

## **ABSTRACT**

*The maximum indoor CO<sub>2</sub> concentration is 1000ppm per 8 hours according to Minister of Health Regulation of. To keep the concentration below the maximum value, the filter are usually in air purifier as gas adsorbers. Activated Natural Zeolite (ANZ) is a hydrated alumino silicate material that has a molecular pore like cage and has reported be effective for adsorbing CO<sub>2</sub> in the air. This research explores the ability of ANZ as a CO<sub>2</sub> adsorbent and implemented it as additional filter in commercial air purifier which is not specifically equipped with CO<sub>2</sub> adsorbent filter. A MG-811 sensor were used to measure CO<sub>2</sub> level in inlet and outlet air purifier. The test is conducted by varying the position of outlet sensor, the speed of air purifier fan, and ANZ mass. It is found that the ANZ decreases the CO<sub>2</sub> level in the air purifier outlet with average difference of CO<sub>2</sub> levels at the inlet and outlet are about 111-316ppm. The CO<sub>2</sub> level increases when sensor is placed far from the outlet. There is 90ppm change from 650 to 850rpm. The higher is the ANZ mass results in the lower CO<sub>2</sub> level. Further investigation on the design of ANZ filter as well as the optimization of ANZ mass, and fan are required.*

**Keyword:** *Activated Naturel Zeolite, CO<sub>2</sub>, Filter*