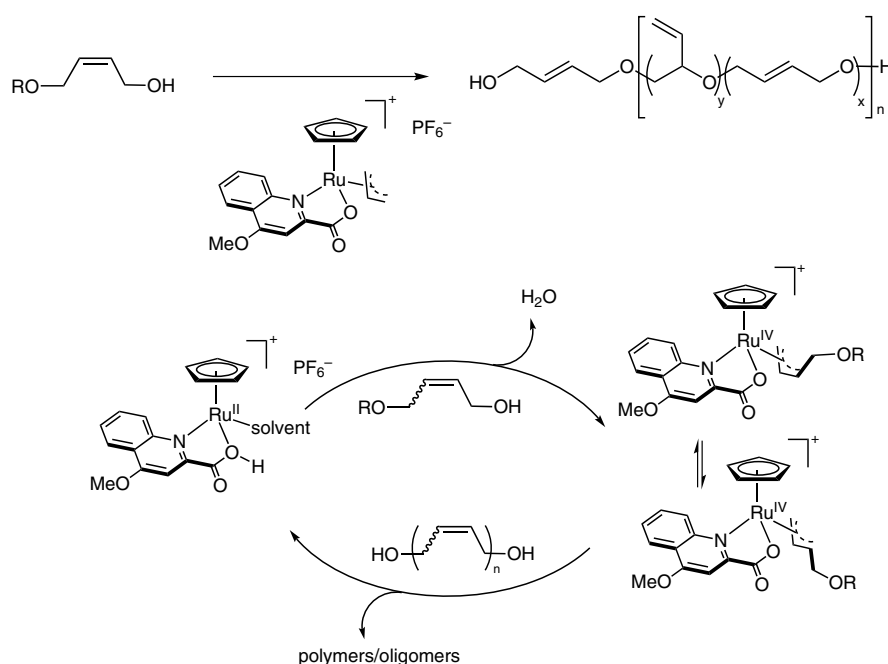


## Losing it at Both Ends: A Dehydrative Organometallic Polymerization



**Significance:** This method takes a readily available monomer and converts it into a polymer that is not accessible by traditional approaches to polyethers, such as cationic ring-opening polymerization. The novel dehydrative element that comes about from oxidative addition of the monomer to a  $\text{Ru}^{\text{II}}$  solvent complex to provide an allyl  $\text{Ru}^{\text{IV}}$  complex. This intermediate, when attacked by another monomer or macromolecular hydroxyl, produces linear or branched structures depending upon which end of the allyl reacts. The fact that the chains grow from both ends, classifies this method as a telechelic polymerization–oligomerization.

**Comment:** The alkenes in these materials and the ether structure provide additional opportunities for functionalization to create polar, functionalized, and/or cross-linked materials for use in biomedical applications. In addition, the authors have shown that the terminal hydroxy groups can be used in ring-opening polymerizations of cyclic esters to create ABA block copolymers.