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Application of Chitosan and/or Chitin Nanofibrils in Medical Treatment

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Message from the Guest Editor

Dear Colleagues,

Due to recent advances in biology and medicine, the problems of creating materials that can replace human or animal organs were brought to the fore. A matrix for tissue engineering constructions should provide adhesion, proliferation, and differentiation of cells, be biocompatible and non-toxic, and possess a certain mechanical strength and elasticity parameters that are necessary for manipulations with these materials in liquid media. Chitosan is the most promising polymer for tissue engineering applications since it possesses the above properties. The use of biocompatible organic nanoparticles as chitin nanofibrils is particularly important for regulating properties of chitosan matrices. Different methods like wet spinning method for producing composite fibers; electrospinning for producing nanofibers cloth; lyophilization of chitosan solutions and their mixtures with nanoparticles to form porous three-dimensional matrices; and, finally, 3D bioprinting. The materials thus developed to form fibers, films, tubular samples, and sponges can be used as surgical suture threads, effective wound dressing, and others.

Dr. Vladimir Eugenievich Yudin
Guest Editor



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Special Issue



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Message from the Editor-in-Chief

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