Simulasi Produksi Biofuel Terintegrasi Berbasis Minyak Kelapa Sawit dan Minyak Biji Nyamplung serta Analisis Siklus Karbon = Simulation of Intergrated Biofuel Production Based On Palm Oil and Nyamplung Seeds Oil and Carbon Life Cycle Analysis

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Abstrak

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<i>ABSTRACT
The main energy sources in Indonesia generally still rely on fossil fuels, such as petroleum, coal and natural gas. Biofuel is a solution that can be applied as a substitute for fossil fuels. This research was conducted by simulating the biofuel production process and calculating the amount of carbon dioxide emissions produced. This simulation is done by modeling the hydroprocessing process using Unisim R390.1 by optimizing the operating conditions for each raw material. The Hydrotreatment process was varied at a pressure of 1-5 MPa and a temperature of 250oC - 350oC. shows that palm oil is the most effective in producing bioavtur at a temperature of 300oC and a pressure of 3 MPa, while nyamplung oil is the most effective for producing renewable diesel at a temperature of 300oC and a pressure of 3 MPa. The calculation of the number of emissions from the carbon dioxide life cycle shows that to produce 1 kg of biofuel, 3.82 x 103 kg of CO2 is produced