

CAMP : Conversion of Medical Mask Waste with the Addition of HDPE Plastic into Bio-Oil Using the Co-pyrolysis Method

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ABSTRACT

Background: Since 2019, the phenomena of the transmission of the Sars CoV-2 virus, also known as Coronavirus Disease 2019 are still happening. The most common efforts to prevent the spread of Covid-19 is use medical masks in accordance with the health protocol recommendations from the Indonesia government. WHO recommend use a medical masks maximum 4 hours a day. The aim of this study is to utilize medical mask waste with the addition of HDPE (High Density Polyethylene) plastic to produce alternative bio-oil energy products.

Method: The method used in this study is a quantitative and qualitative data-based method with literature studies and research, in which we collect data from various scientific journal sources, such as Garuda Ristekdikti, SINTA, and Google Scholar, using the keywords medical mask waste, Pyrolysis, Plastic waste, and HDPE.

Result: The Pyrolysis produce bio oil that can be used as an alternative energy. Conversion of mask waste obtained from the pyrolysis method ranges from 50-60% liquid phase, solid (char) and gases. We improve the quantitative results by adding another raw material variable in the form of HDPE plastic, in which the ratio used is 1:1.

Conclusion: The pyrolysis result of medical mask and HDPE plastic with a ratio of 1:1 has been proven to be able to improve the quality of our products qualitatively and quantitatively, which is obtain 28% of solid phase, 54% liquid phase and 18% gas phase,.

Keywords: Covid-19, Medical Mask, HDPE, Pyrolysis