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Professor

B.S. in Chemical Engineering  
National Taiwan University, 1980  
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#### **Research and Professional Interests**

Gas hydrates  
Interfacial phenomena  
Superhydrophobic surfaces  
Phase behavior experiments and Interfacial  
behavior measurements  
Liquid crystal alignment film

#### **Journal Papers**

1. C. H. Su and **L. J. Chen**, "Phase behavior and interfacial tensions in the ternary systems water plus dodecane plus propylene glycol n-propyl ether and water plus tetradecane plus propylene glycol n-propyl ether", *Journal of the Taiwan Institute of Chemical Engineers*, 68, 74-79, 2016(Nov), (SCI,EI)
2. J. Y. Wu, **L. J. Chen**, Y. P. Chen and S. T. Lin, "Molecular dynamics study on the nucleation of methane plus tetrahydrofuran mixed guest hydrate", *Physical Chemistry Chemical Physics*, 18(15), 9935-9947, 2016(Apr), (SCI,EI)
3. Y. H. Hsu, H. W. Tsui, S. Y. Ling and **L. J. Chen**, "The origin of anomalous positive heat capacity change upon micellization of Pluronic triblock copolymer F108 in aqueous solutions: Effect of PEO-PPO diblock impurities", *Colloids and Surfaces a-Physicochemical and Engineering Aspects*, 509, 109-115, 2016(Nov), (SCI,EI)
4. S. A. Pillai, C. F. Lee, D. Ray, V. K. Aswal, H. Pal, **L. J. Chen** and P. Bahadur, "Microstructure of copolymeric micelles modulated by ionic liquids: investigating the role of the anion and cation", *Rsc Advances*, 6(90), 87299-87313, 2016, (SCI,EI)
5. S. A. Pillai, C. F. Lee, **L. J. Chen**, P. Bahadur, V. K. Aswal and P. Bahadur, "Thermal and scattering studies of Tetronic (R) 1304 micelles in the presence of industrially important glycols, their oligomers, cellosolves, carbitols, ethers and esters", *Colloids and Surfaces a-Physicochemical and Engineering Aspects*, 506, 576-585, 2016(Oct), (SCI,EI)
6. S. A. Pillai, C. F. Lee, **L. J. Chen**, V. K. Aswal and P. Bahadur, "Glycine elicited self-assembly of amphiphilic star block copolymers with contradistinct hydrophobicities", *Colloids and Surfaces a-Physicochemical and Engineering Aspects*, 506, 234-244, 2016(Oct), (SCI,EI)
7. C. K. Chu, S. T. Lin, Y. P. Chen, P. C. Chen and **L. J. Chen**, "Chain length effect of ionic liquid 1-alkyl-3-methylimidazolium chloride on the phase equilibrium of methane hydrate", *Fluid Phase Equilibria*, 413, 57-64, 2016(Apr), (SCI,EI)
8. M. Khimani, H. W. Tseng, V. K. Aswal, **L. J. Chen** and P. Bahadur, "Salt-assisted microstructure evaluation of hydrophilic block copolymer F98: A thermal and scattering study", *Journal of Molecular Liquids*, 246, 363-371, 2017(Nov), (SCI,EI)
9. B. Y. Liu, C. H. Meng and **L. J. Chen**, "Role of Monomer Alkyl Chain Length in Pretilt Angle Control of Polymer-Stabilized Liquid Crystal Alignment System", *Journal of Physical Chemistry C*, 121(38), 21037-21044, 2017(Sep), (SCI,EI)
10. B. Sarac, Z. Medos, A. Cognigni, K. Bica, **L. J. Chen** and M. Bester-Rogac, "Thermodynamic study for micellization of imidazolium based surface active ionic liquids in water: Effect of alkyl chain length and anions", *Colloids and Surfaces a-*

- Physicochemical and Engineering Aspects, 532, 609-617, 2017(Nov), (SCI,EI)
11. H. W. Tseng, P. C. Chen, H. W. Tsui, C. H. Wang, T. Y. Hu and **L. J. Chen**, "Effect of molecular weight of poly(acrylic acid) on the interaction of oppositely charged ionic surfactant-polyelectrolyte mixtures", *Journal of the Taiwan Institute of Chemical Engineers*, 92, 50-57, 2018(Nov)
  12. Y. A. Chen, C. K. Chu, Y. P. Chen, L. S. Chu, S. T. Lin and **L. J. Chen**, "Measurements of diffusion coefficient of methane in water/brine under high pressure", *Terrestrial Atmospheric and Oceanic Sciences*, 29(5), 577-587, 2018(Oct)
  13. S. A. Pillai, C. F. Lee, D. Ray, V. K. Aswal, M. R. Wang, **L. J. Chen** and P. Bahadur, "Influence of urea on single and mixed micellar systems of Tetronics (R)", *Journal of Molecular Liquids*, 252, 9-17, 2018(Feb)
  14. C. F. Lee, H. W. Tseng, P. Bahadur and **L. J. Chen**, "Synergistic Effect of Binary Mixed-Pluronic Systems on Temperature Dependent Self-assembly Process and Drug Solubility", *Polymers*, 10(1), 105, 2018(Jan)
  15. S. A. Pillai, E.V. Lage, M. Casas, I. Sández-Macho, M.R. Wang, **L.J. Chen** and P. Bahadur, "A comparative study on the effect of structural variations of co-solvent on the Tetronic® micelles with widely different hydrophobicity", *Journal of Molecular Liquids*, 282, 97-104, 2019(May), (SCI,EI)
  16. I. V. Postnova, **L.J. Chen** and Y.A. Shchipunov, "The Formation of Macropores in a Bimodal Silica Synthesized on P123 Block Copolymer as a Template", *Colloid Journal*, 81(2), 158-164, 2019(May), (SCI,EI)
  17. Y.A. Chen, L.K. Chu, C.K. Chu, R. Ohmura and **L.J. Chen**, "Synthesis of Methane Hydrate from Ice Powder Accelerated by Doping Ethanol into Methane Gas", *Scientific Reports*, 9, 12345, 2019(August), (SCI,EI)
  18. C.F. Lee, C.H. Yang, T.L. Lin, P. Bahadur and **L.J. Chen**, "Role of Molecular Weight and Hydrophobicity of Amphiphilic Tri-block Copolymers in Temperature-Dependent Comicellization Process and Drug Solubility", *Colloids and Surfaces B: Biointerfaces*, 183, 110461, 2019(September), (SCI,EI)
  19. B.Y. Liu, R. Seemann, **L.J. Chen** and M. Brinkmann, "Directional liquid wicking in regular arrays of triangular posts", *Langmuir*, 35(50), 16476-16486, 2019(Nov), (SCI,EI)
  20. B. Vyas, S.A. Pillai, D. Ray, V.K. Aswal, M.R. Wang, **L.J. Chen** and P. Bahadur, "Interactions of Alkyltriphenyl Phosphonium Based Ionic Liquids with Block Copolymer Microstructures: A Multitechnique Study", *Journal of Molecular Liquids*, 300, 112341, 2020(Feb), (SCI,EI)
  21. Ryo Koyama, Li-Jen Chen, Saman Alavi and Ryo Ohmura, "Improving thermal efficiency of hydrate-based heat engine generating renewable energy from low-grade heat sources using a crystal engineering approach", *Energy* 198, 117403, 2020, (SCI,EI)
  22. Kai-Chieh Yang, Chieh Wang, Ting-Yu Hu, Hui-Ping Lin, Kuan-Hung Cho and Li-Jen Chen, "Self-Pinning of Silica Suspension Droplets on Hydrophobic Surfaces", *Journal of Colloid and Interface Science* 579, 212-220, 2020.
  23. Chin-Fen Lee, Mu-Rong Wang, Tsang-Lang Lin, Ching-Hsun Yang, and Li-Jen Chen, "Dynamic Behavior of the Structural Phase Transition of Hydrogel Formation Induced by Temperature Ramp and Addition of Ibuprofen", *Langmuir* 36, 8929-8938, 2020.
  24. O. N. Khlebnikov, I. V. Postnova, Li-Jen Chen and Yu. A. Shchipunov, "Silication of dimensionally stable cellulose aerogels for improving their mechanical properties", *Colloid Journal* 82(4), 448-459, 2020.

25. Kuang-Yu Chang, Che-Kang Chu, Lee-Shin Chu, Yen-An Chen, Shiang-Tai Lin, Yan-Ping Chen and Li-Jen Chen, "Effect of Small Cage Guests on Dissociation Properties of Tetrahydrofuran Hydrates", *J. Phys. Chem. B* 124, 7217–7228, 2020.
26. Riku Matsuura, Kosuke Watanabe, Yuji Yamauchi, Haruka Sato, Li-Jen Chen, and Ryo Ohmura, "Theoretical analysis on thermodynamic performance of hydrate-based refrigeration cycle", *Energy* 220, 119652, 2021.
27. Pooja Patidar, Bharatkumar Kanoje, Anita Bahadur, Ketan Kuperkar, Debes Ray, Vinod KAswal, Mu-Rong Wang, Li-Jen Chen, and Pratap Bahadur, "Micellar characteristics of an amphiphilic star-block copolymer in DES-water mixture", *Colloid and Polymer Science* 299, 117–128, 2021.
28. Chao-Jen Wang, Wei-Fan Kuan, Hui-Ping Lin, Yury A. Shchipunov, and Li-Jen Chen, "Facile hydrophilic modification of polydimethylsiloxane-based sponges for efficient oil-water separation", *Journal of Industrial and Engineering Chemistry*, 96, 144-155, 2021.

### Conference Papers

1. **Li-Jen Chen**, Shiang-Tai Lin and Yan-Ping Chen, "Prediction of phase boundary of gas hydrate in the presence of additives by using an explicit pressure-dependent Langmuir adsorption constant in the van der Waals-Platteeuw model", Gordon Research Conference: Natural Gas Hydrate Systems, Galveston, Texas, USA, 2016(Feb)
2. Kai-Chieh Yang, Shih-Yao Lin and **Li-Jen Chen**, "Effect of Particle Size and Surface Hydrophobicity on Critical Pinning Concentration of Coffee-Ring Formation", 2016 Symposium on Thermodynamics & Process Systems Engineering, Xitou, Taiwan, 2016(May)
3. Hsueh-Wen Tseng, Chin-Fen Lee and **Li-Jen Chen**, "Effect of Chain Length and Hydrophobicity of Pluronic Surfactants on the Aggregation Behavior of Binary Mixed-Pluronic Systems", 2016 Symposium on Thermodynamics & Process Systems Engineering, Xitou, Taiwan, 2016(May)
4. Che-Kang Chu, Liang-Kai Chu and **Li-Jen Chen**, "Phase boundary and heat of dissociation of the THF/methane mixed hydrates", 2016 Symposium on Thermodynamics & Process Systems Engineering, Xitou, Taiwan, 2016(May)
5. Yen-An Chen, Che-Kang Chu, and **Li-Jen Chen**, "Measurement of Diffusion Coefficients of Methane in Brine at High Pressure", 2016 Symposium on Thermodynamics & Process Systems Engineering, Xitou, Taiwan, 2016(May)
6. Shan Li and **Li-Jen Chen**, "Contact Angle Hysteresis of a Water Droplet on Regular Pillar-like Hydrophilic Patterned Surfaces", 2016 Symposium on Thermodynamics & Process Systems Engineering, Xitou, Taiwan, 2016(May)
7. Che-Kang Chu, Cheng-Yueh Wei, Yan-Ping Chen, Shiang-Tai Lin, and **Li-Jen Chen**, "Effect of Ionic Liquids on the Phase Behaviour of Methane Hydrate", 24th IUPAC International Conference on Chemical Thermodynamics, Guilin, China, 2016(Aug), (Invited talk)
8. Chin-Fen Lee and **Li-Jen Chen**, "Kinetic effect of Pluronic F108 aqueous solutions on the gel formation", 30th Conference of the European Colloid and Interface Society, Rome, Italy, 2016(Sep)
9. Kai-Chieh Yang, Shih-Yao Lin and **Li-Jen Chen**, "Effect of Particle Size and Surface Hydrophobicity on Critical Pinning Concentration of Coffee-Ring Formation", 30th

- Conference of the European Colloid and Interface Society, Rome, Italy, 2016(Sep)
10. Shan Li and **Li Jen Chen**, "Contact Angle Hysteresis of a Water Droplet on Regular Pillar-like Hydrophilic Patterned Surfaces", 30th Conference of the European Colloid and Interface Society, Rome, Italy, 2016(Sep)
  11. Liang-Kai Chu, Yen-An Chen, Che-Kang Chu, Po-Chun Chen and **Li-Jen Chen**, "Using Ethanol as a Kinetic Promoter for Methane Hydrate Formation", 13th International Conference on Gas in Marine Sediments, Tromsø, Norway, 2016(Sep)
  12. Yen-An Chen, Che-Kang Chu, and **Li-Jen Chen**, "Determination of the Diffusion Coefficients of Methane in Water/Brine at 100 bar", 13th International Conference on Gas in Marine Sediments, Tromsø, Norway, 2016(Sep)
  13. **Li-Jen Chen**, Che-Kang Chu, Yan-Ping Chen and Shiang-Tai Lin, "Effect of Ionic Liquids on the Phase Behaviour of Methane Hydrate: Experiments and Modeling", 2016 International Conference for Leading and Young Materials Scientists, Sanya, China, 2016(Dec), (Invited talk)
  14. **Li-Jen Chen**, Cheng-Hao Su, Chih-Kang Wu and Ping-Chang Lin, "Wetting Behavior in Binary Mixtures of the Type Water + Ethylene Glycol Ether", 18th International Conference on Petroleum Phase Behavior and Fouling, Le Havre, France, 2017(Jun)
  15. Liang-Kai Chu, Yen-An Chen, Che-Kang Chu, Bo-Chun Chen, and **Li-Jen Chen**, "Using Ethanol as a Kinetic Promoter for Methane Hydrate Formation and Dissociation via Ice Seed Method", 9th International Conference on Gas Hydrates, Denver, Colorado, USA, 2017(Jun)
  16. Yen-An Chen, Liang-Kai Chu, Che-Kang Chu, Bo-Chun Chen, and **Li-Jen Chen**, "Kinetic Effect of Ethanol on Carbon Dioxide Hydrate Formation and Dissociation via Ice Seed Method", 9th International Conference on Gas Hydrates, Denver, Colorado, USA, 2017(Jun)
  17. Kai-Chieh Yang, Shih-Yao Lin and **Li-Jen Chen**, "Effect of Particle Size and Surface Hydrophobicity on Self-Pinning Behavior of Nanofluid Droplets", Bubble & Drop 2017, Lyon, France, 2017(Jun)
  18. Kai-Chieh Yang and **Li-Jen Chen**, "Effect of Particle Size on the Coffee Ring Formation on Different Hydrophobic Surfaces", 7th Asian Conference on Colloid and Interface Science., Kuala Lumpur, Malaysia, 2017(Aug), (Invited talk)
  19. Peiheng Chang and **Li-Jen Chen**, "Observation of impregnating wetting behaviour of a liquid drop on hydrophilic patterned surfaces", 31st Conference of the European Colloid and Interface Society, Madrid, Spain, 2017(Sep)
  20. Hsueh-Peng Chuang, Arwut Promraksa and **Li-Jen Chen**, "Modeling contact angle of a liquid droplet sitting on a cosine wave-like square-array pattern surface with different surface roughnesses", 31st Conference of the European Colloid and Interface Society, Madrid, Spain, 2017(Sep)
  21. **Li-Jen Chen**, "Wetting and Phase Behaviour in Ternary Mixtures of the Type Water + Oil + Surfactant C<sub>12</sub>E<sub>3</sub>", Asian Conference on Oleo Science 2017 (ACOS 2017), Tokyo, Japan, 2017(Sep), (Plenary talk)
  22. Kai-Chieh Yang, Shih-Yao Lin, Kuan-Hung Cho and **Li-Jen Chen**, "Effect of Surface Hydrophobicity and Particle Size on the Self-pinning Concentration for the Coffee Ring Formation", 13th Nanoscience and Nanotechnology Conference, Antalya, Turkey, 2017(Oct)
  23. Kai-Chieh Yang, Ting-Yu Hu, Kuan-Hung Cho, and **Li-Jen Chen**, "Effect of particle size

- on self-pinning for the coffee ring formation on hydrophobic surfaces", 6th World Congress on Adhesion and Related Phenomena (WCARP) & 41st Annual Meeting The Adhesion Society, San Diego, California, USA, 2018(Feb)
24. **Li-Jen Chen**, Yen-An Chen, Che-Kang Chu, and Po-Chun Chen, "Kinetic Effect of Ethanol on the Formation and Dissociation of Methane Hydrate", 2018 Symposium on Thermodynamics & Process Systems Engineering, Tainan, Taiwan, 2018(May)
  25. Hsueh-Wen Tseng, Po-Chia Chen, Hung-Wei Tsui, Chieh-Hsiang Wang, Ting-Yu Hu, and **Li-Jen Chen**, "Effect of Molecular Weight of Poly(Acrylic Acid) on the Interaction of Ionic Surfactant and Polyelectrolyte Mixtures", 11th Conference on Colloid Chemistry, Eger, Hungary, 2018(May)
  26. **Li-Jen Chen**, Po-Chia CHEN, Chieh-Hsiang WANG, Hung-Wei TSUI and Hsueh-Wen TSENG, "Effect of alkyl chain length of alkyltrimethylammonium bromide on the interaction of ionic surfactant and poly(acrylic acid) mixtures", 12th European Symposium on Thermal Analysis and Calorimetry, Brasov, Romania, 2018(Aug)
  27. **Li-Jen Chen**, Che-Kang CHU, Yan-Ping CHEN, and Shiang-Tai LIN, "Chain length effect of ionic liquid 1-alkyl-3-methylimidazolium chloride on the dissociation temperature of methane hydrate at elevated pressure up to 35.0 MPa", 12th European Symposium on Thermal Analysis and Calorimetry, Brasov, Romania, 2018(Aug)
  28. **L.J. Chen**, S.Y. Lin, K.C. Yang, T.Y. Hu, and K.H. Cho, "Effect of surface hydrophobicity and particle size on the coffee ring formation", V-th International Conference on Colloid Chemistry and Physicochemical Mechanics (V-th IC-CCPCM), Saint Petersburg, Russia, 2018(Sep), (Key Lecture)
  29. **Li-Jen Chen**, Da-Ren Chiou, Bang-Yan Liu, Kuan-Yu Yeh and Ching-Hsuan Meng, "Effect of surface hydrophobicity on the pretilt angle control of nematic liquid crystal alignment", The 7th Asian Symposium on Advanced Materials, Beijing, China, 2019(Sep), (Keynote Lecture, International Advisory Committee)
  30. Chin-Fen Lee, Mu-Rong Wang, Tsang-Lang Lin and **Li-Jen Chen**, "Kinetic Effect of heating rate on gel formation for Pluronic-based solutions", The 8th Asian Conference on Colloid and Interface Science, Kathmandu, Nepal, 2019(Sep)
  31. **Li-Jen Chen**, "Role of Surface Hydrophobicity in Tuning Pretilt Angle of Nematic Liquid Crystal", The 8th Asian Conference on Colloid and Interface Science, Kathmandu, Nepal, 2019(Sep), (Invited lecture, International Advisory Committee)
  32. **Li-Jen Chen** and Cheng-Hao Su, "Effect of surfactant hydrophobicity on the wetting and phase behavior in ternary mixtures of the type water + oil + surfactant", The 12th Asian Thermophysical Properties Conference, Xi'an, China, 2019(Oct)

### International Cooperation Projects

**The study of the mechanism of heterogeneous hydrate formation for desalination of sea water,**

臺俄(RU)雙邊協議型擴充加值(add-on) 國際合作研究計畫 -

非均質水合物形成機制的海水淡化研究, **Li-Jen Chen**, Sponsor by Ministry of Science and Technology (MOST), NT\$440,000, : 2021/01/01 ~ 2023/12/31