

Synthesis of reactive terpolymers and dependence of their characteristics on comonomer content

김정수, 김동현[†]
한국생산기술연구원
(dhkim@kitech.re.kr[†])

Novel terpolymers with a reactive moiety were synthesized using coordination polymerization with a metallocene catalyst and a cocatalyst system. C₂-symmetric rac-Et(Ind)₂ZrCl₂ and tri-*iso*-butylaluminum/dimethylanilinium tetrakis (pentafluorophenyl) borate were used as the catalyst and cocatalysts, respectively. We synthesized reactive terpolymers consisting of ethylene, a high α -olefin (1-hexene, 1-octene, 1-decene, and 1-dodecene), and divinylbenzene. The structure and composition of the terpolymers were examined by ¹H nuclear magnetic resonance analysis. The catalytic activity, polymer yield, molecular weight, and molecular weight distribution were analyzed as functions of the chain length and content of high α -olefin. The thermal properties and crystallinity were determined using differential scanning calorimetry and wide-angle X-ray scattering.