

Characteristics and Mechanism of Vinyl Ether Cationic Polymerization in Aqueous Media Initiated by Alcohol/ $B(C_6F_5)_3/Et_2O$

Jinghan Zhang^{1,3}, Yibo Wu^{2,3*}, Kaixuan Chen², Min Zhang^{2,3}, Liangfa Gong², Dan Yang^{2,3}, Shuxin Li^{2,3}, Wenli Guo^{1,3*}

^aCollege of Material Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, China.

^bDepartment of Materials Science and Engineering, Beijing Institute of Petrochemical Technology, Beijing, 102617, China.

^cBeijing Key Lab of Special Elastomeric Composite Materials, Beijing, 102617, China.

*Corresponding author: Yibo Wu, Beijing Institute of Petrochemical Technology, Beijing, 102617, China, E-mail: wuyibo@bipt.edu.cn

Wenli Guo, Beijing University of Chemical Technology, Beijing 100029, China, E-mail: gwenli@bjzx.gov.cn

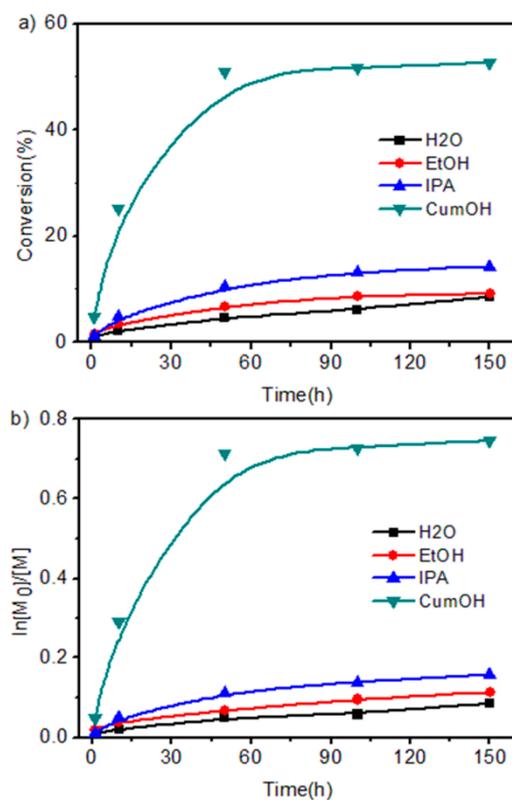


Figure S1. Suspension polymerization of styrene at 20 °C: (a) conversion vs time; (b) $\ln[M_0]/[M]$ vs time. $[St] = 1.75 \text{ M}$; $[B(C_6F_5)_3] = 0.05 \text{ M}$.

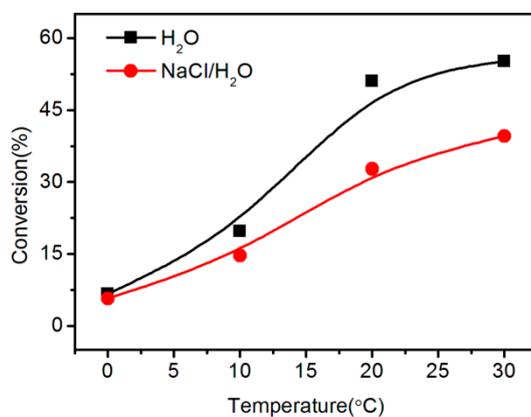


Figure S2. Styrene conversion at different polymerization temperatures initiated by CumOH/ $B(C_6F_5)_3$ in aqueous suspension for 50 h. $[St] = 1.75 \text{ M}$; $[CumOH] = [B(C_6F_5)_3] = 0.05 \text{ M}$; NaCl: 1 g.

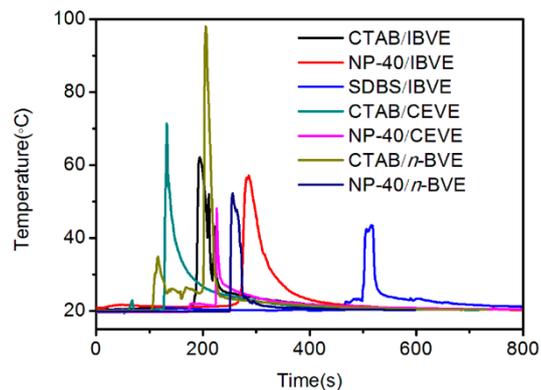


Figure S3. Temperature during cationic polymerizations initiated by CumOH/ $B(C_6F_5)_3$ in aqueous emulsion at 20 °C. [IBVE] = 1.6M; [CEVE] = 2.0 M; [n-BVE] = 1.6 M; [CumOH] = [B(C₆F₅)₃] = 0.05 M; CTAB = 0.02 g; NP-40 = 0.02 g; SDBS = 0.02 g.