

Na/g-C<sub>3</sub>N<sub>4</sub>계 촉매를 이용한 바이오디젤 합성 연구김성은<sup>1,2</sup>, 김지후<sup>1</sup>, 김덕근<sup>1</sup>, 김학주<sup>1,†</sup><sup>1</sup>한국에너지기술연구원; <sup>2</sup>고려대학교(hakjukim@kier.re.kr<sup>†</sup>)

Biodiesel is a promising future energy that can substitute the petroleum-based fuels. Furthermore, the consumption of biodiesel is expected to increase with reinforced regulations to contain a minimum volume of biodiesel. The biodiesel could be obtained by transesterification of triglyceride (TG) in the presence of an alcohol over the basic catalysts. Homogeneous catalysts, such as NaOH and KOH, have been widely applied due to its low cost and fast reaction rates. Recently heterogeneous catalyst is studied with the several advantage such as, no soap formation, high purity of obtained biodiesel and separability

g-C<sub>3</sub>N<sub>4</sub> has graphene-like structure with successive triazine and tri-s-triazine rings. g-C<sub>3</sub>N<sub>4</sub> could be obtained by polycondensation of C, N compounds such as urea, thiourea, cyanamide, dicyandiamide and melamine. The nitrogen of g-C<sub>3</sub>N<sub>4</sub> not only contributes the basicity to the g-C<sub>3</sub>N<sub>4</sub> but also acts as anchor as a support for metal. Na was also employed for the improved the basicity of the catalysts. In this study, g-C<sub>3</sub>N<sub>4</sub> is applied as a both support and catalyst for biodiesel production over the reflux system.