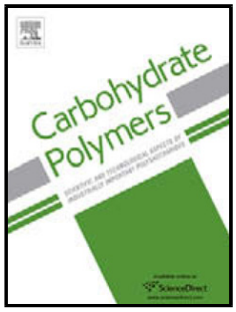

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Self-assembled cellulose materials for biomedicine: A review

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Highlights

- Modification of cellulose and its derivatives.
- Stimuli-responsive cellulose-based materials.
- Application of self-assembled cellulose-based materials.

Abstract: Cellulose-based materials have reached a growing interest for the improvement of biomedicine, due to their good biocompatibility, biodegradability, and low toxicity. Self-assembly is a spontaneous process by which organized structures with particular functions and properties could be obtained without additional complicated processing steps. This article describes the modifications, properties and applications of cellulose and its derivatives, which including a detailed review of representative types of solvents such as NMMO, DMAc/LiCl, some molten salt hydrates, some aqueous solutions of metal complexes, ionic liquids and NaOH-water system etc. The modifications were frequently performed by esterification, etherification, ATRP, RAFT, ROP and other novel methods.