

## Nanobiotechnology: Biochips connecting to the DNA computers. A tool for biomedical application

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The DNA computers do everything right from the most basic arithmetic operation to detecting encrypted signals, hacked codes, crime detection at the forensics etc. And ofcourse does it a zillion times faster than the normal computers given that the error propability rates are ridiculously high. The DNA computer works almost the same as any electronic computer except that it follows a biological route. More than 10 trillion DNA molecules can fit into an area of around 1 cubic centimeter (0.06 cubic inches). With this small amount of DNA, a computer would be able to hold 10 terabytes of data, and perform 10 trillion calculations at a time. By adding more DNA, more calculations could be performed. The DNA logic gates rely on DNA code. These logic gates might be combined with DNA microchips to create a breakthrough in DNA computing. One great barrier that still stands is the error rates. When a normal computer that uses a signal integrated IC this DNA computer would obviously have great error rates (of possibly the propability of 5.5 or 6/10) as here we aren't dealing with completely manmade artificial electronics. We have our unpredictable neural system as DNA working invitro here. . Precisely instead of just using the biochips in DNA computer we can use both the integrated circuits and the biochips as well, that are connected on a seperate substrates but single platform, by transmission lines. Coming to the minute technical aspects of it, (the gene) DNA embedded on the chip, lets say the to it that the radio frequency is accurate), so that the problems that are in the height of necessity to us can be performed by the biochip, the other normal operations like programming or social networking by our IC. The PIT (here a periodic one) acts as a mediator between the biochip and the integrated circuit. This PIT is catogerised under CMOS (A BASIC CIRCUIT) used in whichever form can act as a mediator. . The same principle can be extended to the biomedical applications wherein The biochips would detect any mismatch or complications in our bio-samples to be detected( just the same principle applied in the biosensors, after this the connection is missed and would go with the signal IC where other programming is right royally done and the outputs are given out. The whole of this proposal is possible unequivocally only if the logic I/O signals are appropriate and the transmission lines work at the right time and ofcourse if the equipments are adequate. This would prove to be economically viable and highly efficient in less time. G.

### Biography

Krithika Shankaran is a third year bachelor's student pursuing a five year course on Industrial Biotechnology at SASTRA UNIVERSITY, one of most reputed institutes in India. She has planned to continue her career with a dual Phd on electronics and bio-nano technology. She would be writing her GRE TOEFL later this year. She is currently working on biosensors coupled with basic mechanisms of biochips in the research labs at SASTRA. Other than that her oratory skills are very good. She has a talent for music and tennis. Besides she also has a bachelor's degree in Hindi Literature.

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