and recoil,” *J. Mol. Liq.*, 347, 118378.
33. Guan-Yu He; Tsao, **Tsao H.-K.***; Sheng, Yu-Jane* (2022) “Imbibition dynamics in an open-channel capillary with holes,” *J. Mol. Liq.*, 349, 118117.

34. Karthik Nuthalapati; Sheng, Yu-Jane*; Tsao H.-K.* (2022) “Anomalous interfacial dynamics of pendant droplets of N,N-dimethylformamide containing Silwet,” *J. Taiwan Inst. Chem. Eng.*, 133, 104282.
35. Ting-Ya Wang; Hsin-Yu Chang; Guan-Yu He; Tsao, Tsao H.-K.*; Sheng, Yu-Jane* (2022) “Anomalous spontaneous capillary flow of water through graphene nanoslits: Channel width-dependent density,” *J. Mol. Liq.*, 352, 118701.
36. Kang-Ching Chu; Yu-Hao Tsao; Tsao H.-K.*; Sheng, Yu-Jane* (2022) “Spontaneous formation of nanopores within a nanofilm: Phase diagram and multiple stable states,” *J. Mol. Liq.*, 360, 119541.
37. Karthik Nuthalapati; Sheng, Yu-Jane*; Tsao H.-K.* (2022) “Abnormal wetting dynamics of Silwet-laden droplets on partially wetting substrates,” *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 648, 129381.
38. Guan-Yu He; Tsao H.-K.*; Sheng, Yu-Jane* (2022) “Wicking dynamics into two-rail open channel with periodical branches,” *Physics of Fluids*, 34, 102004.
39. Yueh-Chi Tseng ; Hsin-Yu Chang ; Sheng, Yu-Jane*; Tsao H.-K.* (2022) “Atypical vesicles and membranes with monolayer and multilayer structures formed by graft copolymers with diblock side-chains: nonlamellar structures and curvature-enhanced permeability,” *Soft Matter.*, 18, 7559-7568.
40. Yi-Ting Cheng; Hsin-Yu Chang; Tsao H.-K.*; Sheng, Yu-Jane* (2022) “Imbibition dynamics and steady flows in graphene nanochannels with sparse geometric and chemical defects,” *Physics of Fluids*, 34, 112003.
41. Chang, Hsin-Yu; Tsai, Hsiang-Chi; Sheng, Yu-Jane*; Tsao H.-K.* (2021) “Floating and Diving Loops of ABA Triblock Copolymers in Lipid Bilayers and Stability Enhancement for Asymmetric Membranes,” *Biomacromolecules*, 22, 2, 494-503.
42. Cheng, Yi-Ting; Tsao H.-K.* ; Sheng, Yu-Jane* (2021) “Non-affinity adsorption of nanorods onto smooth walls via an entropy driven mechanism,” *Soft Matter*, 17, 23, 5756-5762.
43. Hu, Ssu-Wei; Chen, Kuan-Yu; Sheng, Yu-Jane*; Tsao H.-K.* (2021) “Directed self-propulsion of droplets on surfaces absent of gradients for cargo transport,” *Journal of Colloid and Interface Science*, 586, 469-478.
44. Chang, Hsin-Yu; Chiu, Po-Hao; Tsao H.-K.*; Sheng, Yu-Jane* (2021) “Strengthening mechanism of the mechanical properties of graft copolymers with incompatible pendant groups: nano-clusters and weak cross-linking,” *Soft Matter*, 17, 23, 5730-5737.
45. Wang, Zhengjia; Chu, Kang-Ching; Tsao H.-K.*; Sheng, Yu-Jane* (2021) “Preferred penetration of active nano-rods into narrow channels and their clustering,” *Physical Chemistry Chemical Physics*, 23, 30, 16234-16241.
46. Cheng, Yi-Ting; Tsao H.-K.*; Sheng, Yu-Jane* (2021) “Interfacial assembly of nanorods: smectic alignment and multilayer stacking,” *Nanoscale*, 13, 33, 14236-14244.
47. Chu, Kang-Ching; Tsao H.-K.*; Sheng, Yu-Jane* (2021) “Spontaneous spreading of nanodroplets on partially wetting surfaces with continuous grooves: Synergy of imbibition and capillary condensation,” *Journal of Molecular Liquids*, 339, 117270.
48. Vo, Trung Hieu; Lam, Phuc Khanh; Sheng, Yu-Jane*; Tsao H.-K.* (2021) “Amphibious superamphiphilic polystyrene monolith with underwater superoleophilicity: Capture of underwater oil,” *Applied Surface Science*, 570, 151142.

49. Tsao, Yu-Hao; Wang, Ting-Ya; **Tsao H.-K.***; Sheng, Yu-Jane* (2021) “Thermally assisted mobility of nanodroplets on surfaces with weak defects,” *Journal of Colloid and Interface Science*, 604, 150-156.
50. **Tsao H.-K.***; Jiang, S. (2020), Recent Highlights on Interfaces from China. *Langmuir*, 36 (23), 6325.
51. Liao, W. J.; Chu, K. C.; Tsao, Y. H.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Size-Dependence and Interfacial Segregation in Nanofilms and Nanodroplets of Homologous Polymer Blends. *Phys Chem Chem Phys*, 22 (38), 21801-21808.
52. Chang, T. A.; Hsu, W. J.; Hung, T. H.; Hu, S. W.; **Tsao H.-K.***; Zou, C. L.; Lin, L. C.; Kang, Y. H.; Chen, J. J.; Kang, D. Y. (2020), Toward Long-Lasting Low-Haze Antifog Coatings Through The Deposition of Zeolites. *Ind Eng Chem Res*, 59, 13042-13050.
53. Yang, Y. L.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Morphology and Wetting Stability of Nanofilms of ABC Miktoarm Star Terpolymers. *Macromolecules*, 53 (2), 594-601.
54. Wang, T.-Y.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Perforated Vesicles of ABA Triblock Copolymers with ON/OFF-Switchable Nanopores. *Macromolecules*, 53 (23), 10582-10590.
55. Tsai, H. C.; Yang, Y. L.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Formation of Asymmetric and Symmetric Hybrid Membranes of Lipids and Triblock Copolymers. *Polymers (Basel)*, 12 (3).
56. Teng, K. W.; Tu, S. H.; Hu, S. W.; Huang, Y. X.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Abnormal Redeposition of Silicate from Si₃N₄ Etching onto SiO₂ Surfaces in Flash Memory Manufacturing. *J. Mater. Sci.*, 55 (3), 1126-1135.
57. Peng, Y. S.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Partition of Nanoswimmers between Two Immiscible Phases: A Soft and Penetrable Boundary. *Soft Matter*, 16 (21), 5054-5061.
58. Nguyen, T. P.; Hu, S.-W.; Lin, Y.-J.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Coexistence of Liquid-like Emulsion and Solid-like Emulsion Glass Beyond The Close-packing Limit. *J. Taiwan Inst. Chem. Eng.*, 115, 28-34.
59. Nguyen, T. P.; Hu, S. W.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Scanty-Water Oil-in-Water Emulsion Glasses Synthesized through A Low-Energy Process: Nucleation and Growth Mechanism. *J. Taiwan Inst. Chem. Eng.*, 109, 129-136.
60. Hu, S.-W.; Singh, V.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Facilely-Fabricated Smart Hydroxyl-Surfaces with Rapidly Switchable Wettability for Water and Oil: Reversibility between Superoleophilicity and Near Superoleophobicity. *J. Taiwan Inst. Chem. Eng.*, 107, 182-188.
61. Hu, S. W.; Sung, P. J.; Nguyen, T. P.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), UV-Resistant Self-Healing Emulsion Glass as a New Liquid-like Solid Material for 3D Printing. *ACS Appl Mater Interfaces*, 12 (21), 24450-24457.
62. Chu, K. C.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Pressure-Gated Capillary Nanovalves Based on Liquid Nanofilms. *J Colloid Interface Sci*, 560, 485-491.
63. Cheng, Y.-T.; Chu, K.-C.; **Tsao H.-K.***; Sheng, Yu-Jane* (2020), Size-Dependent Behavior and Failure of Young’s Equation for Wetting of Two-Component Nanodroplets. *J. Colloid Interface Sci.*, 578, 69-76.

三、曾獲之榮譽、獎項及其他重要貢獻

項目	年份	名稱
國內外重要獎項及其他榮譽	2024	Physics of Fluids Editor's Pick ● Wicking dynamics of two-ply channels in porous medium-based microfluidic devices ● Surface wettability and capillary flow of water in nanoslits of two-dimensional hexagonal-boron nitride
	2023	Featured Article : Sliding motion of highly deformed droplets on smooth and rough surfaces: shape oscillation, chaotic breakage, corner shape, and pearling
	2020、2021	科技部 未來科技獎
	2021	台灣化工學會毛高文教授獎(化工學會重要獎項)&石延平教授論文獎
	2007、2020	科技部 傑出研究獎
	2017	中國工程師學會 傑出工程教授獎
	2016	台灣化工學會傑出論文獎
	2013	台灣化工學會賴再得教授獎(化工學會重要獎項)
	1998	台灣化工學會學術勵進獎
國際研討會邀請專題演講或規劃委員	2023	2023 ACCIS Plenary Speaker
	2023	尖端生醫材料與醫用薄膜技術研習會之 Plenary Speaker
	2023	69週年化工年會講者
	2022	69週年化工年會學術論壇之特邀講者
	2022	國立中正大學 化工系 專題演講 (石延平教授講座)
	2021	國立成功大學 化工系 專題演講 (石延平教授講座)
	2021	國立政治大學 應物所 專題演講
	2019	化工年會 邀請[循環經濟論壇]主題演講
	2018	Elsevier [期刊收錄 Scopus 與經營管理分享會] 邀請演講
2018	海峽兩岸化學工程學術研討會 組織委員會委員	
國際重要委員會之委員	2015-2021	科技部循環材料高值化專案計畫 辦公室主持人
	2015-2017, 2019-至今	科技部化工學門 複審委員
	2020-至今	ACS Langmuir 期刊 Senior Editor
	2018-至今	台灣化工會誌(JTICE) Editor-in-Chief
	2006-至今	中華工程教育學會 (IEET) 認證委員、團主席、及 EAC 委員
	2017-2018	台灣化工學會教育委員會 主任
	2015-2017	科技部化工學門 召集人
	2000-至今	國際知名學術期刊之評審委員： Journal of the American Chemical Society, Macromolecules, , Journal of Colloid and Interface Science, Chemical Engineering Journal
校內	2023	優良產學貢獻獎、優良論文貢獻獎、教師及研究人員校務服務績優獎
	2007、2014、2018、2021	院級教學優良教師獎
	2011、2013、2015	校教學優良教師獎
	2008、2009	優良導師獎
	2007-至今	化材系講座教授
	2005-2007	特聘教授

四、治院理念

願景：推動中大工學院成為國內產學研界重要的工學院。

目標：營造良好的教學與研究環境，促進學生與教師的向上發展。

治院理念：秉持「勤勉務實、溝通交流、同心協力、超越自我、共榮共好」的精神，服務工學院。

■ 院務推動方面

- (1) 持續深化各系所的特色，幫助解決改善各系所的困境。
- (2) 積極促進校友聯繫，充分利用校友的資源和能量。
- (3) 規劃院務未來發展計畫，訂定各階段之目標及策略。
- (4) 整合橫向資源，提升學院運作效益。
- (5) 強化學院人力，推動專案行動團隊。

■ 教學方面

- (1) 推動實踐「永續發展」與「人工智能」教育，培育新世代學生。
- (2) 鼓勵跨域學習與學生社群，設置創意思考與實作空間。
- (3) 提升學生的外語能力，加強其國際經驗。
- (4) 強化教學實驗室，依據國際現勢與產業現況設計新的實驗與實作內容。
- (5) 拓展外籍碩博班的招生，協助培育本土高等研發人才。

■ 研究方面

- (1) 設置獎勵措施，鼓勵協助教師提升學術研究。
- (2) 協助工學院爭取各種機會與資源，深化研究成果，並擴大研發的影響力。
- (3) 積極促成工學院研究團隊，擴散研發能量，爭取各類產學合作計畫。
- (4) 增強國際學術交流，積極促成與各國研究機構建立合作關係。
- (5) 積極協助年輕教師，提供各式資源，解決改善其困境。
- (6) 招攬優秀人才，彈性合理升等制度，提供優質研發環境。