

International Conference on

Industrial Chemistry

June 27-28, 2016 New Orleans, Louisiana, USA

**Do Hyun Kim**

KAIST, South Korea

Practical process for the chemical recycling of PET

The recycling of chemicals is a central topic in the efforts toward sustainable development. Among these, we present our work on the chemical depolymerization of polyethylene terephthalate (PET) to recover its constituent monomer. Research and development on designing novel catalysts for improving monomer yield and catalyst efficiency remains a primary goal in optimizing the depolymerization process. Also, most proposed processes are limited to the use of pristine PET. The low-grade PET should be chemically treated to remove impurities before depolymerization. We demonstrate various flexible yet practical synthesis strategies, e.g. ultrasound-assisted deposition, biopolymer coating, to obtain optimum catalytic properties and pre-treatment of low-grade PET for depolymerization of PET to recover its constituent monomer. The effectiveness and simplicity of these methods render the process to be truly green — from synthesis up to process application.

Biography

Do Hyun Kim is the Professor of department of chemical and biomolecular engineering at KAIST since 1991. He received his ScD in Chemical Engineering from MIT. He served the President of the Korean Society of Rheology in 2012. He is currently the Director of Energy and Environment Research Center at KAIST and a member of National Academy of Engineers of Korea. His present research focuses on the fabrication of functional surfaces, development of process for PET recycling, design of novel microfluidic devices, application of Taylor-Couette flow, detection of tumor cells and catalytic and electronic application of 2-d and 3-d structure.

dohyun.kim@kaist.edu