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(54) Title: PROCESS OF POLYMERIZING TRI-FUNCTIONAL LONG-CHAIN BRANCHED OLEFIN

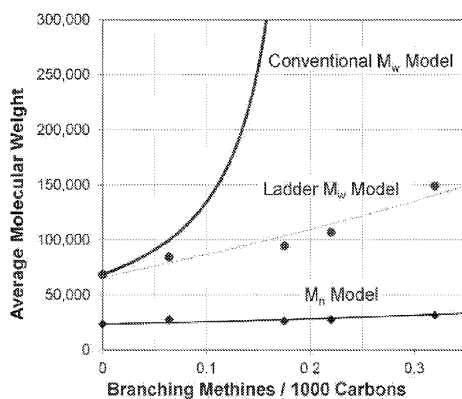
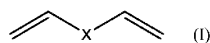


FIG. 1

(57) Abstract: Processes of synthesizing long-chain branched polymers. The processes include contacting together one or more C₂-C₁₄ alkene monomers, at least one diene, optionally a solvent, and a multi-chain catalyst optionally in the presence of hydrogen, wherein the multi-chain catalyst comprises a plurality of polymerization sites; producing at least two polymer chains of the C₂-C₁₄ alkene monomers, each polymer chain polymerizing at one of the polymerization sites; synthesizing the long-chain branched polymers by connecting the two polymer chains with the diene, the joining of the two polymer chains being performed in a concerted manner during the polymerization; and producing tri-functional long chain branches and tetra-functional long chain branches from the diene, wherein the long-chain branched polymers have a ratio of tri-functional to tetra-functional long chain branches from 0.05:1 to 100:0; and adjusting the ratio of tri-functional and tetra-functional long chain branches. The diene has a structure according to formula (I):

[Continued on next page]

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
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