NANOROBOTICS IN MEDICAL AND AGRICULTURAL FIELD

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ABSTRACT:- Nanorobots are nanodevices are used for the purpose of maintaining and protecting the human body against pathogens .Nanorobots are implemented by using several components such as sensors,actuators ,control,power ,communication and by interfacing cross special scales between organic and inorganic systems. the first useful applications of nanotechnology may be in nanimedicine for example ;biological machines could be used to identified and destroy cancer cells

INTRIDUCTION:-Nanorobotics are an emerging technology field creating machines or robots whose components are at or near the scale of a nanometer{$10-9$meters }nanorobotic is the nanotechnology engineering discipline of designing and building nanorobots with devices ranging insize from 0.1-10 micrometers and constructed of nanoscale.

Nanomechines are largely in the research and development phase example ;a sensor having a switch approximately 1.5nanometers across, able to count specific molecules in a chemical sample.

BIOCHIP: the combination of nanotechnology, photolithography and new biomaterials can be considered as a possible way required for medical application such as diagnosis and drug delivery.

MATERIALS AND METHODS

NANOROBOTICS IN SURGERY:-Surgical nanorobots are introduced into the human body through vascular systems and other cavities. Surgical nanorobots act as semi autonomous on sight surgeon inside the human body and are programmed or directed by a human surgeon. this programmed surgical nanorobots performs various functions like searching for pathogens, and then diagnosis and correction of lesions by nanomanipulation synchronized by an on board computer while conserving and contacting with the supervisory surgeon through coded ultrasounds signals.

DIAGNOSIS AND TESTING:-Medical nanorobots are used for the purpose of diagnosis, testing and monitoring of microorganisams,tissues and cells in the blood stream. this nanorobots are capable of noting down the record and reporting some vital signs such as temperature ,pressure and immunesystem"s parameter of different parts of human body.

GENETHERAPY:- Nanorobots are also applicable in treating genetic diseases by relating the molecular structures of DNA and proteins in the cell. The modifications and irregularities in the DNA and protein sequences are then corrected. The chromosomal replacement therapy is very efficient compared to the cell repaired .

CANCER DETECTION AND TREATMENT; -The important aspects to achieve the successful treatment is based on the improvement of efficient drug delivery to decrease the side effects from the chemottherpy.Nanorobots with embedded chemical biosensors are used for detecting for the tumor cells in early stages of cancer

NANOTECHNOLOGY RESEARCH ACTVITIES IN AGRICULTURAL SECTOR:-
The application of nonmaterial in agricultural aims in particular to reduce applications of plant protection products, minimize nutrient losses in fertilization and increases yields through optimize nutrient management.

COMMERCIAL APPLICATIONS OF NANOTECHNOLOGY IN AGRICULTURAL SECTOR:-
Nanotechnology devices and tools like nanocapsules,nanoparticles and even viral capsids are examples of uses for the detection and treatment of diseases, the enhancement of nutrients absorption by plants, the delivery of active ingredients to specific sites and water treatment processes.
Specific nanoproducts for the agricultural sector like soil enhances products that promote even water distribution, storage and water saving.

RESULT AND DISCUSSION:-
In the nano technology the nano sensors are used for monitoring the soil conditions and crop growth and the nano chips are for identity preservation and tracking. Nano technology applied to agriculture production could play fundamental role for this purpose. And research on agriculture applications is going on for largely a decade by now. Nano scale formulants (Ex: clay, silica, polymers, pigments, macromolecules) have been used and are ubiquitous in many daily house hold products.

CONCLUSION:

The wide variety of technologies and science discoveries produced by humanity had let to many future aspects. In feature there may be a large scale usage of nanorobotics in all fields especially in medical and agriculture field. Technology is a boon to us it is necessary to make use of it.

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