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"The space sector and the field of nanotechnology are fascinating and each of them independently offers innovation opportunities. This book presents examples of the application of nanotechnology in the space sector, which has actually multiplied the effects of the challenges dictated by peculiar space environments and operations. Although it introduces only the first few steps in this direction, the broad spectrum of considered disciplines and products, from power and propulsion to optoelectronics, from thermal ablative materials to additive manufactured nanocomposites and new printable materials, from antibacterial coatings to MEMS/nano- and biodevices, showcase the potentials of this new sector very well and may even suggest to the readers further brilliant ideas to be applied in their specific situations. The book is recommended not only for students or professionals interested in the space sector but also to those looking for business spin-offs from the space to day-by-day life; thanks to the comprehensive picture on the space economy market linked to nanotechnology, presented in the last chapter of the book."

Prof. Dr. Eng. Piero Messidoro
Politecnico di Torino, Turin, Italy
Former CTO of Thales Alenia Space Italy, and Deputy CTO VP for R&D, Technology and Product Policy of Thales Alenia Space

"Written by internationally known experts, this book summarizes the state-of-the-art research developments for using nanotechnology in space. It covers a wide range of nanomaterials (from carbon nanotubes and semiconductor quantum dots to polymer composites and printable ceramics) and functional applications (from solar cells and lithium-ion batteries to antibacterial surfaces). Each chapter is clearly written and will be interesting for a wide audience of researchers, engineers, and students."

Prof. E. A. Katz
Ben-Gurion University of the Negev, Israel

This book presents selected topics on nanotechnological applications in the strategic sector of space. It showcases some current activities and multidisciplinary approaches that have given an unprecedented control of matter at the nanoscale and will enable to withstand the unique space environment. It focuses on the outstanding topic of dual-use nanotechnologies, illustrating the mutual benefits of key enabling materials that can be used successfully both on earth and in space. It highlights the importance of the space as a strategic sector in the global economy, with ever-increasing related businesses worldwide. In this light, it dedicates a chapter to the analysis of current and future markets for space-related nanotechnological products and applications.

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