

School Seminar (2015-8)

School of Materials Science & Engineering

“A New Strategy for Group Transfer Polymerization; Dual Catalytic Property of $B(C_6F_5)_3$ for Polymerization and 1,4-Hydrosilylation of (Meth)acrylate Monomers”

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2015. 03. 18. (Wed.) 16:00

APRI 1F, Auditorium Hall

Title;

A New Strategy for Group Transfer Polymerization; Dual Catalytic Property of $B(C_6F_5)_3$ for Polymerization and 1,4-Hydrosilylation of (Meth)acrylate Monomers

Abstract;

The group transfer polymerization (GTP) of *n*-butyl acrylate (*n*BA) using hydrosilane (R_3SiH) and tris(pentafluorophenyl)borane ($B(C_6F_5)_3$) has been studied, which did not need to use the initiator of a silyl ketene acetal (SKA) as the starting polymerization component. $B(C_6F_5)_3$ catalyzed the *in situ* 1,4-hydrosilylation of *n*BA by R_3SiH to generate the corresponding SKA prior to the polymerization of *n*BA, which was confirmed by the 1H NMR measurement of the model reaction. The formed SKA performed as the initiator for the $B(C_6F_5)_3$ -catalyzed GTP of *n*BA leading to well-defined polymers with targeted molar masses and low dispersities.