

# [Nanotechnology](https://assignbuster.com/nanotechnology-essay-samples-2/)

Na chnology: Top Down and Bottom Up To Na chnology of Na chnology: Top Down and Bottom Up To Nanotechnology As per the advancement in the field of nanotechnology, it has been ensured that couple of approaches can be used to create the nano designs of the machines. These approaches are mainly referred to as Top down and Bottom up approach in nanotechnology. With the implication of bottom up approach, it is possible to design a microchip with its tiniest size manufacture. It is possible because the smallest atoms are placed in such a matter that the design goes to the upper version of approach. On the other hand, the top-down approach of manufacture in nanotechnology allows creation of chip by taking away the mass material which is used for its design. This approach will not consider the usage of atomic structuring but it rather takes away the design of externality. Currently the employment and advancement has taken it toll in the top down method. It can be said that the other approach namely bottom up approach is still in its theoretical phase. There is much need of advancement in the applied approach of bottom-up. It is due to their reason that the nanotechnologists have made us of self-assembly as a better way to fabricate and manufacture different devices. The technological progress however can be considered as less towards the bottom up approach of manufacture (Bhushan 2007). There is a Plenty of Room at the Bottom- Article Summary: The lecture by Richard Feynman turned out be the base for one of the most critical approaches to the nanotechnology. As per the lecture, it was possible to manipulate materials. This was possible due to the observation of matter with the help of atomic scale. The lecture was directed towards the exploration possibility of creating computers much smaller in sizes. Most importantly, Feynman focused on the creation of telescopes which were quiet smaller in size in comparison with the other electron microscopes. He also stressed on the fact that humans must be able to create machines which can perform actions with the structuring of atom in a series the way humans want. The reference to the conception of atomic arrangement was given through the aid of machines like scanning probe microscopy, Millipede etc (Binns 2010). The lecture of Feynman also highlighted the fact that humans need machines which can perform with the atomic arrangement which will be further interpreted or manipulated with the help of mechanical formulization. One of the interesting aspects of his lecture was the creation of a small swallow-able robot (Feynman 1960). This was put in working schema by providing the user with one-quarter-scale manipulator ands. On further discussion, it also came to understanding though the Feynman’s lecture that the analogy of pantograph can help in scaling down the items. The fact remains that as the machine shrunk in terms of design so the ability changes as well which needs address by designers because the force of the machine to perform operations changes with the energy (Steed and Atwood 2009). Intrinsic top-down unmanufacturability- Article Summary: Kelly (2011) in his article considered the analogy of fabrication with regards to manufacture. The changes that can be brought to a machine can be in terms of lithography, repositioning of the structure etc. In the article, the author has clearly notified that with the usage of top-down approach, it is impossible to create fabrication of a 3nm design. It is because the same sense of working schema cannot be achieved in case the design is fabricated. In other words, the structure cannot be fully acting on its part as initial design is probable to work (Kelly 2011). The change or in simpler words the expression as noted in the article states that the change manufacturability to intrinsic unmanufacurability cannot be taken place at nearer 7 nm design. The path of nanotechnology continues to undertake experiment to fabricate and manufacture machines by setting up atoms differently (Sepeur 2008). The design of 6 nm has been the maximum fabrication that has been brought to manufacture using nanotechnology. Overall, it should be noted that the author has addressed the designing approaches to he devices with usage of pitch array. The dots are fairly usable with layers as the quantum dot structures contribute to the design. In case the fabrication does not comply with the operations of the machines that it is believed that the tunneling and the pillars of the machine can become weak in adjustment. List of References Bhushan, B., 2007. 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