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Nota di contenuto	Introduction -- Background Knowledge -- Carbon Dots -- Carbon-based Quantum Dots -- Technological Applications -- Further Opportunities.
Sommario/riassunto	Written by the founder of the field of carbon “quantum” dots (carbon dots) and related technology, this book outlines the principles of carbon dots and presents strong evidence for that small carbon nanoparticles and by extension carbon dots represent the nanoscale carbon allotrope at zero-dimension. Historical accounts of the inception and evolution of the carbon dots field are provided. Experimental approaches and techniques for the dot synthesis and some related major issues are discussed in detail. The photoexcited state properties, especially the bright and colorful photoluminescence emissions, and photoinduced redox characteristics of carbon dots are presented, and so are their advantages over semiconductor quantum dots as well as fullerenes. Carbon dots are also compared with “graphene quantum dots”, for which a unified mechanistic understanding is proposed. Finally, a broad range of applications of

carbon dots and their derived hybrid nanostructures in biomedical, renewable energy, food and environmental safety, and other technologies are highlighted. The book concludes with a discussion on the excellent potential and opportunities for further research and development.