

ABSTRACT

Metal Organic Framework (MOF) is a crystalline porous material with nanometer size, high purity and has a topology similar to zeolite. MOF has a large surface area, adjustable pore size, has the ability to absorb and store gas, and can be used for catalyze. This research is aimed to study the MOF MIL-101 (Cr) incooperated with, Activate Nature Zeolite(ZAA/ANZ). The MOF thin film was fabricated using the drop casting method. The MOF solution is made by dissolving a 23 mg/ μ L MOF in 115 μ L isopropanol and sonicating using Ultrasonic Bath ultrasonic probe sonic for 90 minutes. A 2 μ L MOF solution was subsequently deposited on a SiO₂ substrate. The silver paste was used as the electrodes with width of 5 and 10 mm distance between and eledtrodes. All electrical characterizationis carried out in a closed test room. The change of MOF resistance and current were observed when they are exposed to CO₂. The change of electronic signal started to be observed when CO₂ concentration was above 500 ppm. The values were back to their original when the CO₂ was stopped. Theses results indicate that CO₂ is well adsorbed and released by MOFs and suggest the potential application of MOFs as CO₂ sensor.

Keywords : Metal Organic Framework , Drop Casting, Electrical Properties, Thin Films, CO₂ Adsorber