

## **ABSTRACT**

*The increase in public demand for plastic has led to increasing in plastic production. This is directly proportional to the generation of PVC waste. Several plastic waste treatments have been carried out, such as pyrolysis and hydrothermal decomposition, but these methods are less efficient because they require a lot of energy. Therefore, this study was conducted to determine the effect of 1-metilimidazole pretreatment in degrading PVC plastic with a more environmentally friendly and energy-efficient method. The study used an experimental method by mixing PVC plastic wrap and 1-metilimidazole. Samples from the process were characterized by FTIR and Raman Spectroscopy. The results showed that 1-metilimidazole could degrade PVC at room temperature after being mixed for 24 hours. Meanwhile, the 1-metilimidazole liquid that has been used can be reused to degrade PVC. In, addition, this research has been registered as a patent entitled Plastic Waste Treatment Method with Imidazolium Ionic Liquid with patent number S00202101717.*

**Keywords:** *1-metilimidazol, FTIR, plastic, pretreatment, raman spectroscopy*