Prototype for continuous biodiesel production.

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Biodiesel is green fuel substitutes derives from vegetable oil. Biodiesel has several advantages over petroleum-based diesel fuel such as its environmental advantage and renewable resource availability. Generally, biodiesel is produced by transesterification process wherein vegetable oil is reacted with methanol in the presence of sodium hydroxide as a base catalyzed. Oil palm, which is the highest vegetable oil production in Thailand, is one of the potential raw materials for biodiesel production. Thus, a mobile prototype for continuous biodiesel production from crude palm oil was developed in this study. The prototype was designed for producing 150 liters biodiesel per day by the continuous base transesterification process. It consists of two main parts, namely production unit and purification unit that requires electricity supplied of 220 Volt, 60 Amp. Conversion of crude palm oil into biodiesel in excess of 85% was achieved. The qualities of the biodiesel produced met the ASTM 6751 standard.