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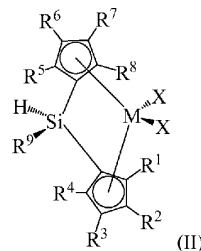
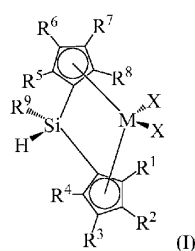
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(54) Title: METALLOCENE CATALYSTS, CATALYST SYSTEMS, AND METHODS FOR USING THE SAME



(57) Abstract: Disclosed herein is a catalyst compound represented by Formula (I) or Formula (II). M is a group 4 metal. Each of R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, and R⁹ is independently hydrogen, or a C1-C50 substituted or unsubstituted hydrocarbyl, halocarbyl, silylcarbyl, alkoxyl, siloxyl, or one or more of R¹ and R², R² and R³, R³ and R⁴, R⁵ and R⁶, R⁶ and R⁷, and R⁷ and R⁸ are joined to form cyclic a saturated or unsaturated ring. Each X is independently a halide or C1-C50 substituted or unsubstituted hydrocarbyl, hydride, amide, alkoxide, sulfide, phosphide, halide, or a combination thereof, or two Xs are joined together to form a metallocycle ring, or two Xs are joined to form a chelating ligand, a diene ligand, or an alkylidene. Also disclosed is a method for using the catalyst compound in a catalyst system to produce polyolefin polymers.

WO 2018/067259 A1