

Multiple possibilities of nanoparticulate biomaterials

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Biomaterials have played a central role in human society since the onset of civilization, including security and defense (SD) as a fundamental part of their deployments. Materials such as wood, wool, or cotton, to mention just a few, have been and still are, part of our life styles all over the world. Hence, the incorporation of the nanoscale into materials science could not have taken place without a special attention to biomaterials in the form of nanoparticles, the nanoparticulate biomaterials. Proteins, nucleic acids, sugars, lipids, and other natural products are in the center of the development of nanobiotechnology. Natural nanoparticles, like viruses for instance, are also significant players in the field. Nanomedicine and agri-food, which are life sciences-related applications, are perhaps the most immediate and obvious ones, but SD is not out of nanobiotech. In this presentation an overview of some of the most promising SD nanobiotechnological developments will be considered. These include among others, long-term data storage, energy-generating nanodevices, and optical applications at the nanoscale level. Other possibilities will also be mentioned.

References

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