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**References**

1. Saha, D.; Nelson, K.; Chen, J.; Lu, Y.; Ozcan, S., Adsorption of CO2, CH4, and N2in Micro-Mesoporous Nanographene: A Comparative Study. *J. Chem. Eng. Data* **2015,** *60*, (9), 2636-2645.

2. Rashidi, N. A.; Yusup, S., Potential of palm kernel shell as activated carbon precursors through single stage activation technique for carbon dioxide adsorption. *Journal of Cleaner Production* **2017,** *168*, 474-486.

3. Heavy, S., High-Pressure Adsorption Equilibria of Methane and Carbon Dioxide on Several Activated Carbons. *J. Chem. Eng. Data* **2005,** *50*, 369-376.

4. Azevedo, D. C. S.; Araújo, J. C. S.; Bastos-Neto, M.; Torres, A. E. B.; Jaguaribe, E. F.; Cavalcante, C. L., Microporous activated carbon prepared from coconut shells using chemical activation with zinc chloride. *Micropor. Mesopor. Mater.* **2007,** *100*, (1-3), 361-364.

5. Wang, X.; Lee, B.; Chua, H. T., Methane desorption and adsorption measurements on activated carbon in 281–343 K and pressures to 1.2 MPa. *Journal of Thermal Analysis and Calorimetry* **2011,** *110*, (3), 1475-1485.

6. Zhang, Z.; Xu, M.; Wang, H.; Li, Z., Enhancement of CO2 adsorption on high surface area activated carbon modified by N2, H2 and ammonia. *Chem. Eng. J.* **2010,** *160*, (2), 571-577.

7. Shao, X.; Feng, Z.; Xue, R.; Ma, C.; Wang, W.; Peng, X.; Cao, D., Adsorption of CO2, CH4, CO2/N2 and CO2/CH4 in novel activated carbon beads: Preparation, measurements and simulation. *AlChE J.* **2011,** *57*, (11), 3042-3051.

8. Ning, P.; Li, F.; Yi, H.; Tang, X.; Peng, J.; Li, Y.; He, D.; Deng, H., Adsorption equilibrium of methane and carbon dioxide on microwave-activated carbon. *Sep. Purif. Technol.* **2012,** *98*, 321-326.

9. Thiruvenkatachari, R.; Su, S.; Yu, X. X., Carbon fibre composite for ventilation air methane (VAM) capture. *J. Hazard. Mater.* **2009,** *172*, (2-3), 1505-11.

10. Lozano-Castello, D.; Cazorla-Amoro´s, D.; Linares-Solano, A., Powdered Activated Carbons and Activated Carbon Fibers for Methane Storage: A Comparative Study. *Energy & Fuels* **2002,** *16*, 1321-1328.

11. Lee, J.-W.; Balathanigaimani, M. S.; Kang, H.-C.; Shim, W.-G.; Kim, C.; Moon, H., Methane Storage on Phenol-Based Activated Carbons at (293.15, 303.15, and 313.15) K. *J. Chem. Eng. Data* **2007,** *52*, 66-70.

12. Wang, X.; French, J.; Kandadai, S.; Chua, H. T., Adsorption Measurements of Methane on Activated Carbon in the Temperature Range (281 to 343) K and Pressures to 1.2 MPa. *J. Chem. Eng. Data* **2010,** *55*, 2700–2706.

13. Loh, W. S.; Rahman, K. A.; Chakraborty, A.; Saha, B. B.; Choo, Y. S.; Khoo, B. C.; Ng, K. C., Improved Isotherm Data for Adsorption of Methane on Activated Carbons. *J. Chem. Eng. Data* **2010,** *55*, 2840–2847.

14. Abdulsalam, J.; Mulopo, J.; Bada, S. O.; Oboirien, B., Equilibria and Isosteric Heat of Adsorption of Methane on Activated Carbons Derived from South African Coal Discards. *ACS Omega* **2020,** *5*, (50), 32530-32539.

15. Rios, R. B.; Silva, F. W. M.; Torres, A. E. B.; Azevedo, D. C. S.; Cavalcante, C. L., Adsorption of methane in activated carbons obtained from coconut shells using H3PO4 chemical activation. *Adsorption* **2009,** *15*, (3), 271-277.

16. Bastos-Neto, M.; Canabrava, D. V.; Torres, A. E. B.; Rodriguez-Castellón, E.; Jiménez-López, A.; Azevedo, D. C. S.; Cavalcante, C. L., Effects of textural and surface characteristics of microporous activated carbons on the methane adsorption capacity at high pressures. *Appl. Surf. Sci.* **2007,** *253*, (13), 5721-5725.

17. Wang, X.; Yuan, B.; Zhou, X.; Xia, Q.; Li, Y.; An, D.; Li, Z., Novel glucose-based adsorbents (Glc-Cs) with high CO 2 capacity and excellent CO 2 /CH 4 /N 2 adsorption selectivity. *Chem. Eng. J.* **2017,** *327*, 51-59.

18. Casco, M. E.; Martínez-Escandell, M.; Gadea-Ramos, E.; Kaneko, K.; Silvestre-Albero, J.; Rodríguez-Reinoso, F., High-Pressure Methane Storage in Porous Materials: Are Carbon Materials in the Pole Position? *Chem. Mater.* **2015,** *27*, (3), 959-964.

19. Feng, Y.-Y.; Yang, W.; Chu, W., K2S-activated carbons developed from coal and their methane adsorption behaviors. *Chinese Physics B* **2014,** *23*, (10).

20. Altwala, A.; Mokaya, R., Predictable and targeted activation of biomass to carbons with high surface area density and enhanced methane storage capacity. *Energy & Environmental Science* **2020,** *13*, (9), 2967-2978.

21. Yuan, B.; Wu, X.; Chen, Y.; Huang, J.; Luo, H.; Deng, S., Adsorption of CO(2), CH(4), and N(2) on ordered mesoporous carbon: approach for greenhouse gases capture and biogas upgrading. *Environ. Sci. Technol.* **2013,** *47*, (10), 5474-80.

22. Sreńscek-Nazzal, J.; Kamińska, W.; Michalkiewicz, B.; Koren, Z. C., Production, characterization and methane storage potential of KOH-activated carbon from sugarcane molasses. *Industrial Crops and Products* **2013,** *47*, 153-159.

23. El-Sharkawy, I. I.; Mansour, M. H.; Awad, M. M.; El-Ashry, R., Investigation of Natural Gas Storage through Activated Carbon. *J. Chem. Eng. Data* **2015,** *60*, (11), 3215-3223.

24. Yeon, S.-H.; Osswald, S.; Gogotsi, Y.; Singer, J. P.; Simmons, J. M.; Fischer, J. E.; Lillo-Ródenas, M. A.; Linares-Solano, Á., Enhanced methane storage of chemically and physically activated carbide-derived carbon. *Journal of Power Sources* **2009,** *191*, (2), 560-567.

25. Rahman, K. A.; Loh, W. S.; Chakraborty, A.; Saha, B. B.; Ng, K. C., Adsorption Thermodynamics of Natural Gas Storage onto Pitch-Based Activated Carbons. In *Proceedings of the 2nd Annual Gas Processing Symposium*, 2010; pp 187-195.

26. Esteves, I. A. A. C.; Lopes, M. S. S.; Nunes, P. M. C.; Mota, J. P. B., Adsorption of natural gas and biogas components on activated carbon. *Sep. Purif. Technol.* **2008,** *62*, (2), 281-296.

27. Wang, Y.; Ercan, C.; Khawajah, A.; Othman, R., Experimental and theoretical study of methane adsorption on granular activated carbons. *AlChE J.* **2012,** *58*, (3), 782-788.

28. Yahia, S. B.; Ouederni, A.; Llewellyn, P., Methane storage on olive stones-based activated carbons under high pressure. *2012 First International Conference on Renewable Energies and Vehicular Technology* **2012**, 379-383.

29. Chen, S.; Gong, H.; Dindoruk, B.; He, J.; Bao, Z., Dense Carbon Nanoflower Pellets for Methane Storage. *ACS Applied Nano Materials* **2020,** *3*, (8), 8278-8285.

30. Ali, A.; Hamed, R.; Mohammad Jaber Darabi, M.; Mahsa, R. F., Comparing the Performance of KOH with NaOH-Activated Anthracites in terms of Methane Storage. *Adsorption Science & Technology* **2013,** *31*, (31), 729-745.

31. Tamnanloo, J.; Fatemi, S.; Golmakani, A., Binary Equilibrium Adsorption Data and Comparison of Zeolites with Activated Carbon for Selective Adsorption of CO2 from CH4. *Adsorption Science & Technology* **2014,** *32*, (9), 707-716.

32. Lee, T.; Tan, W.-C.; Matsumoto, A.; Yeoh, F.-Y., Methane Adsorption Microcalorimetry of Activated Carbon Fibre Synthesized from Empty Fruit Bunch Fibre. *Adsorption Science & Technology* **2015,** *33*, (3), 263-277.

33. Choma, J.; Osuchowski, Ł.; Dziura, A.; Marszewski, M.; Jaroniec, M., Benzene and Methane Adsorption on Ultrahigh Surface Area Carbons Prepared from Sulphonated Styrene Divinylbenzene Resin by KOH Activation. *Adsorption Science & Technology* **2015,** *33*, (6), 587-594.

34. Awadallah-F, A.; Al-Muhtaseb, S. A., Influence of Carbon Uniformity on Its Characteristics and Adsorption Capacities of CO2 and CH4 Gases. *Applied Sciences* **2020,** *11*, (1).

35. Song, X.; Wang, L. a.; Ma, X.; Zeng, Y., Adsorption equilibrium and thermodynamics of CO2 and CH4 on carbon molecular sieves. *Appl. Surf. Sci.* **2017,** *396*, 870-878.

36. Chakraborty, A., Thermodynamic trends for the adsorption of non polar gases on activated carbons employing a new adsorption isotherm modelling. *Appl. Therm. Eng.* **2016,** *105*, 189-197.

37. Zhu, Z. W.; Zheng, Q. R., Methane adsorption on the graphene sheets, activated carbon and carbon black. *Appl. Therm. Eng.* **2016,** *108*, 605-613.

38. Arami-Niya, A.; Rufford, T. E.; Zhu, Z., Activated carbon monoliths with hierarchical pore structure from tar pitch and coal powder for the adsorption of CO2, CH4 and N2. *Carbon* **2016,** *103*, 115-124.

39. Casco, M. E.; Martínez-Escandell, M.; Kaneko, K.; Silvestre-Albero, J.; Rodríguez-Reinoso, F., Very high methane uptake on activated carbons prepared from mesophase pitch: A compromise between microporosity and bulk density. *Carbon* **2015,** *93*, 11-21.

40. Li, Y.; Li, D.; Rao, Y.; Zhao, X.; Wu, M., Superior CO2, CH4, and H2 uptakes over ultrahigh-surface-area carbon spheres prepared from sustainable biomass-derived char by CO2 activation. *Carbon* **2016,** *105*, 454-462.

41. de Oliveira, L. H.; Meneguin, J. G.; Pereira, M. V.; do Nascimento, J. F.; Arroyo, P. A., Adsorption of hydrogen sulfide, carbon dioxide, methane, and their mixtures on activated carbon. *Chem. Eng. Commun.* **2019,** *206*, (11), 1533-1553.

42. Attia, N. F.; Jung, M.; Park, J.; Jang, H.; Lee, K.; Oh, H., Flexible nanoporous activated carbon cloth for achieving high H2, CH4, and CO2 storage capacities and selective CO2/CH4 separation. *Chem. Eng. J.* **2020,** *379*.

43. Tang, R.; Dai, Q.; Liang, W.; Wu, Y.; Zhou, X.; Pan, H.; Li, Z., Synthesis of novel particle rice-based carbon materials and its excellent CH4/N2 adsorption selectivity for methane enrichment from Low-rank natural gas. *Chem. Eng. J.* **2020,** *384*.

44. Banisheykholeslami, F.; Ghoreyshi, A. A.; Mohammadi, M.; Pirzadeh, K., Synthesis of a Carbon Molecular Sieve from Broom Corn Stalk via Carbon Deposition of Methane for the Selective Separation of a CO2/CH4Mixture. *CLEAN - Soil, Air, Water* **2015,** *43*, (7), 1084-1092.

45. Peredo-Mancilla, D.; Ghouma, I.; Hort, C.; Matei Ghimbeu, C.; Jeguirim, M.; Bessieres, D., CO2 and CH4 Adsorption Behavior of Biomass-Based Activated Carbons. *Energies* **2018,** *11*, (11).

46. Li, Y.; Liu, N.; Zhang, T.; Wang, B.; Wang, Y.; Wang, L.; Wei, J., Highly microporous nitrogen-doped carbons from anthracite for effective CO2 capture and CO2/CH4 separation. *Energy* **2020,** *211*.

47. Stelitano, S.; Conte, G.; Policicchio, A.; Aloise, A.; Desiderio, G.; Agostino, R. G., Low Pressure Methane Storage in Pinecone-Derived Activated Carbons. *Energy & Fuels* **2018,** *32*, (10), 10891-10897.

48. Guan, C.; Loo, L. S.; Wang, K.; Yang, C., Methane storage in carbon pellets prepared via a binderless method. *Energy Convers. Manage.* **2011,** *52*, (2), 1258-1262.

49. Gutlein, S.; Burkard, C.; Zeilinger, J.; Niedermaier, M.; Klumpp, M.; Kolb, V.; Jess, A.; Etzold, B. J., A feasible way to remove the heat during adsorptive methane storage. *Environ. Sci. Technol.* **2015,** *49*, (1), 672-8.

50. Luo, J.; Liu, Y.; Sun, W.; Jiang, C.; Xie, H.; Chu, W., Influence of structural parameters on methane adsorption over activated carbon: Evaluation by using D–A model. *Fuel* **2014,** *123*, 241-247.

51. Wu, Y.; Chen, Z.; Liu, Y.; Xu, Y.; Liu, Z., One step synthesis of N-doped activated carbons derived from sustainable microalgae-NaAlg composites for CO2 and CH4 adsorption. *Fuel* **2018,** *233*, 574-581.

52. Álvarez-Gutiérrez, N.; Gil, M. V.; Rubiera, F.; Pevida, C., Adsorption performance indicators for the CO2/CH4 separation: Application to biomass-based activated carbons. *Fuel Process. Technol.* **2016,** *142*, 361-369.

53. Ke, Z.; Xiao, H.; Wen, Y.; Du, S.; Zhou, X.; Xiao, J.; Li, Z., Adsorption Property of Starch-Based Microporous Carbon Materials with High Selectivity and Uptake for C1/C2/C3 Separation. *Industrial & Engineering Chemistry Research* **2021,** *60*, (12), 4668-4676.

54. Yang, W.; Feng, Y.; Chu, W., Comparative Study of Textural Characteristics on Methane Adsorption for Carbon Spheres Produced by CO2Activation. *International Journal of Chemical Engineering* **2014,** *2014*, 1-7.

55. Conte, G.; Stelitano, S.; Policicchio, A.; Minuto, F. D.; Lazzaroli, V.; Galiano, F.; Agostino, R. G., Assessment of activated carbon fibers from commercial Kevlar® as nanostructured material for gas storage: Effect of activation procedure and adsorption of CO2 and CH4. *J. Anal. Appl. Pyrolysis* **2020,** *152*.

56. Lee, J.-W.; Balathanigaimani, M. S.; Kang, H.-C.; Shim, W.-G.; Kim, C.; Moon, H., Methane Storage on Phenol-Based Activated Carbons at (293.15, 303.15, and 313.15) K. *J. Chem. Eng. Data* **2007**.

57. Rahman, K. A.; Loh, W. S.; Yanagi, H.; Chakraborty, A.; Saha, B. B.; Chun, W. G.; Ng, K. C., Experimental Adsorption Isotherm of Methane onto Activated Carbon at Suband Supercritical Temperatures. *J. Chem. Eng. Data* **2010**.

58. Mu, B.; Walton, K. S., High-Pressure Adsorption Equilibrium of CO2, CH4, and CO on an Impregnated Activated Carbon. *J. Chem. Eng. Data* **2011,** *56*, (3), 390-397.

59. Wu, Y.-J.; Yang, Y.; Kong, X.-M.; Li, P.; Yu, J.-G.; Ribeiro, A. M.; Rodrigues, A. E., Adsorption of Pure and Binary CO2, CH4, and N2 Gas Components on Activated Carbon Beads. *J. Chem. Eng. Data* **2015,** *60*, (9), 2684-2693.

60. Yi, H.; Li, Y.; Tang, X.; Li, F.; Li, K.; Yuan, Q.; Sun, X., Effect of the Adsorbent Pore Structure on the Separation of Carbon Dioxide and Methane Gas Mixtures. *J. Chem. Eng. Data* **2015,** *60*, (5), 1388-1395.

61. Contreras, M.; Lagos, G.; Escalona, N.; Soto-Garrido, G.; Radovic, L. R.; Garcia, R., On the methane adsorption capacity of activated carbons: in search of a correlation with adsorbent properties. *Journal of Chemical Technology & Biotechnology* **2009,** *84*, (11), 1736-1741.

62. Mirzaei, S.; Ahmadpour, A.; Shahsavand, A.; Rashidi, H.; Arami-Niya, A., Superior performance of modified pitch-based adsorbents for cyclic methane storage. *Journal of Energy Storage* **2020,** *28*.

63. Tabatabaei Shirazani, M.; Bakhshi, H.; Rashidi, A.; Taghizadeh, M., Starch-based activated carbon micro-spheres for adsorption of methane with superior performance in ANG technology. *Journal of Environmental Chemical Engineering* **2020,** *8*, (4).

64. Hu, X.-M.; Chen, Q.; Zhao, Y.-C.; Laursen, B. W.; Han, B.-H., Straightforward synthesis of a triazine-based porous carbon with high gas-uptake capacities. *Journal of Materials Chemistry A* **2014,** *2*, (34).

65. Yuan, B.; Wang, J.; Chen, Y.; Wu, X.; Luo, H.; Deng, S., Unprecedented performance of N-doped activated hydrothermal carbon towards C2H6/CH4, CO2/CH4, and CO2/H2 separation. *Journal of Materials Chemistry A* **2016,** *4*, (6), 2263-2276.

66. Balathanigaimani, M. S.; Kang, H.-C.; Shim, W.-G.; Kim, C.; Lee, J.-W.; Moon, H., Preparation of powdered activated carbon from rice husk and its methane adsorption properties. *Korean Journal of Chemical Engineering* **2006,** *23*, (4), 663-668.

67. Solara, C.; Lagoc, F. S. R. M.; Vallonea, A.; Deianab, C.; Sapag, K., Natural Gas Storage in Microporous Carbon Obtained from Waste of the Olive Oil Production. *Materials Research Bulletin* **2008,** *11*, (4), 409-414.

68. Antoniou, M. K.; Diamanti, E. K.; Enotiadis, A.; Policicchio, A.; Dimos, K.; Ciuchi, F.; Maccallini, E.; Gournis, D.; Agostino, R. G., Methane storage in zeolite-like carbon materials. *Micropor. Mesopor. Mater.* **2014,** *188*, 16-22.

69. Balathanigaimani, M. S.; Shim, W.-G.; Lee, J.-W.; Moon, H., Adsorption of methane on novel corn grain-based carbon monoliths. *Micropor. Mesopor. Mater.* **2009,** *119*, (1-3), 47-52.

70. Gao, S.; Ge, L.; Rufford, T. E.; Zhu, Z., The preparation of activated carbon discs from tar pitch and coal powder for adsorption of CO 2 , CH 4 and N 2. *Micropor. Mesopor. Mater.* **2017,** *238*, 19-26.

71. Men'shchikov, I.; Shkolin, A.; Khozina, E.; Fomkin, A., Thermodynamics of Adsorbed Methane Storage Systems Based on Peat-Derived Activated Carbons. *Nanomaterials (Basel)* **2020,** *10*, (7).

72. Kemp, K. C.; Baek, S. B.; Lee, W. G.; Meyyappan, M.; Kim, K. S., Activated carbon derived from waste coffee grounds for stable methane storage. *Nanotechnology* **2015,** *26*, (38), 385602.

73. Kiełbasa, K.; Sreńscek-Nazzal, J.; Michalkiewicz, B., Impact of tailored textural properties of activated carbons on methane storage. *Powder Technol.* **2021,** *394*, 336-352.

74. Fomkin, A. A.; Pribylov, A. A.; Tkachev, A. G.; Memetov, N. R.; Melezhik, A. V.; Kucherova, A. E.; Shubin, I. N.; Shkolin, A. V.; Men’shchikov, I. E.; Pulin, A. L.; Zhedulov, S. A., Methane Adsorption in Microporous Carbon Adsorbent with a Bimodal Pore Size Distribution. *Protection of Metals and Physical Chemistry of Surfaces* **2020,** *56*, (1), 1-5.

75. Shevchenko, A. O.; Pribylov, A. A.; Zhedulov, S. A.; Men’shchikov, I. E.; Shkolin, A. V.; Fomkin, A. A., Methane Adsorption in Microporous Carbon Adsorbent LCN Obtained by Thermochemical Synthesis from Lignocellulose. *Protection of Metals and Physical Chemistry of Surfaces* **2019,** *55*, (2), 211-216.

76. Wang, W.; Yuan, D., Mesoporous carbon originated from non-permanent porous MOFs for gas storage and CO2/CH4 separation. *Sci Rep* **2014,** *4*, 5711.

77. Prasetyo, I.; Mukti, N. I. F.; Cahyono, R. B.; Prasetya, A.; Ariyanto, T., Nanoporous Carbon Prepared from Palm Kernel Shell for CO2/CH4 Separation. *Waste and Biomass Valorization* **2020,** *11*, (10), 5599-5606.

78. Yang, Z.; Ju, X.; Liao, H.; Meng, Z.; Ning, H.; Li, Y.; Chen, Z.; Long, J., Preparation of Activated Carbon Doped with Graphene Oxide Porous Materials and Their High Gas Adsorption Performance. *ACS Omega* **2021,** *6*, (30), 19799-19810.

79. Chen, F.; Zhang, Z.; Yang, Q.; Yang, Y.; Bao, Z.; Ren, Q., Microporous Carbon Adsorbents Prepared by Activating Reagent-Free Pyrolysis for Upgrading Low-Quality Natural Gas. *ACS Sustainable Chemistry & Engineering* **2019,** *8*, (2), 977-985.

80. Ma, X.; Chen, R.; Zhou, K.; Wu, Q.; Li, H.; Zeng, Z.; Li, L., Activated Porous Carbon with an Ultrahigh Surface Area Derived from Waste Biomass for Acetone Adsorption, CO2 Capture, and Light Hydrocarbon Separation. *ACS Sustainable Chemistry & Engineering* **2020,** *8*, (31), 11721-11728.

81. Men’shchikov, I. E.; Shkolin, A. V.; Fomkin, A. A.; Khozina, E. V., Thermodynamics of methane adsorption on carbon adsorbent prepared from mineral coal. *Adsorption* **2021**.

82. Song, X.; Wang, L. a.; Zeng, Y.; Zhan, X.; Gong, J.; Li, T., Application of activated carbon modified by acetic acid in adsorption and separation of CO2 and CH4. In *Advances in Energy Science and Environment Engineering II*, 2018.

83. Dong, Z.; Li, B.; Shang, H.; Zhang, P.; Chen, S.; Yang, J.; Zeng, Z.; Wang, J.; Deng, S., Ultramicroporous carbon granules with narrow pore size distribution for efficient CH

4

separation from coal‐bed gases. *AlChE J.* **2021,** *67*, (9).

84. Du, S.; Wu, Y.; Wang, X.; Xia, Q.; Xiao, J.; Zhou, X.; Li, Z., Facile synthesis of ultramicroporous carbon adsorbents with ultra‐high

CH

4

uptake by in situ ionic activation. *AlChE J.* **2020,** *66*, (7).

85. Hao, S. X.; Yu, Z. X.; Liu, X. Y., Surface Modification of Activated Carbon and its Effects on Methane Adsorption. *Applied Mechanics and Materials* **2013,** *395-396*, 605-609.

86. Mirzaei, S.; Ahmadpour, A.; Shahsavand, A.; Nakhaei Pour, A.; LotfiKatooli, L.; Garmroodi Asil, A.; Pouladi, B.; Arami-Niya, A., Experimental and simulation study of the effect of surface functional groups decoration on CH4 and H2 storage capacity of microporous carbons. *Appl. Surf. Sci.* **2020,** *533*.

87. Choi, S.; Alkhabbaz, M. A.; Wang, Y.; Othman, R. M.; Choi, M., Unique thermal contraction of zeolite-templated carbons enabling micropore size tailoring and its effects on methane storage. *Carbon* **2019,** *141*, 143-153.

88. Xu, Y.; Qian, Q.; Chen, X.; Xiao, L.; Wu, D.; Luo, Y.; Chen, Q., Carbon molecular sieves from soybean straw-based activated carbon for CO2/CH4 separation. *Carbon Letters* **2018,** *25*, 68-77.

89. Yi, H.; Li, F.; Ning, P.; Tang, X.; Peng, J.; Li, Y.; Deng, H., Adsorption separation of CO2, CH4, and N2 on microwave activated carbon. *Chem. Eng. J.* **2013,** *215-216*, 635-642.

90. Ashourirad, B.; Sekizkardes, A. K.; Altarawneh, S.; El-Kaderi, H. M., Exceptional Gas Adsorption Properties by Nitrogen-Doped Porous Carbons Derived from Benzimidazole-Linked Polymers. *Chem. Mater.* **2015,** *27*, (4), 1349-1358.

91. Abdeljaoued, A.; Querejeta, N.; Durán, I.; Álvarez-Gutiérrez, N.; Pevida, C.; Chahbani, M., Preparation and Evaluation of a Coconut Shell-Based Activated Carbon for CO2/CH4 Separation. *Energies* **2018,** *11*, (7).

92. Park, J.; Attia, N. F.; Jung, M.; Lee, M. E.; Lee, K.; Chung, J.; Oh, H., Sustainable nanoporous carbon for CO2, CH4, N2, H2 adsorption and CO2/CH4 and CO2/N2 separation. *Energy* **2018,** *158*, 9-16.

93. Álvarez-Gutiérrez, N.; García, S.; Gil, M. V.; Rubiera, F.; Pevida, C., Dynamic Performance of Biomass-Based Carbons for CO2/CH4 Separation. Approximation to a Pressure Swing Adsorption Process for Biogas Upgrading. *Energy & Fuels* **2016,** *30*, (6), 5005-5015.

94. Machnikowski, J.; Kierzek, K.; Lis, K.; Machnikowska, H.; Czepirski, L., Tailoring Porosity Development in Monolithic Adsorbents Made of KOH-Activated Pitch Coke and Furfuryl Alcohol Binder for Methane Storage. *Energy & Fuels* **2010,** *24*, (6), 3410-3414.

95. Ghalandari, V.; Hashemipour, H.; Bagheri, H., Experimental and modeling investigation of adsorption equilibrium of CH4, CO2, and N2 on activated carbon and prediction of multi-component adsorption equilibrium. *Fluid Phase Equilibria* **2020,** *508*.

96. Navarro Quirant, P.; Cuadrado-Collados, C.; Romero-Anaya, A. J.; Silvestre Albero, J.; Martinez Escandell, M., Preparation of Porous Carbons from Petroleum Pitch and Polyaniline by Thermal Treatment for Methane Storage. *Industrial & Engineering Chemistry Research* **2020,** *59*, (13), 5775-5785.

97. Attia, N. F.; Jung, M.; Park, J.; Cho, S.-Y.; Oh, H., Facile synthesis of hybrid porous composites and its porous carbon for enhanced H2 and CH4 storage. *Int. J. Hydrogen Energy* **2020,** *45*, (57), 32797-32807.

98. Pan, H.; Yi, Y.; Lin, Q.; Xiang, G.; Zhang, Y.; Liu, F., Effect of Surface Chemistry and Textural Properties of Activated Carbons for CH4 Selective Adsorption through Low-Concentration Coal Bed Methane. *J. Chem. Eng. Data* **2016,** *61*, (6), 2120-2127.