Nanotechnology for Chemical and Biological Defense by Margaret Kosal, Springer, 2010, ISBN-10: 1441900616, ISBN-13: 978-1441900616

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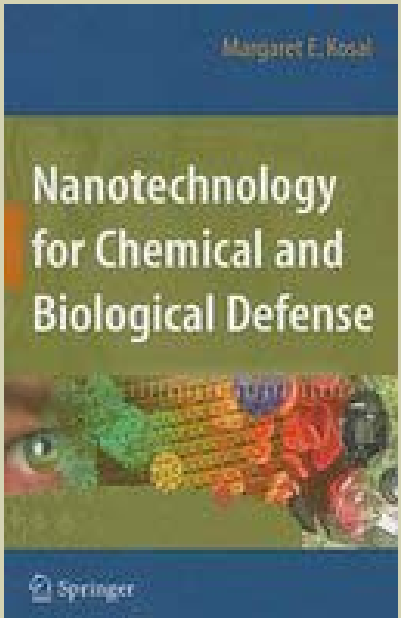
Summary

The book titled "Nanotechnology for Chemical and Biological Defense" by Margaret E. Kosal offers many insights into various transformational breakthroughs in regard to chemical and biological countermeasures developed with the help of nanoscience and nanotechnology.



Nanotechnology is rapidly developing as a highly multidisciplinary discipline. It finds considerable interdisciplinary representation particularly with electronics, material science, sensor technology and medicine. The book titled "Nanotechnology for Chemical and Biological Defense" by Margaret E. Kosal offers many insights into various transformational breakthroughs regarding the chemical and biological countermeasures developed with the help of nanoscience and nanotechnology.

This 2010 Springer publication which links technology with the strategic thought is a well researched work and addresses various issues like detection, decontamination, protection and medical defence at the backdrop of using nanotechnology for the purposes for chemical and biological defence.

This 150 page document has got six main chapters. The first two chapters are more thematic in nature while the third and fourth chapters discuss actual technologies. Last two chapters are more prescriptive in nature and offer views on strategic research priorities, future challenges and emphasis the need for international collaboration in this area.

The author argues that in current era where the nature of warfare is rapidly changing, it is important for the defence leadership to take the note of revolution in technology taking place at the nano scale. Before getting into the details in regard to the usage of this technology for defence against chemical and biological weapons, the author highlights the relationship between science and national security and underlines that it is important to invest into new technologies from defence point of view even though at times the returns are not guaranteed. The second chapter attempts to address the potential for nanotechnology for defence against chemical

and biological weapons. For this purpose scenario building exercise has been used to know about the utility of this technology for the future. Under a special workshop, four scenarios for 2030 were developed which are discussed in the book.

Various current and futuristic technologies for the detection and diagnostics of the chemical and biological agents are discussed. Various mechanisms like pint detection and remote detection are found discussed without using much of a technical jargon. The most interesting aspect of this book is that all future technologies are being discussed at the backdrop of four scenarios' developed for the 2030 timeline. This approach allows the author to think in a structured fashion for development of a technology roadmap for the future carting for both best and worst-case possibilities.

Specific strategic research priorities have been identified to achieve effective countermeasures by 2030. The book also emphasises that there is a need to engage at the international level in regard to research and development in the field of nanotechnology. Overall this is an interesting read on a technical subject. The author has succeeded in making the complicated subject lucid and novelty of developing a book based on simulation exercise and scenario building method puts it in a must read category.