REFERENCE

| [Alcaniz-Monge, 1997] | Alcaniz-Monge, J., De La Casa-Lillo, M. A., Cazorla- |
|-----------------------|--|
| | Amoros, D. and Linares-Solano, A., "Methane Storage in |
| | Activated Carbon Fibers," Pergamon, Vol. 35, No. 2, 1997, |
| | рр. 291-297. |
| | |
| [Atchariyawut, 2007] | Atchariyawut, S., Jiraratananon, R. and Wang, R. |
| | Separation of CO ₂ from CH ₄ by Using Gas–Liquid |
| S | Membrane Contacting Process," Journal of Membrane |
| a. | Science, Vol. 304, 2007, pp. 163-172. |
| [Bansal, 2005] | Bansal, R.C. and Goyal, M., Activated Carbon Adsorption, |
| 38 | Taylor & Francis Group, 2005, ISBN: 0-8247-5344-5. |
| [Blanco, 2010] | Blanco, A.A.G., Alexandre de Oliveiraa, J.C., Lopez, R., |
| (E) | Moreno-Pirajan, J.C., A Study of the Pore Size Distribution |
| NZ. | for Activated Carbon Monoliths and their Relationship with |
| l'a | the Storage of Methane and Hydrogen," Colloids and |
| | Surfaces A: Physicochemical and Engineering Aspects, |
| | Vol. 357, 2010, pp. 74–83. |
| [Bonenfant, 2003] | Bonenfant, D., Mimeault, M., Hausler, R., "Determination |
| Convright | of the Structural Features of Distinct Amines Important for |
| A L L | the Absorption of CO ₂ and Regeneration in Aqueous |
| ALL F | Solution," Industrial & Engineering Chemistry Research, |
| | Vol. 42, 2003, 3179-3184. |
| [Chiew, 2011] | Chiew, Y-L., Brown, M., You, V-L., Judd, R. and Briggs, |
| [| I., "Alternatives to venting of natural gas," International |
| | |
| | Gas Union Research Conference, United Kingdom, 2011. |

| [Chisti, 1988] | Chisti, | M.Y., | and | Moo-Young, | М., | "Gas | Holdup | in |
|----------------|---------|----------|--------|--------------|--------|---------|-----------|------|
| | Pneuma | atic Rea | ctors | " The Chemic | cal Er | ngineer | ing Journ | 1al, |
| | Vol. 38 | , 1988, | pp. 14 | 49-152. | | | | |

[Dubinin, 1966]Dubinin, M. M., *Chemistry and Physics of Carbon*, Vol. 2,ed. P. L. Walker, Jr. Edward Arnold, Ltd., New York, 1966.

[ERDI, 2010] "Biogas Upgrading for Bio-methane Production," Research Report, Energy Research and Development Institute, Nakornping, offer to Energy Policy and Planning Office, Ministry of Energy, 2010.

> Esteves, I-A.A.C., Lopes, M-S.S., Nunes, P-M.C. and Monta, J-P.B. "Adsorption of Natural Gas and Biogas Components on Activated Carbon," Separation and Purification Technology, Vol. 62, 2008, pp. 281-296.

> Farooq, M., Chaudhry, I.A., Hussain, S., Ramzan, N., Ahmed, M., "Biogas Upgradation for Power Generation Application in Pakistan," Journal of Quality and Technology Management, Vol. 8, No. 2, 2012, pp. 107-118.

> Filburn, T., Helble, J. J. and Weiss, R. A., "Development of Supported Ethanolamines and Modified Ethanolamines for CO₂ Capture," Industrial & Engineering Chemistry Research, Vol. 44, 2005, pp. 1542-1546.

> Garnier, C., Finqueneisel, G., Zimny, T., Pokryszka, Z., Lafortune, S. Défossez, P.D.C. and Gaucher, E.C., "Selection of coals of different maturities for CO₂ Storage by modelling of CH₄ and CO₂ adsorption isotherms," International Journal of Coal Geology, Vol. 87, 2011, pp. 80–86.

[Esteves, 2008]

[Farooq, 2012]

[Filburn, 2005]

[Garnier, 2011]

| [Gomez-Diaz, 2006] | Gomez-Diaz, D., Nacaza, J.M., Sanjurjo, B. and Vazquez- | | | |
|--------------------|---|--|--|--|
| | Orgeira, L., "Carbon Dioxide Absorption in Glucosamine | | | |
| | Aqueous Solutions," Chemical Engineering Journal, Vol. | | | |
| | 122, 2006, pp. 81-86. | | | |

[Grande, 2013]Grande, C.A., Blom, R., Moller, a. and Mollmer, J., "High-
pressure separation of CH4/CO2 using activated carbon,"
Chemical Engineering Science, vol.89, 2013, pp. 10–20.

[Guan, 2008] Guan, C., Su, F., Zhao, X.S., Wang, K., "Methane Storage in a Template-Synthesized Carbon," Separation and Purification Technology, Vol. 64, 2008, pp. 124–126.

Hao, s., Chua, W., Jianga, Q., Yua, X., "Methane adsorption characteristics on coal surface above critical temperature through Dubinin–Astakhov model and Langmuir model," Colloids and Surfaces, A: Physicochem. Eng. Aspects, 2014, Vol. 444, pp.104–113.

Hosseini, S.E. and Wahid, M. A., "Biogas Utilization: Experimental Investigation on Biogas Flameless Combustion in Lab-scale Furnace," Energy conversion and management, Vol. 74, 2013, pp. 426-432.

Jeong, B-M., Ahn, E-S., Yun, J-H., Lee, C-H., Dae-Ki Choi, D-K., "Ternary adsorption equilibrium of $H_2/CH_4/C_2H_4$ onto activated carbon," Separation and Purification Technology, Vol. 55, 2007, pp. 335–342.

Kapdi, S.S., Vijay, V.K., Rajesh, S.K., Prasad, R., "Biogas Scrubbing, Compression and Storage: Perspective and Prospectus in Indian Context," Renewable Energy, Vol. 30, 2005, pp. 1195–1202.

[Hao, 2014]

[Hosseini, 2013]

[Jeong, 2007]

[Kapdi, 2005]

| [Kapdi, 2006] | Kapdi1, S. S., Vijay, V.K., Rajesh, S.K. and Prasad, R., "Upgrading Biogas for Utilization as a Vehicle Fuel," Asian Journal on Energy and Environment, Vol. 7, No. 04, 2006, pp. 387-393. |
|----------------------------|---|
| [Laoonual, 2007] | Laoonual, Y., Jugjai, S., Chanchaona, S. and Chollacoop, N., "An Analysis of Composition Variation of Natural Gas for Vehicles (NGV) in Thailand," The 3rd Conference on Energy Technology Network of Thailand; ENETT, Baiyok Sky Hotel, May 23-25, 2007. |
| [Lin, 1999] | Lin, S.H. and Shyu, C.T. "Performance Characteristics and Modeling of Carbon Dioxide Absorption by Amines in a packed column," Waste Manage, Vol. 19, 1999, pp. 255- 262. |
| [Loh, 2010] | Loh, W.S., Rahman, K.A., Chakraborty, A., Saha, B.B., Choo, Y.S., Khoo, B.C. and Ng, K-C., "Improved Isotherm Data for Adsorption of Methane on Activated Carbons," J. Chem. Eng., Vol. 55, 2010, pp. 2840-2847. |
| [Luo, 2014] | Luo, J., Liu, y., Sun, W., a, Jiang, C., Xie, X. and Chu, W., "Influence of structural parameters on methane adsorption over activated carbon: Evaluation by using D–A model," Fuel, Vol. 123, 2014, pp. 241–247 |
| [Matranga, 1992] | Matranga, K.R., Myers, A.L., Glandt, E,D., "Storage of Natural Gas by Adsorption on Activated Carbon," Chemical Engineering Science, Vol. 47, No. 7, May, 1992, pp. 1569–1579. |
| [Ministry of Energy, 2014] | Ministry of Energy, "Online Publication," Announcement of Department of Energy Business on Determination of |

Natural Gas Characteristic and Quality for Vehicles, 2014, http://www.doeb.go.th/v3/tab/notice1.php.

[Mital, 1997]Mital, K.M., "Online Publication," Biogas Systems:Policies, Progress and Prospects, New Age International (P)Limited Ltd., Publishers, https://books.google.co.th/

[Molecular Sieve, Zeolite, and Activated Carbon, 2015] Molecular Sieve, Zeolite, and Activated Carbon "Online Publication," https://en.wikipedia.org/wiki/

[Ning, 2012]

[Perrin, 2004]

[1 01111, 2001]

[Rahman, 2010]

[Rahman, 2013]

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," Separation and Purification Technology, Vol. 98, 2012, pp. 321–326.

Perrin, A., Celzard, A., Albiniak, A., Kaczmarczyk, J., Mareche, J.F., Furdin G., "NaOH Activation of Anthracites: Effect of Temperature on Pore Textures and Methane Storage Ability," Carbon, Vol. 42, 2004, pp. 2855–2866.

Rahman, K. A., Loh, W. S., Yanagi, H., Chakraborty, A., Saha B. B., Chun, W. G. and Ng, K. C., "Experimental Adsorption Isotherm of Methane onto Activated Carbon at Sub and Supercritical Temperatures," J. Chem. Eng, Vol. 55, 2010, pp. 4961–4967.

Rahman, K.A., Loh, W.S. and Ng, K.C., "Heat of Adsorption and Adsorbed Phase Specific Heat Capacity of Aethane/Activated Carbon System," Procedia Engineering, Vol. 56, 2013, pp. 118 – 125.

[REFPROP, 2013] REFPROP version 9, National Institute of Standard and Technology (NIST), 2013.

| [Ryckebosch, 2011] | Ryckebosch, E., Drouillon, M., Vervaeren, H., "Techniques |
|--------------------|---|
| | for transformation of biogas to biomethane," Biomass and |
| | Bioenergy, 2011, pp. 1-13. |

[Shimisu, 2000] Shimizu, K., Takada, S., Minekawa, K., Kawase, Y., "Phenomenological model for bubble column reactors: prediction of gas hold-ups and volumetric mass transfer coefficients," Chemical Engineering Journal, Vol. 78, 2000, pp. 21–28.

[Singh, 2008] Singh, P. and Versteeg, G.F., "Structure and Activity Relationships for CO₂ Regeneration from Aqueous Amine-Based Absorbents," Process Safety and Environment Protection, 2008, Vol. 8, No. 6, pp. 347–359.

> Tanaka, k., Fujiwara, T., Okawa,H., Kato, T., and Sugawara, K., "Ultrasound Irradiation for Desorption of Carbon Dioxide Gas from Aqueous Solutions of Monoethanolamine," Japanese Journal of Applied Physics, Vol. 35, 2014, pp. 1-4.

[Thanompongchart, 2009] Thanompongchart, P., "Separation of Carbon Dioxide from Biogas Using Liquid Absorption in a Packed Column," *Master Thesis* Re, Chiang Mai University. *Thesis Report*, 2009.

[Tiansuwan, 1995]

[Tanaka, 2014]

Tiansuwan, J., Kiatsiriroat, T. and Jirunlabh, J., "Activated Carbon-Ethanol: An Alternative Working Substance for Adsorption Cooling System," Journal of Energy, Heat and Mass Transfer, Vol. 17, 1995, pp. 65-73.

[Tippayawong, 2010]Tippayawong, N. and Thanompongchart, P., "Biogas
Quality Upgrade by Simultaneous Removal of CO2 and H2S
in a Packed Column Reactor," Energy, 2010, pp. 1-5.

| [Van Lookeren Campagne, 200 | 9] Van | Lookeren | Campagne, | С., | "Design | of |
|-----------------------------|--------------|-------------------------|----------------|--------|------------|------|
| Fi | unctional Pr | operties for | Composite Sp | oheric | al Granula | tes: |
| Fi | unctional D | esign of S _l | pherical Gran | ulate | Composite | es," |
| E | ngineering I | Materials, 20 |)09, pp. 183-1 | 93 | | |

[Vijay, 2007] Vijay, V.K., "Biogas Refining for Production of Bio-Methane and its Bottling for Automotive Applications and Holistic Development," Proceeding of International Symposium on EcoTopics Science, ISETS07, 2007, pp. 623-628.

[Wankat, 2007]

[Yeh, 2005]

Wankat, P.C., *Separation Process Engineering*, Pearson Education, Inc, 2nd edition, 2007, ISBN: 0-13-084789-5.

 [Weissermel, 2003]
Weissermel, K., Arpe, K.J., Lindley, C.R. and Hawkins, S.,
"Chap. 7 Oxidation Products of Ethylene," *Industrial* Organic Chemistry, Wiley-VCH, 2003, pp.159 - 161.

> James, Yeh J.Y., Resnik, K.P., Rygle, R., Pennline, H.W., "Semi-batch absorption and regeneration studies for CO₂ capture by aqueous ammonia," Fuel Processing Technology, Vol.86, 2005, pp. 1533 - 1546.

[Yu, 2014] Yu, D., Kurola, J.M., Lähde, K., Kymäläinen, M., Sinkkonen, A., Romantschuk, M, "Biogas production and methanogenic archaeal community in mesophilic and thermophilic anaerobic co-digestion processes," Journal of Environmental Management, Vol. 143, 2014, pp. 54 - 60.

[Zafar, 2015]Zafar, S, "Online Publication," Biogas Enrichment Method,
May 10, 2015, http://www.bioenergyconsult.com
/tag/carbon-dioxide-removal/

[Zhang, 2012] Zhang, J., Qiao, Y. and Agar, D.W., "Intensification of Low Temperature Thermomorphic Biphasic Amine Solvent Regeneration for CO₂ Capture," Chemical Engineering Research and Design, Vol. 90, 2012. pp. 743-749.

[Zheng, 2015] Zheng, Q.R., Zhu, Z.W., Wang, X.H., "Applied Thermal Engineering Experimental Studies of Storage by Adsorption of Domestically Used Natural Gas on Activated Carbon," Vol. 77, 2015, pp. 134-141.

[Zhequan, 2013] Zhequan, J., Bo, T., Liwei, W. and Ruzhu, W., "Comparison on Thermal Conductivity and Permeability of Granular and Consolidated Activated Carbon for Refrigeration," ENERGY, RESOURCES AND ENVIRONMENTAL TECHNOLOGY, Chinese Journal of Chemical Engineering, Vol. 21, No. 6, 2013, pp. 676 - 682.

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LIST OF PUBLICATIONS

- Kamopas, W. and Kiatsiriroat, T., "Biogas Purification by Uniform Bubbly Flow in Ethanolamine Solution," The Second TSME International Conference on Mechanical Engineering, October 19-21, 2011, Krabi, Thailand.
- Kamopas, W. and Kiatsiriroat, T., "Regeneration of ethanolamine solution from biomethane of biogas purification with ultrasonic technique," The Conference on 7th century of Nan, The City of Forest River and People, January 17-19, 2013, Nan, Thailand.
- 3) Kamopas, W. and Kiatsiriroat, T., "Effect of Height to Diameter Ratio of a Gas Bubble Flow Column on Absorption of Carbon Dioxide in Biogas with Ethanolamine Solution," The 6th Thailand Renewable Energy for Community Conference, November 13-15, 2013, Mahasarakham, Thailand.
- Kamopas, W. Asanakham, A. and Kiatsiriroat, T., "Absorption of CO₂ in Biogas with Amine Solution for Biomethane Enrichment," Journal of Engineering and Technological Sciences.
- Kamopas, W. Asanakham, A. and Kiatsiriroat, T., "Study on Low Pressure Adsorption of Biomethane from Biogas by Coal Activated Carbon," Journal of Engineering Science and Technology.

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