

C618794 :MAJOR NUCLEAR TECHNOLOGY

KEY WORD :RADIATION CROSSLINKING/GAMMA IRRADIATION

THAWATCHAI ITTHIPOONTHANAKORN:FABRICATION OF A
POLYETHYLENE HEAT-SHRINKABLE MATERIAL BY GAMMA
IRRADIATION. THESIS ADVISORS:ASST. PROF.CHYAGRIT
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The objective of this research was to study the fabrication of heat-shrinkable polyethylene by gamma irradiation. The studies included irradiation in an inert gas or vacuum, variation of doses and thickness of films. Testing for mechanical properties, gel content and melting point at various radiation dose of films were also conducted

Results from the experiment showed that increasing of radiation dose (100 to 400 kGy) and increasing of thickness of films (25 to 125 micrometers) resulted in decreasing in degree of shrinking. Tensile strength and elongation at break were found to be increased and decreased respectively at radiation dose from 100-400 kGy. Beyond 400 kGy the film properties became poorer than that from irradiation at lower doses.