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Sommario/riassunto

Particle accelerators are a major invention of the 20th century. In the last eight decades,they have evolved enormously and have fundamentally changed the way we live, think and work. Accelerators are the most powerful microscopes for viewing the tiniest inner structure of cells, genes, molecules, atoms and their constituents such as protons, neutrons, electrons, neutrinos and quarks. This opens up a whole new world for materials science, chemistry and molecular biology. Accelerators with megawatt beam power may ultimately solve a critical problem faced by our society, namely, the treatment of