

Permana, Indra, 2014, Sintesis Zeolit ZSM-5 Mesopori Melalui Kristalisasi Bertahap tanpa Penambahan Zat Pengarah Struktur. Skripsi ini di bawah bimbingan Dra. Hartati, M.Si dan Alfa Akustia W, S.Si, M.Si, Departemen Kimia, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

ZSM-5 merupakan salah satu zeolit dengan bentuk *Mobile Five I* (MFI). ZSM-5 memiliki keasaaman yang tinggi, sehingga dapat diaplikasikan dalam bidang katalis. ZSM-5 mesopori disintesis tanpa penambahan zat pengarah meso tetapi melalui kristalisasi bertahap. Sintesis ZSM-5 mesopori melalui kristalisasi bertahap secara langsung dan melalui penambahan larutan pembentuk inti kristal. ZSM-5 hasil sintesis dikarakterisasi dengan *X-Ray Diffraction* (XRD), *Fourier Transform Infrared* (FTIR), *Surface Area Analyzer*. ZSM-5 dapat diperoleh dengan sintesis melalui penambahan larutan pembentuk inti kristal, sedangkan sintesis tanpa larutan pembentuk inti kristal menghasilkan padatan amorf. ZSM-5 yang terbentuk memiliki luas permukaan meso sebesar 6,08% dan luas permukaan mikro 93,92% dengan diameter 3,808 nm.

Kata kunci : *Sintesis ZSM-5 mesopori, larutan pembentuk inti kristal, variasi metode kristalisasi, karakterisasi.*

Permana, Indra, 2014, Synthesis of Mesoporous ZSM-5 Through of Stage Crystallization Without the Structure Directing Agent. This thesis under the guidance of Dra. Hartati, M.Si and Alfa Akustia W, S.Si, M.Si, Department of Chemistry, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

ZSM-5 zeolite is one of the first forms of Mobile Five I (MFI). ZSM-5 has a high acidity, so it can be applied in the field of catalysts. Mesoporous ZSM-5 synthesized without the addition of mesoporous template but through steps crystallization. Synthesis of mesoporous ZSM-5 through the steps crystallization conducted the addition of nucleating crystal solution and without nucleating crystal solution. ZSM-5 synthesized were characterized by X-Ray Diffraction (XRD), Fourier Transform Infrared (FTIR), and Surface Area Analyzer. ZSM-5 can be obtained by synthesis through add nucleation crystal solution, while synthesis without nucleation crystal solution produce the amorphous solids. ZSM-5 which is formed has a mesoporous surface area of 6.08% and microporous surface area of 93.92% with diameter of 3.808 nm.

Keywords: Synthesis of mesoporous ZSM-5, nucleating crystal solution, the variation method of crystallization, characterization.