

Model for Properties Prediction of Isobutene Polymerization

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Isobutene polymer (polyisobutene, PIB) is super high value-added (S-HVA) product because the gap of price between product and naphtha (which is raw material of isobutene) is high and its use is expanding. (Lubricant, adhesive, additives, etc.) Therefore, some of the commercial plants already operate PIB producing facilities. However, it is hard to design process and predict properties of PIB because the complex mechanism of the carbocation is various and previous research of kinetics for catalysts, which are well used nowadays (for example, aluminum trichloride and boron trifluoride complexes) are rare. Especially it is essential to control exo-substituted end group for special product which has high reactive properties. On the basis of this research, it shows the laboratory and pilot scale experiment for establishing the kinetics of PIB polymerization by modeling using method of moments and contributes simulation for polymer properties prediction and process design.