

# Small Scale Stationary and Mobile Production of biodiesel

M.Y. Abduh, R. Manurung, Hero Jan Heeres

**Abstract**—Biodiesel can be produced in small scale mobile units which are designed with local input and demand. Unlike the typical biodiesel production plants, mobile biodiesel unit consists of a biodiesel production facility placed inside a standard cargo container and mounted on a truck so that it can be transported to a region near the location of raw materials. In this paper, we review the existing concept and unit for the development of community scale and mobile production of biodiesel. This include the main reactor technology to produce biodiesel as well as the pre-treatment prior to the reaction unit. The pre-treatment includes the oil-expeller unit to obtain oil from the oilseeds as well as the quality control of the oil before it enters the reaction unit. This paper also discusses the post-treatment after the production of biodiesel. It includes the refining and purification of biodiesel to meet the product specification set by the biodiesel industry.

**Keywords**—Biodiesel, Community Scale, Mobile Biodiesel Unit, Reactor technology

M. Y. Abduh is with the Institut Teknologi Bandung, Jalan Ganesha 10, 40132 Bandung, Indonesia (phone: 62 22 251 1575; fax: 62 22 253 4107; e-mail: yusuf@ sith.itb.ac.id).

R. Manurung is with the Institut Teknologi Bandung, Jalan Ganesha 10, 40132 Bandung, Indonesia (phone: 62 22 251 1575; fax: 62 22 253 4107; e-mail: manurung@ sith.itb.ac.id).

H.J. Heeres is with the University of Groningen, Nijenborgh 4 9747 AG Groningen, The Netherlands (phone: 31 50 363 4174; fax: 31 50 363 4479; e-mail: h.j.heeres@rug.nl).