

**Guest Editor(s):**

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**Hot Topic Title:**

Encapsulated catalysts: recent advances in the utility of confinement effect for designing enzyme-mimic catalysts

**Aims & Scope:**

Immobilization of homogenous catalysts on inorganic or organic supports makes it possible to separate homogenous catalysts easier. Besides immobilization makes it possible to protect and/or reuse catalysts.

Classic supports were materials with high surface area used mostly for turning homogeneous catalysts to heterogeneous ones by immobilizing them on their surfaces via various interactions with slight or undefined roles in altering reactivity of catalyst (sometimes support provided more catalytic sites and increased catalytic performance of catalyst and sometimes reduced catalysts efficiency by covering active sites.)

Recently, combination of concept of encapsulation and catalyst support led to new generation of supported catalysts in which catalyst is encapsulated within cavities of support. In this way, not only support plays its classic role and protects catalyst and improves its separation and reusability but also it participates in catalysis via encapsulation of catalyst within its micro cavity and results in better reactivity and selectivity of catalyst.

In this regard, encapsulated catalysts can pave the way for developing of enzyme mimic catalysts.

In the case of nanometric catalysts such as metallic nanoparticles, control of size and morphology of catalyst via encapsulation guarantees its performance and prevents from catalyst deactivation.

To date various kinds of materials including organic, inorganic and biological ones have been used for catalyst encapsulation. Besides, many traditional supports have been manipulated by

functionalization in such a way that promotes encapsulation of catalyst effectively and enhances its performance.

This thematic issue contains 7 reviews, covered by well-experienced teams. As the result, this proposed thematic issue contains the reviews of emerging and cutting edge researches in the field of encapsulation of the catalysts in the porous compounds and hopefully attracts substantial attentions and stirs up the interest of readers in the related research community.

**Subtopics:**

- Encapsulated magnetic catalysts
- Encapsulated catalysts in MOFs
- Encapsulated porphyrins
- Encapsulated gold nanoparticles
- Encapsulated catalysts in porous silica
- Encapsulated bi-metallic catalysts
- Encapsulated catalysts for synthesis of chemicals

**Approximate Schedule:**

Manuscript Submission Deadline: March 2018

Peer Review Due: June, 2018

Revision Due: August, 2018

Notification of Acceptance by the Guest Editor: September, 2018

Final Manuscript Due: December, 2018