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Professor

B.S. in Chemical Engineering
National Taiwan University, 1995
Ph.D. in Chemical Engineering
University of Birmingham (UK), 2001

Research and Professional Interests
Particle Technology
Fluidization Engineering
Multiphase and Granular Flow Simulations

Journal Papers

1. **Kuo, H.P.**, et al., "CIGS Absorber Preparation by Non-vacuum Particle-based Screen Printing and RTA Densification." *Applied Energy*, 2016. **164**: p. 1003-1011.
2. **Kuo, H.P.**, W.T. Tseng, and A.N. Huang, "Controlling of Segregation in Rotating Drums by Independent End Wall Rotations." *KONA Powder and Particle Journal*, 2016. **33**: p. 239-248.
3. Huang, A.N. and **H.P. Kuo**, "CFD Simulation of Particle Segregation in a Rotating Drum. Part I: Eulerian Solid Phase Kinetic Viscosity." *Advanced Powder Technology*, 2017. **28**(9): p. 2094-2101.
4. Huang, A.N., et al., "Influence of a Laminarizer at the Inlet on the Classification Performance of a Cyclone Separator." *Separation and Purification Technology*, 2017. **174**: p. 408-416.
5. Huang, A.N., et al., "Effect of Cold Air Stream Injection on Cyclone Performance at High Temperature." *Separation and Purification Technology*, 2017. **183**: p. 293-303.
6. **Kuo, H.P.**, B.R. Hou, and A.N. Huang, "The Influences of the Gas Fluidization Velocity on the Properties of Bio-oils from Fluidized Bed Pyrolyzer with In-line Distillation." *Applied energy*, 2017. **194**: p. 279-286.
7. **Kuo, H.P.**, et al., "Photocatalytic Degradation of Toluene in a Staged Fluidized Bed Reactor Using TiO₂/silica Gel." *Korean Journal of Chemical Engineering*, 2017. **34**(1): p. 73-80.
8. Fukasawa, T., et al., "Component Separation in a Vibrating Fluidized Bed Based on Differences in Agglomeration Properties of Particles." *Journal of Chemical Engineering of Japan*, 2018. **51**(7): p. 576-583.
9. Hsu, W.Y., A.N. Huang, and **H.P. Kuo**, "Analysis of Interparticle Forces and Particle-Wall Interactions by Powder Bed Pressure Drops at Incipient Fluidization." *Powder Technology*, 2018. **325**: p. 64-68.
10. Huang, A.N., et al., "Production and Separation of Rice Husk Pyrolysis Bio-oils from a Fractional Distillation Column Connected Fluidized Bed Reactor." *Powder Technology*, 2018. **323**: p. 588-593.
11. Huang, A.N., et al., "Effects of Particle Mass Loading on the Hydrodynamics and Separation Efficiency of a Cyclone Separator." *Journal of the Taiwan Institute of Chemical Engineers*, 2018. **90**: p. 61-67.

12. Huang, A.N., et al., "Classification Performance Analysis of a Novel Cyclone with a Slit on the Conical Part by CFD Simulation." *Separation and Purification Technology*, 2018. **190**: p. 25-32.
13. Huang, A.N. and **H.P. Kuo**, "CFD Simulation of Particle Segregation in a Rotating Drum. Part II: Effects of Specularity Coefficient." *Advanced Powder Technology*, 2018. **29**(12): p. 3368-3374.
14. **Kuo, H.P.**, Y.N. Yang, and A.N. Huang, "A Kinetic Study of CFB Boiler Separated Bottom Ashes During the Steam Hydration Reaction." *Journal of the Taiwan Institute of Chemical Engineers*, 2019. **94**: p. 124-128.
15. Lin, C.Y., et al., "Stage-wise Characterization of the High Shear Granulation Process by Impeller Torque Changing Rate." *Advanced Powder Technology*, 2019. **30**(8): p. 1513-1521.
16. Hsu, W.Y., et al., "Approach the powder contact force, voidage, tensile stress, wall frictional stress and state diagram of powder bed by simple pressure drop monitoring." *Advanced Powder Technology*, 2020. **31**(1): p. 433-438.
17. Huang, A.N., et al., "A study of the axial and radial competition segregation in a rotating drum with internal diameter changing." *AIChE Journal*, 2020. **66**(5):e16921..
18. Huang, A.N., et al., "Transition from binder to matrix-forming: the effect of hydroxypropylmethylcellulose concentration on the properties of starch/hydroxypropylmethylcellulose granules prepared in a high shear granulator." *Journal of the Taiwan Institute of Chemical Engineers*, 2020. **113**: p. 46-55.
19. Huang, A.N., et al., "DEM study of particle segregation in a rotating drum with internal diameter variations." *Powder Technology*, 2021. **379**(A): p. 430-440.

Conference Papers

1. Fang, H.Y., **H.P. Kuo**, and A.N. Huang, "A Study of Gas-Solid Swirling Flow using CFD Eulerian-DPM Two-phase Approach", in the 5th Asian Conference on Innovative Energy and Environmental Chemical Engineering (ASCON-IEEChE). 2016: Yokohama, Japan.
2. Hsu, W.Y. and **H.P. Kuo**, "The Effect of Liquid Bridge Forces on the Bed Hydrodynamics and Bed Pressure Drop at Incipient Fluidization", in the 5th Asian Conference on Innovative Energy and Environmental Chemical Engineering (ASCON-IEEChE). 2016: Yokohama, Japan.
3. **Kuo, H.P.**, B.R. Hou, and A.N. Huang, "Bio-oil Production and Upgrading by Pyrolysis Coupling in-line Distillation", in the 15th International Conference on Sustainable Energy Technologies (SET 2016). 2016: Singapore.
4. **Kuo, H.P.**, G.Y. Luo, and A.N. Huang, "Stable Operations of Continuous Particle Drying in a Countercurrent Fluidized Bed with Perforated Plates", in the 20th International Drying Symposium (IDS 2016). 2016: Gifu, Japan.
5. **Kuo, H.P.**, Y.N. Yang, and A.N. Huang, "Kinetic Study of Steam Hydration Reaction of

- CFB Boiler Separated Ashes”, in The 12th World Filtration Congress (WFC12). 2016: Taipei, Taiwan.
6. Chen, Y.A., S.Y. Huang, and **H.P. Kuo**, “A numerical and experimental study of rice husk pyrolysis in a fluidized bed reactor”, in 2017 Joint of Korea/Japan/Taiwan Chemical Engineering Conference (KJT2017). 2017: Busan, Korea.
 7. Cheng, T.H., et al., “A study of particle segregation in rotating drum with modified internals”, in 2017 Joint of Korea/Japan/Taiwan Chemical Engineering Conference (KJT2017). 2017: Busan, Korea.
 8. Cheng, T.H. and **H.P. Kuo**, “Segregation in a Rotating Drum with Non-uniform Internal Diameter”, in 7th Asian Particle Technology Symposium (APT2017). 2017: Taoyuan, Taiwan.
 9. Hsu, W.Y., et al., “Approach the Interparticle Force by Bed Collapse at Incipient Fluidization”, in the 3rd International Symposium on Multiscale Multiphase Process Engineering (MMPE). 2017: Toyama, Japan.
 10. Hsu, W.Y. and **H.P. Kuo**, “Particle Interparticle Force Characterization by Monitoring the Fluidized Bed Pressure Drop”, in 2017 Joint of Korea/Japan/Taiwan Chemical Engineering Conference (KJT2017). 2017: Busan, Korea.
 11. Huang, A.N., et al., “Experimental and Numerical Studies on the Effect of the Mass Loading on the Separation Efficiency of a Cyclone Separator”, in 7th Asian Particle Technology Symposium (APT2017). 2017: Taoyuan, Taiwan.
 12. Huang, A.N., et al., “Effects of the Cyclone Design with a Slit on the Cone”, in 2017 Joint of Korea/Japan/Taiwan Chemical Engineering Conference (KJT2017). 2017: Busan, Korea.
 13. Hsu, W.Y., et al., “CFD-DPM Prediction of Pipe Erosion in a Staged Fluidized Bed”, in 6th International Workshop on Process Intensification (IWPI 2018). 2018: Taipei, Taiwan.
 14. Hsu, W.Y. and **H.P. Kuo**, “Particle Interparticle Force Characterization by Monitoring the Fluidized Bed Pressure Drop”, in The 6th International Conference on the Characterization and Control of Interfaces for High Quality Advanced Materials and the 54th Summer Symposium on Powder Technology (ICCCI2018). 2018: Kurashiki, Japan.
 15. Lee, C.T., et al., “A Numerical and Experimental Study of Rice Husk Fast Pyrolysis in a Fluidized Bed Reactor”, in The 6th Asian Conference on Innovative Energy and Environmental Chemical Engineering” in the 16th Asian Conference on Fluidized-bed and Three-phase Reactor (ASCON-IEEChE 2018). 2018: Sun Moon Lake, Taiwan. p. 283-286.
 16. Lin, C.Y., et al., “Prediction of the Optimum Liquid-solid Ratio Required for the Granulation Process by Torque Measurement”, in The 6th Asian Conference on Innovative Energy and Environmental Chemical Engineering - the 16th Asian Conference on Fluidized-bed and Three-phase Reactor (ASCON-IEEChE 2018). 2018: Sun Moon Lake, Taiwan. p. 25-28.
 17. Lin, C.Y., Y.X. Lee, and **H.P. Kuo**, “Operation Window Monitoring and Migration from Single to Binary Excipient in a High Shear Granulator”, in The 6th International Conference on the Characterization and Control of Interfaces for High Quality Advanced

- Materials and the 54th Summer Symposium on Powder Technology (ICCCI2018). 2018: Kurashiki, Japan.
18. Hsu, W.Y., et al., “Characterization of the Particle Cohesion by the Pressure Drop Monitoring in a Fluidized Bed”, in the 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019). 2019: Sapporo, Japan.
 19. Huang, A.N., W.Y. Hsu, and **H.P. Kuo**, “Numerical investigation of combustion process in an industrial pulverized-coal boiler”, in the 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019). 2019: Sapporo, Japan.
 20. Lin, C.Y., A.N. Huang, and **H.P. Kuo**, “Effects of Filling on the Segregation Patterns in a High Fill Level Rotating Drum”, in the 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019). 2019: Sapporo, Japan.
 21. Wang, X., A.N. Huang, and **H.P. Kuo**, “Experimental and Numerical Studies of Particle Mixing in a Rotating Drum with an Inner Particle Motion Blocking Plate”, in the 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019). 2019: Sapporo, Japan.
 22. Huang, A.N., C.-C. Huang, and **H.P. Kuo**, “Computational Fluid Dynamics Simulations of Human Nasal Airflow”, in 2019 Japan/Taiwan/Korea Chemical Engineering Conference. 2019: Beppu, Japan.
 23. Hsu, W.Y., A.N. Huang, and **H.P. Kuo**, “Characterization of the Particle Flow Properties by the Pressure Drop Monitoring in a Fluidized Bed”, in 2019 Japan/Taiwan/Korea Chemical Engineering Conference. 2019: Beppu, Japan.
 24. **Kuo, H.P.**, W.Y. Hsu, and A.N. Huang, “Approach the Bulk Particle Flow Behavior by Pressure Drop Monitoring”, in 2019 Japan/Taiwan/Korea Chemical Engineering Conference. 2019: Beppu, Japan.
 25. Liao, W.C., A.N. Huang, and **H.P. Kuo**, “Multiphase Eulerian Modeling of Biomass Pyrolysis in a Fluidized Reactor”, in 2020 TWICChE 67th Annual Meeting. 2020: Hsinchu, Taiwan.
 26. Lai, C.C., A.N. Huang, and **H.P. Kuo**, “Approaching the Soft-Sphere Discrete Element Modelling Spring-Damper Parameters by Contact Mechanics”, in 2020 TWICChE 67th Annual Meeting. 2020: Hsinchu, Taiwan.
 27. Yang, H.H., A.N. Huang, and **H.P. Kuo**, “Numerical Analysis of the Effect of Operating Temperature on Cyclone Performances”, in 2020 TWICChE 67th Annual Meeting. 2020: Hsinchu, Taiwan.

Patents

1. 黃安妮、郭修伯，「石灰石脫硫副產物形成二水硫酸鈣之方法」，中華民國發明專利 I577634 (2017/04/11 –2033/07/07)

Honors and Others

1. 109學年度「陳芳燦講座」講座學者 (2020)

2. Execute Editor, Advanced Powder Technology, the Society of Powder Technology, Japan (2018/01/01- now)
3. Organizing Committee, the 7th International Conference on the Characterization and Control of Interfaces for High Quality Advanced Materials (ICCCI2022), 5-8 July, 2022 Fujiyoshida, Japan.
4. Scientific Committee, the 10th International Symposium on Mixing in Industrial Processes (ISMIP10), 29 June-2 July, 2020, Kobe, Japan.
5. Organizing Committee, the 6th International Conference on the Characterization and Control of Interfaces for High Quality Advanced Materials (ICCCI 2018) and the 54th Summer Symposium on Powder Technology, 9-12 July, 2018, Kurashiki, Japan.
6. Chair, 7th Asian Particle Technology Symposium, 30 July-3 August, 2017, Taoyuan, Taiwan.
7. 長庚大學2016, 2019優良教師獎
8. 指導學生林琦昀同學·獲得2019年台灣化學工程學會66週年年會壁報論文競賽-佳作
9. 指導學生王煦宸同學·獲得2019年台灣化學工程學會66週年年會壁報論文競賽-佳作
10. 指導學生王煦宸同學·獲得2019年台灣化學工程學會66週年年會英語口頭報告競賽優勝
11. 指導學生王煦宸同學·獲得2019年第十七屆台塑關係企業應用技術研討會壁報論文競賽-佳作
12. 指導學生王萱同學·獲2018年台灣化學工程學會65週年年會壁報論文競賽-佳作
13. 指導學生鄭東欣同學·獲2017年台灣化學工程學會64週年年會壁報論文競賽-傑出論文獎