

Pyrolysis characteristics and kinetics of microalgal *Aurantiochytrium* sp. KRS101

김진수[†], The Ky Vo¹, Hoang Vu Ly¹, 이옥경¹, 이은열¹,

김승수²

경희대학교; ¹경희대학교 화학공학과;

²강원대학교 화학공학과

(jkim21@khu.ac.kr[†])

The pyrolysis characteristics and kinetics of *Aurantiochytrium* sp. KRS101 were investigated. The effect of using different heating rates during the pyrolysis (5, 10, 15, 20° C/min) was investigated by means of thermogravimetric analysis. Most of the materials decomposed between 150 and 600 °C at each heating rate. The average activation energy calculated by means of the Kissinger–Akahira–Sunose method was 118.54 kJ/mol during the stage when the pyrolytic conversion was between 10% and 95%. Pyrolysis of *Aurantiochytrium* sp. KRS101 was carried out in a tubing reactor at 360 to 380 °C and for the reaction times of 0.25 to 1.5 min. A three-lump kinetic model was proposed and the calculated results were compared with the experimental data.