Special Issue

Process Design and Functional Mechanisms of Nanostructured Drug Delivery Systems

Message from the Guest Editors

This Special Issue aims to provide a focused engineering perspective on nanostructured drug delivery systems, emphasizing mechanistic modeling, process design, system optimization and scalable manufacturing approaches. Contributions that integrate materials development with process systems engineering principles are particularly encouraged. Suggested topics include, but are not limited to, the following:

- Transport phenomena in nanostructured drug carriers
- Modeling and simulation of drug-release kinetics
- Process design and scale-up of nanoparticle production
- Microfluidic and continuous manufacturing of liposomes and nanoparticles
- Quality-by-design and process control strategies
- Stability and storage modeling of nanosystems
- Mechanistic modeling of nanocarrier–cell interactions
- Techno-economic analysis of nanosystem manufacturing
- Regulatory-oriented process validation approaches

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