Bio-Inspired Materials and Devices for Chemical and Biological Defense

By James J Valdes

CreateSpace Independent Publishing Platform. Paperback. Book Condition: New. This item is printed on demand. Paperback. 34 pages. Dimensions: 11.0in. x 8.5in. x 0.1in.Living systems are capable of manufacturing processes, molecular recognition and other complex functions which cannot be replicated by synthetic chemistry or other industrial technologies. Cells routinely manufacture monodisperse nanoscale structures and assemble molecular machines, carry out biochemical reactions and production processes of great complexity, and interact with the environment in an adaptive and emergent manner. Biotic (i. e. , living) system s can be labile and, by their nature, difficult to precisely control. The ability to elucidate key metabolic pathways and to replicate their functional properties in a synthetic (i. e. , abiotic) format will ultimately permit the design of completely artificial systems with abilities similar to those of a biotic system but with the advantages of precise process control and enhanced ruggedness. This will have profound implications for the many and varied missions of the Department of Defense (DOD) which include, but are not limited to, small-scale power and energy, lightweight flexible armor, on-demand manufacture of high-value products such as pharmaceuticals, low observable materials andthe subject of this paperchemical and biological defense (CBD). This item ships from...

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