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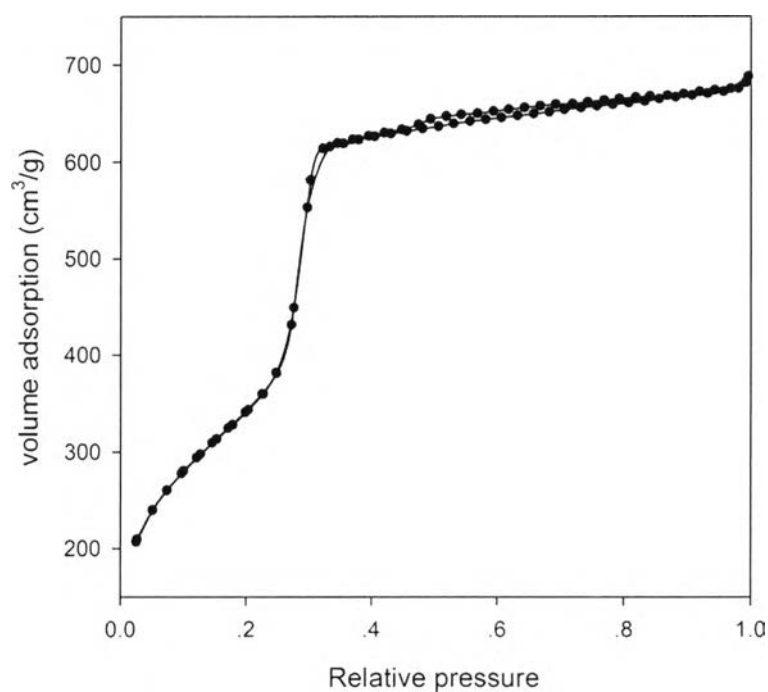
## APPENDIX

### Appendix A N<sub>2</sub> adsorption/desorption of MCM-48

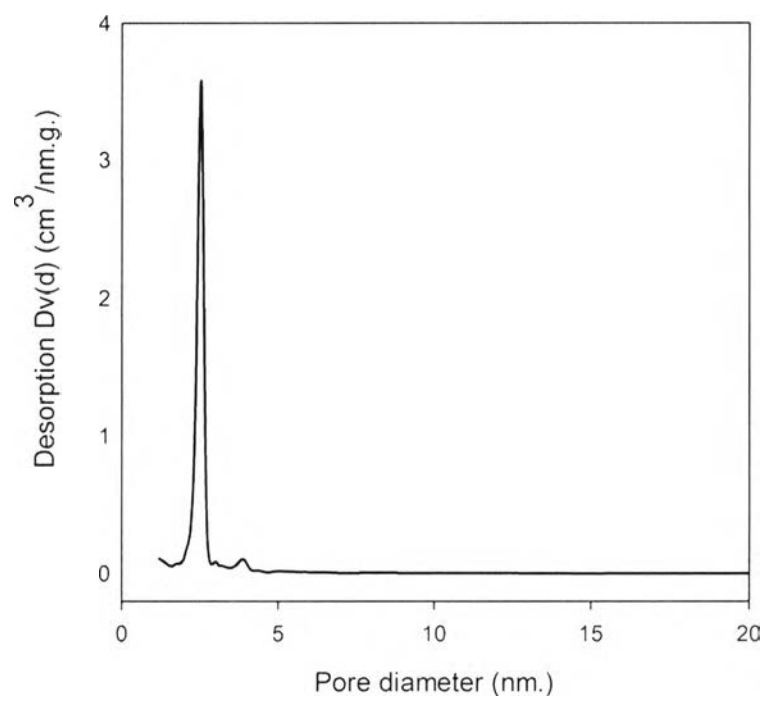
Surface area and pore volume of MCM-48 were analyzed using nitrogen adsorption-desorption isotherm. Pore size of MCM-48 was calculated from the desorption branch of the isotherm using the BJH method. The wall thickness of MCM-48 was calculated from the equation shown below.

$$\text{Unit cell } (a_0) = d\text{-spacing}(d_{211}) \cdot 6^{1/2}$$

$$\text{Wall thickness} = a_0/3.0919 - \text{pore diameter}/2$$



**Figure A1** The N<sub>2</sub> adsorption-desorption isotherms of MCM-48.



**Figure A2** Pore size distribution of MCM-48.

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2. Deeprasertkul, C.; Chaisuwan, T.; and Wongkasemjit, S. (2013, 23 April) Synthesis of ordered mesoporous ceria using MCM-48 as template. The 19<sup>th</sup> PPC Symposium on Petroleum, Petrochemicals, and Polymers, Bangkok, Thailand.

**Presentations:**

1. Deeprasertkul, C.; Chaisuwan, T.; and Wongkasemjit, S. (2013, March 3-7) Synthesis of ordered mesoporous ceria using MCM-48 as template. Third International Conference on Multifunctional, Hybrid and Nanomaterials, Sorrento, Italy.
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