

## **Enzymatic synthesis of fatty amides from palm olein**

### **Abstract**

Fatty amides have been successfully synthesized from palm olein and urea by a one-step lipase catalyzed reaction. The use of immobilized lipase as the catalyst for the preparation reaction provides an easy isolation of the enzyme from the products and other components in the reaction mixture. The fatty amides were characterized using Fourier transform infrared (FTIR) spectroscopy, proton nuclear magnetic resonance ( $^1\text{H}$  NMR) technique and elemental analysis. The highest conversion percentage (96%) was obtained when the process was carried out for 36 hours using urea to palm oil ratio of 5.2: 1.0 at 40°C. The method employed offers several advantages such as renewable and abundant of the raw material, simple reaction procedure, environmentally friendly process and high yield of the product.

**Keyword:** Palm olein; Urea; Fatty amides; Lipozyme