

Tentative Outline
Special Issue for Current Organic Chemistry
Guest Editor(s): Chen Yu

**TITLE: The Medical Materials from Chitosan, Design,
Synthesis, Functionalization and Applications**

Aims & Scope:

Chitosan, a natural polymer obtained by alkaline deacetylation of chitin, is the only cationic polysaccharide in nature. Chitosan could be chemical modified by different ways, such as oligomerization, alkylation, acylation, quaternization, hydroxyalkylation, carboxyalkylation, thiolation, sulfation, phosphorylation, enzymatic modifications and graft copolymerization along with many assorted modifications. Then many derivatives of chitosan could be obtained. Chitosan and its derivatives show excellent biological qualities: they are biocompatible, biodegradable, mucoadhesive and non-toxic, and exhibit antimicrobial, antiviral gene transfection and immunoadjuvant properties. Chitosan and its derivatives have a variety of promising applications in medicine and pharmaceuticals and are presently considered as a novel carrier material in drug delivery systems, gene therapy, tissue engineering scaffold, wound healing, antibacterial, fat binder, hemostatic agent, hypocholesterolemic effect as indicated by the large number of studies published over the last few years. They can be easily processed in diverse forms, such as membranes, microparticles/nanoparticles, fibres, hydrogels or sponges, and allowing the design of a variety of medical and pharmacological devices adaptable to end purposes. In this special issue, I'll bring together a number of top-ranked international scientists to discuss the recent advances about the strategies for design, synthesis, functionalization and applications of chitosan and its derivatives for applications in medical materials. This special issue is aiming for a broad audience of readers in the field of material sciences, chemistry, medicine and pharmaceuticals.

Keywords: Chitosan, Derivative, Chemical modification, Design, Synthesis, Functionalization, Applications, Bioactivity, Chitooligosaccharide, Gene Transfer, Medicine, Pharmaceuticals, Tissue engineering, Membranes, Microparticles, Nanoparticles, Fibres, Hydrogels

Subtopics:

- Bioactivity of chitosan and its derivatives
- Chitooligosaccharide and its derivatives: preparation, properties and applications
- Chemical modification of chitosan as a gene transfer carrier
- The pharmaceutical carrier prepared from chitosan
- Tissue engineering scaffold derived from chitosan
- The novel medical hydrogel derived from chitosan
- The novel medical microparticles derived from chitosan
- The novel medical fibres derived from chitosan
- The novel medical membranes derived from chitosan
- The nano-biocomposites of chitosan and applications of them in medicine and pharmaceuticals

Approximate Schedule:

Manuscript submission deadline: September 30th 2016.

Peer-Review Due: October 31th 2016.

Revision Due: November 30th 2016.

Notification of Acceptance by the Guest Editor: December 15th 2016.

Final manuscript Due: December 30th 2016.