



## Olefin Polymerization

(Polyolefins, Cyclo-olefin copolymers, syndiotactic polystyrene)

1. Propylene polymerization in liquid slurry and gas phase Ziegler-Natta catalysis (K.Y. Choi, T.W. Taylor, and W.H. Ray), in ***Polymer Reaction Engineering***, 314-326, K.H. Reichert and W. Geiseler, eds., Hanser, New York, 1983.
2. Polymerization of olefins through heterogeneous catalysis. I. Low pressure propylene polymerization in slurry with Ziegler-Natta catalyst (H.G. Yuan, K.Y. Choi, T.W. Taylor, and W.H. Ray), ***J. Appl. Polym. Sci.***, 27, 1691-1706 (1982).
3. Physicochemical kinetics of liquid phase propylene polymerization (T.W. Taylor, K.Y. Choi, and W.H. Ray), ***MMI Symp. Ser.***, Vol.4, Part A, 191-223, Harwood Academic Pub., New York (1983).
4. Recent developments in commercial propylene polymerization (K.Y. Choi and W.H. Ray), ***Polymer (Korea)***, 8(1), 17-33 (1984).
5. Kinetics of gas phase propylene polymerization over Ziegler-Natta catalyst (K.Y. Choi and W.H. Ray), ***J. Appl. Polym. Sci.***, 30, 1065-1081 (1985).
6. Recent developments in transition metal catalyzed olefin polymerization—A survey. (I) Ethylene polymerization (K.Y. Choi and W.H. Ray), ***J. Macromol. Sci.-Rev. Macromol. Chem. Phys.***, C25(1), 1-55 (1985).
7. Recent developments in transition metal catalyzed olefin polymerization—A survey. (II) Propylene polymerization (K.Y. Choi and W.H. Ray), ***J. Macromol. Sci.-Rev. Macromol. Chem. Phys.***, C25(1), 57-97 (1985).
8. The dynamic behavior of a fluidized bed reactor for solid catalyzed gas phase olefin polymerization (K.Y. Choi and W.H. Ray), ***Chem. Eng. Sci.***, 40(12), 2261-2279 (1985). ***The first paper published on modeling of a gas phase fluidized bed reactor!***
9. Control of molecular weight distribution of polyethylene in continuous stirred tank reactors with high activity soluble Ziegler-type catalyst (K.Y. Choi), ***J. Appl. Polym. Sci.***, 30, 2707-2710 (1985).
10. Polymerization of olefins through heterogeneous catalysis. III. Polymer particle modeling with an analysis of intraparticle heat and mass transfer effects (S. Floyd, K.Y. Choi, T.W. Taylor, and W.H. Ray), ***J. Appl. Polym. Sci.***, 32, 2935-2960 (1986).
11. Polymerization of olefins through heterogeneous catalysis. IV. Modeling of heat and mass transfer resistance in the polymer particle boundary layer (S. Floyd, K.Y. Choi, T.W. Taylor, and W.H. Ray), ***J. Appl. Polym. Sci.***, 31, 2231-2265 (1986).
12. The dynamic behavior of continuous stirred bed reactors for the solid catalyzed gas phase polymerization of propylene (K.Y. Choi and W.H. Ray), ***Chem. Eng. Sci.***, 43(10), 2587-2604 (1988).
13. Continuous polymerization of olefins with soluble Ziegler-Natta catalysts (K.J. Kim and K.Y. Choi), ***A.I.Ch.E.J.***, 37(8), 1255-1260 (1991).
14. Population balance modeling for a continuous gas phase ethylene polymerization reactor (K.Y. Choi, X. Zhao, and S. Tang), ***J. Appl. Polym. Sci.***, 53, 1589-1597 (1994).
15. On-line parameter estimation in a continuous polymerization process (A. Sirohi and K.Y. Choi), ***Ind. Eng. Chem. Res.***, 35, 1332-1343 (1996).
16. Estimation of kinetic parameters in transition metal catalyzed gas phase olefin copolymerization processes (K.Y. Choi, S. Tang, and A. Sirohi), ***Ind. Eng. Chem. Res.***, 36, 1095-1102 (1997).



17. Polymer particle mixing and segregation in a gas phase olefin polymerization reactor (J.Y. Kim and K.Y. Choi), in **AICHE Symp. Ser. 95** (321), Advanced Technologies for Fluid-Particle Systems, 77-82 (1999).
18. Particle mixing and segregation in a fluidized bed gas phase olefin polymerization reactor (K.Y. Choi and J.Y. Kim), **Chem. Eng. Sci.** 56, 4069-4083 (2001).
19. Copolymerization of ethylene and norbornene with metallocene catalysts (K.Y. Choi, S.Y. Park, B.Kebede, J.J. Han, and K.H. Song), Paper presented at the International Symposium on Polyolefins and Olefin Polymerization Catalysis, Tokyo, Japan, March 21-24, 2001.
20. Kinetics of slurry phase polymerization of styrene to syndiotactic polystyrene with pentamethyl cyclopentadienyl titanium trimethoxide and methyl aluminoxane. I. Reaction rate analysis (K.Y. Choi, J.S. Chung and B.G. Woo), **J. Appl. Polym. Sci.**, 88, 2132-2137 (2003).
21. Polymerization rate modeling of ethylene polymerization with supported chromium oxide catalysts (K.Y. Choi and Shihua Tang), **J. Appl. Polym. Sci.**, 91, 2923-2927 (2003).
22. Kinetic modeling of ethylene-norbornene copolymerization using homogeneous metallocene catalysts (S.Y. Park, K.Y. Choi, K.H. Song, B.G. Jung), **Macromolecules**, 36, 4216-4225 (2003).
23. Syndiospecific polymerization of styrene with embedded metallocene catalysts (J.S. Chung, B.G. Woo, and K.Y. Choi), **Macromolecular Symposia**, 206, 375-382 (2004).
24. Modeling of ethylene polymerization kinetics with supported chromium oxide catalysts (K.Y. Choi, S. Tang, W.J. Yoon), **Macromol. Chem. Theory and Simulation**, 13, 169-177 (2004).
25. Modeling of ethylene-norbornene copolymerization with ansa-zirconocene/MAO catalysts in a continuous polymerization reactor (S.Y. Park, K.Y. Choi, and B.G. Jeong), **Ind. Eng. Chem. Res.**, in press (2005).
26. Modeling of ethylene-norbornene copolymer microstructure in solution polymerization with homogeneous metallocene catalysts (S.Y. Park and K.Y. Choi), **Macromol. Materials and Engineering**, 290, 353-362 (2005).
27. Physical transitions and nascent morphology of syndiotactic polystyrene in slurry polymerization with embedded Cp\*Ti(OMe)<sub>3</sub>/Methyl Aluminoxane catalyst (H.W. Lee, K.Y. Choi, and J.S. Chung), **Polymer**, 46, 5032-5039 (2005).
28. Development of a reduced-order model for metallocene-catalyzed ethylene-norbornene copolymerization reaction (S.Y. Park, J. Lee, and K.Y. Choi), Proc. of APCRE'05 (4th Asia Pacific Chemical Reaction Engineering Conference, Gyeongju, Korea), 591-592 (2005).
29. Polymerization of ethylene with embedded metallocene catalysts (G.B. Moon, K.Y. Choi, and J.S. Chung), Proc. of APCRE'05 (4th Asia Pacific Chemical Reaction Engineering Conference, Gyeongju, Korea), 615-616 (2005).
30. A reduced order Markov kinetic model for ethylene-norbornene copolymerization over homogeneous metallocene catalysts (S.Y. Park, J.K. Lee and K.Y. Choi), **Macromolecular Reaction Engineering**, 1, 68-77 (2007).
31. Rate analysis and molecular weight distribution modeling of syndiospecific styrene polymerization over heterogeneous silica-supported metallocene catalyst (J.J. Han, W.J. Yoon, K.Y. Choi), **Polymer**, 48, 6519-6531 (2007).
32. Ultrahigh molecular weight syndiotactic polystyrene nanofibrils in silica nanotube reactors (K.Y. Choi, J.J. Han, B. He, S.B. Lee), **Journal of American Chemical Society**, 130, 3920-3926 (2008).
33. Nascent morphology of syndiotactic polystyrene synthesized over silica-supported metallocene catalyst (J.J. Han, H.W. Lee, K.Y. Choi), **Polymer**, 49, 4141-4149 (2008).