

Nanotechnology: going small for a giant leap in cancer diagnostics and therapeutics

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ABSTRACT

“There is Plenty of Room at the Bottom” - not just “There is Room at the Bottom.” What I have demonstrated is that there is room - that you can decrease the size of things in a practical way. I now want to show that there is plenty of room.

Richard Feynman, December 29, 1959

More than 30 years ago Richard Feynman pointed out that physicists knew no limits to prevent us from doing engineering at the level of atoms. Until recently, though, while the lack of physical limits was accepted as commonplace, molecular engineering was thought of as impractical, unnecessary, or requiring breakthroughs in knowledge and technique that placed it somewhere in the distant future. Many visionaries intimately familiar with the development of silicon technology still forecast it would take between 20 and 50 years before molecular engineering became a reality. This is well beyond the planning horizon of most companies. But recently, everything has begun to change. After the industrial revolution and the “computer age”, are we really facing a new *era*?

Key words: nanotechnology, nanomedicine, drug delivery, nanoparticles

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