

Novel and efficient catalysts for olefin polymerization

EXECUTIVE SUMMARY

One pot synthesis process of novel and efficient catalysts used for olefin polymerization.

BACKGROUND

Polyolefins are raw materials used in wide range of industries. Modern applications have triggered the development of polyolefins with improved properties. Metal catalyzed olefin polymerization is an established approach. Some of the currently used processes to synthesize these catalysts are time-consuming, multistep and tedious. Efficient and cost effective catalysts systems are needed to reduce overall cost of manufacturing.

TECHNOLOGY DESCRIPTION

NCL scientists have developed simple, single step and one pot synthesis of self-assembled catalyst. It simplifies complex and tedious processes.

MARKET POTENTIAL

- Polyolefin market is expected to grow up to 348 Billion USD by 2025 at a growth rate of 6.7 %.
- Asia is one of the largest markets for polyolefins, with China, India and Japan contributing a major share.

<https://www.prnewswire.com/news-releases/the-global-polyolefin-market-size-is-expected-to-reach-usd-34831-billion-by-2025-300623644.html>

VALUE/ADVANTAGES

- It is simple and one step process
- This is a self-assembled catalyst
- Does not require co-catalyst
- It can be tailored to deliver polyolefin waxes
- Stated catalyst system can help to reduce overall time and cost of the process.

APPLICATIONS

- Electronics, packaging, construction, medical, pharmaceuticals
- Polypropylene and polyethylene are widely used in blow molding, injection molding, fibers, film and sheets, and other applications.

TECHNOLOGY STATUS

- Demonstrated at the lab scale
- On the lookout for potential partners for spin-off and licensing
- Patent application filed: [PCT/IN2017/050310](https://www.patent.gov.in/patent/PCT/IN2017/050310)