

## عنوان مقاله:

Study of Ziegler-Natta/(2-PhInd)<sub>2</sub>ZrCl<sub>2</sub> hybrid catalysts performance in slurry propylene polymerization

## محل انتشار:

دوفصلنامه پلی اولفین ها، دوره 2، شماره 2 (سال: 1394)

تعداد صفحات اصل مقاله: 15

## نویسندگان:

Gholam-Reza Nejabat - Polymerization Engineering Department, Iran Polymer and Petrochemical Institute (IPPI), P.O. Box 14975/112, Tehran, Iran. The George and Josephine Butler Polymer Research Laboratory, Department of Chemistry, University of Florida, Gainesville, Florida 32611

Mehdi Nekoomanesh - Polymerization Engineering Department, Iran Polymer and Petrochemical Institute (IPPI), P.O. Box 14975/112, Tehran, Iran

Hassan Arabi - Polymerization Engineering Department, Iran Polymer and Petrochemical Institute (IPPI), P.O. Box 14975/112, Tehran, Iran

Hamid SalehiMobarakeh - Polymerization Engineering Department, Iran Polymer and Petrochemical Institute (IPPI), P.O. Box 14975/112, Tehran, Iran

## خلاصه مقاله:

Smatallocene catalysts using triethylaluminum (TEA) as coupling agent. Response surface methodology (RSM) several types of hybrid catalysts are made through mixing of 4th generation Ziegler-Natta (ZN) and (2-PhInd)<sub>2</sub>ZrCl<sub>2</sub> is used to evaluate the interactive effects of different parameters including amounts of metallocene and TEA and temperature on metallocene loading. Analyzing the amounts of Al and Zr elements in the hybrid catalysts through ICP-OES and EDXA reveals that temperature plays a crucial role on anchoring of the metallocene catalyst on ZN while TEA has the least determining effect. The ICP analysis shows that as the concentration of Al goes up in the hybrid catalyst the concentration of Zr passes a maximum, while EDXA shows a direct relationship between the Al and Zr contents. Using triisobutylaluminum (TIBA) and methylaluminoxane (MAO) as the coupling agents, almost similar metallocene loadings are observed. Finally, the performance of hybrid catalysts is investigated in propylene polymerization and the obtained polymers are characterized using DSC and DMTA through which the presence of two types of polymers in the final product are confirmed. Polyolefins J (2015) 2: 73-87

## کلمات کلیدی:

Hybrid catalysts; Ziegler-Natta; metallocene; surface analysis; bulk analysis; polypropylene

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/602903>



