The Department of Chemistry
Western University

invites you to

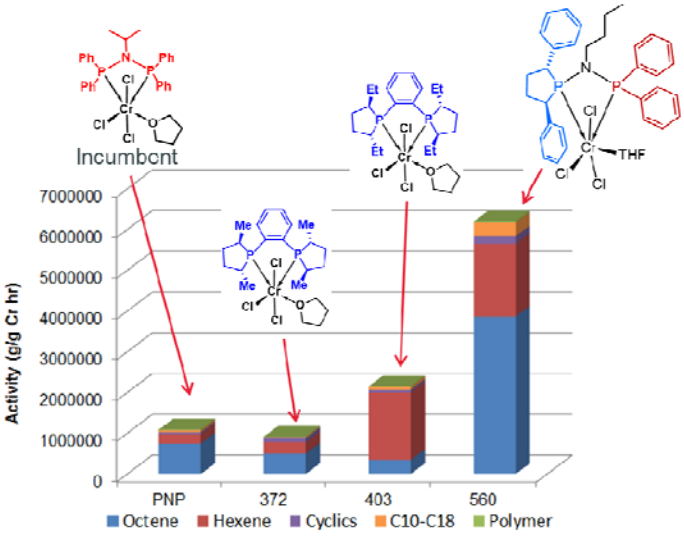
THE PAUL de MAYO AWARD LECTURE

Dr. Ryan R. Maar

The Dow Chemical Company
Midland, Michigan, U.S.A.

Chromium-Catalyzed Ethylene Tetramerization Using Phospholane-Based Ligands

Ethylene tetramerization is an attractive technology for the selective production of 1-octene which is commonly used as co-monomer in the production of linear low-density polyethylene (LLDPE). This catalysis was first reported in 2004 using a chromium pre-catalyst supported by a bis(diphenylphosphino)isopropylamine (iPr-PNP) ligand, and improvements to this technology have been sought since its introduction. Most notably, maximizing selectivity for 1-octene and minimizing the formation of undesirable byproducts, especially high density polyethylene (HDPE) which is formed in low levels but can lead to reactor fouling, is desired. This presentation will describe the discovery of new chromium catalysts for ethylene tetramerization based on phospholane-containing ligand frameworks. Structure-property relationships among the prepared catalysts were investigated, and it was determined that the steric bulk of the ligand impacts reaction selectivity, with smaller ligands providing higher selectivity to 1-octene. These new phospholane-containing catalysts were found to be significantly more active and produce lower levels of HDPE than incumbent technology.



Wednesday, December 9, 2020
at 1:30 pm via Zoom

If you require information in an alternate format, or if any other arrangements can make this event accessible to you,

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