

## Tentative Outline

### Special Thematic Issue for the journal of *Pharmaceutical Nanotechnology (PNT)*

#### Title of the Thematic Issue

Guest Editors: *Dr. Jihong Sun*

#### • Scope of the Thematic Issue:

In recent years, with the deep research of nano-drug carriers, the environmental responsive inorganic-organic composite nanoparticles have been widely applied in drug delivery systems. These intelligent nano-drug carriers possessed unique advantages. Nano-drug carriers not only effectively enhanced the solubility and chemical stability of hydrophobic drugs, but also with the various physiological environment (pH and temperature) could control drug release behavior to achieve the targeted drug delivery in the lesion site, thereby enhancing the efficacy and reducing its toxicity for normal tissue. As an excellent nano-drug carrier with well biocompatibility and low toxicity, high surface areas and large pore volume, mesoporous silica nanoparticles (MSNs) can be carried out to effectively improve drug loading capacity through physical or chemical modification and thereafter to form mesoporous nanocomposites with environmental sensitivity.

Based on current research backgrounds, in this special thesis, MSNs core as “storage” achieved the high drug loading capability, and the pH- and temperature- dual stimuli responsive copolymer shell as “valve”, the core-shell structured nanocomposites (P@MSNs) were evaluated, and the controlled drug delivery were explored with pH- and temperature- dual stimuli responsive behaviors. In addition, the influence of composition and content of shell and the particle size of core on the properties of drug loading and release has been demonstrated.

**Keywords:** 6 to 8 keywords should be provided.

Drug delivery; porous nanoparticles; core-shell structure; stimuli responsive copolymer; controlled drug release; surface modification.

#### Sub-topics:

The sub-topics to be covered within the issue should be provided:

- Preparation of dual pH/temperature responsive mesoporous silica-based composite nanoparticles.
- Regulation/fractal characteristics of coated-polymeric shell in pH/temperature environmental sensitive composite nanoparticles.
- Influences of copolymer shell thickness and MSN core size on pH/temperature environmental sensitivities and controlled release properties.

#### Tentative titles of the articles and list of contributors:

Tentative titles of the articles and list of contributors with their names, designations, addresses and email addresses should be provided.

1. Tentative titles of the articles: **Fluorescent trace performance for drug delivery from pH-responsive mesopores P@BMMs with core-shell feature**

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2. Tentative titles of the articles: **Shell thickness of surface-coated copolymer of core-shell structured P@BMMs and its effects on the ibuprofen delivery via SAXS characterization**

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3. Tentative titles of the articles: **Uniform dispersion of amine-modified naphthalene anhydride into poly (acrylic acid) network and grafting onto the mesoporous SiO<sub>2</sub> for pHresponsive drug delivery with fluorescence**

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4. Tentative titles of the articles: Thermal decomposition behaviors of loaded-ibuprofen using bimodal mesoporous silicas as a carrier

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5. Tentative titles of the articles: **Fractal evolution of surface-coated copolymer during ibuprofen delivery using core-shell structured P@BMMs as a carrier**

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#### **Schedule:**

✧ Thematic issue submission deadline:

**October 1, 2020.**

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