

**SINTESIS ZIF-8 DENGAN PENAMBAHAN LOGAM Sn
MENGUNAKAN METANOL SEBAGAI PELARUT MELALUI
METODE SOLVOTERMAL**

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ABSTRAK

Telah dilakukan penelitian tentang sintesis Sn-ZIF-8 menggunakan metanol sebagai pelarut. Sintesis Sn-ZIF-8 menggunakan metode solvotermal dan penambahan logam Sn untuk meningkatkan kerjanya. Sampel Sn-ZIF-8 disintesis dengan prekursor seng nitrat heksahidrat ($Zn(NO_3)_2 \cdot 6H_2O$) dan 2-metilimidazol dalam media metanol yang dipanaskan pada suhu $120^\circ C$ selama 24 jam dengan variasi 2,5%, 5%, 7,5%, 10% dan 12,5%. Berdasarkan hasil karakterisasi menggunakan XRD, pola difraksi sinar-X padatan hasil sintesis menunjukkan puncak-puncak karakteristik utama pada sudut $2\theta = 9,6675^\circ$; $10,4224^\circ$; $11,3373^\circ$; $12,0341^\circ$ dan $13,8474^\circ$. Hasil karakterisasi menggunakan FTIR menghasilkan puncak karakteristik Sn-ZIF-8 yaitu 985, 1384, 1641, 2330, 2422, 3298.

Kata kunci: Sn-ZIF-8, Sintesis, Solvotermal, Logam Sn, *Dopping*.

SYNTHESIS OF ZIF-8 WITH THE ADDITION OF Sn METAL USING METHANOL AS SOLVENT THROUGH SOLVOTHERMAL METHOD

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ABSTRACT

Studies have been conducted on the synthesis of Sn-ZIF-8 using methanol as a solvent. Synthesized Sn-ZIF-8 using the solvothermal method and the addition of Sn metal to enhance its work. Sn-ZIF-8 samples were synthesized with precursors zinc nitrate hexahydrate ($\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$) and 2-methylimidazole in methanol medium heated at 120°C for 24 hours with variations of 2.5%, 5%, 7.5%, 10% and 12.5%. Based on the results of characterization using XRD, the X-ray diffraction pattern of the synthesized solids showed the main characteristic peaks at an angle of $2\theta = 9.6675^\circ$; 10.4224° ; 11.3373° ; 12.0341° and 13.8474° . The results of characterization using FTIR produced peak characteristics of Sn-ZIF-8, namely 985, 1384, 1641, 2330, 2422, 3298.

Keywords: Sn-ZIF-8, Synthesis, Solvothermal, Metal Sn, Dopping.