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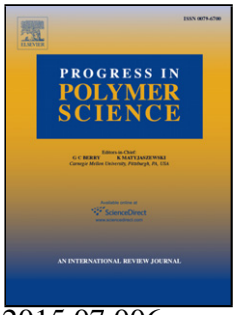


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# "Click" reactions in polysaccharide modification

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**Abstract**

Polysaccharide chemistry is enjoying accelerating development thanks to advances in synthetic techniques, biochemistry and solvents, which enable polysaccharide materials to be useful in a variety of demanding applications. Among the synthetic advances, click chemistry has reconfigured the realm of polysaccharide modification that previously was dominated by conventional synthetic approaches such as esterification and etherification. "Click" reactions provide mild, modular, and efficient modification pathways, and equally importantly allow us to synthesize derivatives with novel functionality, architecture, and properties, that are otherwise difficult to obtain via conventional methods. Herein, we review application in polysaccharide modification of six groups of click reactions; CuAAC (copper catalyzed alkyne/azide cycloaddition), metal-free [3+2] cycloaddition, Diels-Alder reaction, oxime click, thiol-Michael reaction, and thiol-ene reaction, as well as one click-like reaction that is the subject of our own research, olefin cross-metathesis.

Keywords

Click chemistry; polysaccharide; chemical modification; hydrogel; drug delivery; cross-linking; olefin metathesis