APPLICATION OF NANOROBOTS IN HEALTH CARE

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Abstract- *NANO-ROBOTS is now becoming an emerging field that is going to bring a lot of changes in the current century. It is a one part of NANO-TECHNOLOGY. The part of nanos in medicine and human science is large. Ongoing developments in computation, molecular fabrication, motors and sensors will be able to manufacture nanorobots. The present work intended to be a platform for the design of nanorobots control and research. The simulation approach involves a multi-scale view of the scenario and combined. Fluid dynamics numerical simulation is used to construct the nanorobotic environment, and an additional simulation models nanorobot behaviour,sensing and control. here We discuss the most promising possibilities for nanorobotics applications in biomedical problems.*

I. INTRODUCTION

This paper to deal with many of the challenging problems in biomedical applications that describes a study for developing nanorobotics control design . The problem we consider here is mainly focused on nanomedicine, where the manipulations and biomedical interventions are automatically performed by nanorobots. While these nanorobots cannot be fabricated yet, simulation studies and theoritical defining design strategies, limitations and capabilities, will supply better comprehension of nano robots behavior and the nano world. NANOMEDICINE is the process of preventing disease , diagnosing, traumatic injury, and treating, of relieving pain, and of preserving and improving human health, using molecular knowledge and molecular tool of the human body. Most symptoms such as itching and fever have specific biochemical causes that can also be reduced, managed, and eliminated using the correct injected nanorobots. This paper mainly concentrated on applying NANO ROBOTS in detecting human physiology. In this paper we have two ideas:

II. MAKING NANO ROBOTS

The typical medical nanodevice will be a micron-scale robot assembled from nanoscale parts. These parts range in size from 1-100 nm (1 nm = 10^{-9} meter), and it is been fitted together to make a working machine measuring 0.5-3 microns (1 micron = 10^{-6} meter) in diameter. Due to the capillary passage requirement, Three microns is about the maximum size for blood borne medical nanorobots. Carbon will likely be the principal element compresing the bulk of medical nanorobots, probably in the form of diamond or diamonded/fullerene nano composites largely because of the tremendous strength and chemical inertness of diamond. Many other light elements such as hydrogen, sulfur, oxygen, nitrogen, fluorine, silicon, etc. will be used for special purposes in nanoscale gears and other components.

III. APPEARANCE OF NANO ROBOTS

It is impossible to say exactly how a generic nanorobot would look like. Nanorobots calculated to travel through the bloodstream to their target will approximately be 500-3000 nanometers (1 nanometer = 10-9 meter) in characteristic dimension. Non-blood borne tissue-traversing Nanorobots might be as large as 50-100 microns, and alimentary or bronchial-traveling nanorobots may be even larger still. Each species of medical Nanorobots will be designed to accomplish a specific task, and many sizes and shapes are possible.

In most of the cases, a human patient who is undergoing a nanomedical treatment is just going to look like anyone else who is sick. The typical nanomedical treatment will be having an injection that perhaps a few cubic centimeters of micron-sized nanorobots suspended in fluid like water/saline suspension. The typical therapeutic dose may include upto 1-10 trillion (1 trillion = 10^{12}) in individual nanorobots, although in some cases, treatment may only require a few million or a few billion individual devices to be injected. Each and every Nanorobot will be on the order of perhaps 0.5 micron up to perhaps 3 microns in diameter. (Exactly what the nanorobots are intended to do and The exact size depends on the design).

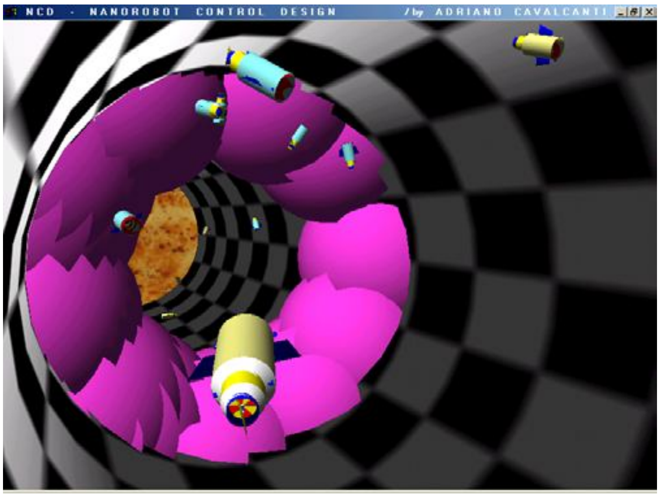

Figure 2: Vein inside view without the red blood cells. The nanorobots swim near-wall region.

IV. APPLICATION

By adding 1 litre of ventilons into our bloodstream, we could then hold our breath for nearly 4 hours if sitting quietly at the bottom of a swimming pool. Or if we were sprinting at top speed, we could run for at least 15 minutes before we had to take a breath! It is clear that very "simple" medical nano devices can have extremely useful abilities.Other more complex devices will have a broader range of capabilities. Some devices may have the ability to swim through the blood, or crawl through body tissue or along the walls of arteries. Others will have different colors, shapes, and surface textures, depending on the functions they perform. They will have different types of robotic manipulators, different sensor arrays and so forth. Each medical nanorobot will be designed to do a particular job extremely well, and will have a unique behavior and shape.

V. NANOSENSORS IN MOBILEPHONES

System demonstration:

⇒ Our mobile system has small pins attached to the mobile phones.

⇒ These pins help in taking samples of glucose.

⇒ From these samples the corpuscles are readed using the small specific nanorobots inside the mobile.

⇒ Nano-chromatrons separate the glucose molecules which cause diabetes.

The molecules reserved are read and compared with the other section and the approximation is made about the sugar level.

- These sugar levels are compared with compressed DB's and precautions are displayed.
- By having sound sensors it may be possible to calculate heartbeats & pulse rates there by calculating the BP level.

Nano robots used in our mobile phones

VII. CONCLUSION

Nanomedicine will destroy virtually all common diseases ,and all suffering and medical pain, and allow the extension of human capabilities especially our mental abilities.

A single nanocomputer CPU, also having the volume of just one tiny human cell, could compute at the rate of 10 teraflops (10^{13} floating-point operations per second), approximately equaling the computational output of the entire human brain. Nano computer produce only about 0.001 watt of waste heat.

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