PLCL 고분자의 방사선 손상에 대한 Geant4 시뮬레이션 연구

심하은, 박진형, 임대희, 연영흠, 이남호, 권희정†
한국원자력연구원 첨단방사선연구실
(she0805@kaeri.re.kr†)

In this study the degradation behavior of poly(L-lactide-co-ε-caprolactone) (PLCL) was investigated under depending on the level of gamma-ray irradiation and preliminary compared with Geant4 simulation study. Exposure to gamma radiation reduced the average molecular weight (M_n and M_w), and weakened mechanical strength, because it affects the hydrolysis factor and reduces stability. The degradation patterns with Geant4 simulation were obtained after calculating the changes of number-average molecular weight. In conclusion, the predicted results showed a similar tendency to the results of the experiment carried out in this study.