



The Nanotechnology revolution: USA initiatives

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The current interest in Nanotechnology is not a simple fashion but the result of a profound revolution that has been incubating for years as a result of continuous advances in instrumentation and computer power. The advent on many new and sophisticated techniques to manipulate matter at the atomic and molecular scale has opened the way for the development of new science and new technology where the scale of the objects is measured in billionths of a meter (nanometer) and where atoms and molecules are manipulated at will to develop new structures with novel properties.

These properties are not a simple extrapolation of the known bulk properties, but instead arise from the quantum nature of electrons and atoms confined in small volumes. Recognizing this opportunity for a new industrial revolution, the US department of Energy has created 5 nanocenters.

I will describe the structure and goals of these nanocenters, with particular emphasis in the Berkeley one, the Molecular Foundry, open to collaborations with scientists and institutions worldwide.