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PREPARATION OF UiO-66-MOFs FROM PLASTIC BOTTLE WASTE FOR GAS ADSORPTION MATERIAL APPLICATION

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Nowadays, the most anxious problem is global warming which caused by an emission of CO2. To solve this problem, this research proposes the use of high porosity, stability, and simple synthesized material, metal-organic framework (MOFs). The aim of this work are synthesis and chemical modification of MOFs, UiO-66(Zr) that prepared from plastic waste, polyethylene terephthalate (PET). Hydrothermal technique was carried out for depolymerization of PET to produce orgainic ligand, BDC, then modulated synthesis technique for UiO-66(Zr). FTIR showed O=C–O in carboxylate group in BDC at 1675 cm–1and a smaller band at 1508 cm–1 presented C=C vibration of a benzene ring. These are summarized that is the success of synthesizing BDC from PET. However, to confirm a chemical structure NMR will be reported. The further step are using hydrothermal and ultrasonication techniques to synthesize combination two of UIO-66 with NH2, NH2-GO, and NH2-GMA functional groups and their characterization. After that, investigation of their CO2 absorption efficiency will be examined.

Author: VISANUPORNPRASIT, Chawisa

Presenter: VISANUPORNPRASIT, Chawisa

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