



Biopolymers and Nano-Objects Applications in Bioengineering

Guest Editor:

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Message from the Guest Editor

Biopolymers and engineered nano-objects (nanoparticles, nanoplates and nanofibers) can have applications within several areas of research and development, including, food engineering, biology and medicine. Nano-scale structures provide a series of advantages, including tunable physical properties and surface chemistry that can be modified for targeted applications. Additionally, biopolymers and nano-objects are important materials for additive manufacturing (3D printing, bioprinting) and biomedicine. This includes the design of tailored medical devices, in vitro 3D substrates for tissue engineering and regenerative medicine, as well as tissue models as drug-testing platforms. Such applications may also be aided by machine learning and artificial intelligence approaches in a bioengineering perspective and to enable patient-specific healthcare services. However, the synthesis and modification of nano-structures require manipulation at the nano-scale. This may imply a radical modification of the polymers' physical and chemical properties, and may have significant biological effects.





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