



Showcasing research from Professor Ishizone's laboratory, School of Materials and Chemical Technology, Institute of Science Tokyo, Tokyo, Japan.

One-pot synthesis of sequence-controlled macromonomers *via* living anionic addition reaction and subsequent acyclic diene metathesis polymerization

In this study, we achieved the one-pot synthesis of divinyl-functionalized sequence-controlled BAAB-type macromonomers by the sequential reaction of 1,1-bis(4-*tert*-butyldimethylsilyloxyphenyl)ethylene (**A**), 1,1-diphenylethylene (**B**), and 5-bromo-1-pentene with potassium naphthalenide in tetrahydrofuran. During the successive reactions, five covalent bonds were quantitatively formed in the macromonomer framework. The defect-free macromonomer functionalized with 5-bromo-1-pentene was easily isolated, and underwent the acyclic diene metathesis polymerization with transition metal catalyst to yield the sequence-controlled polymer with well-defined BAABR-type repeating units composed of the DPE derivative tetramer.

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