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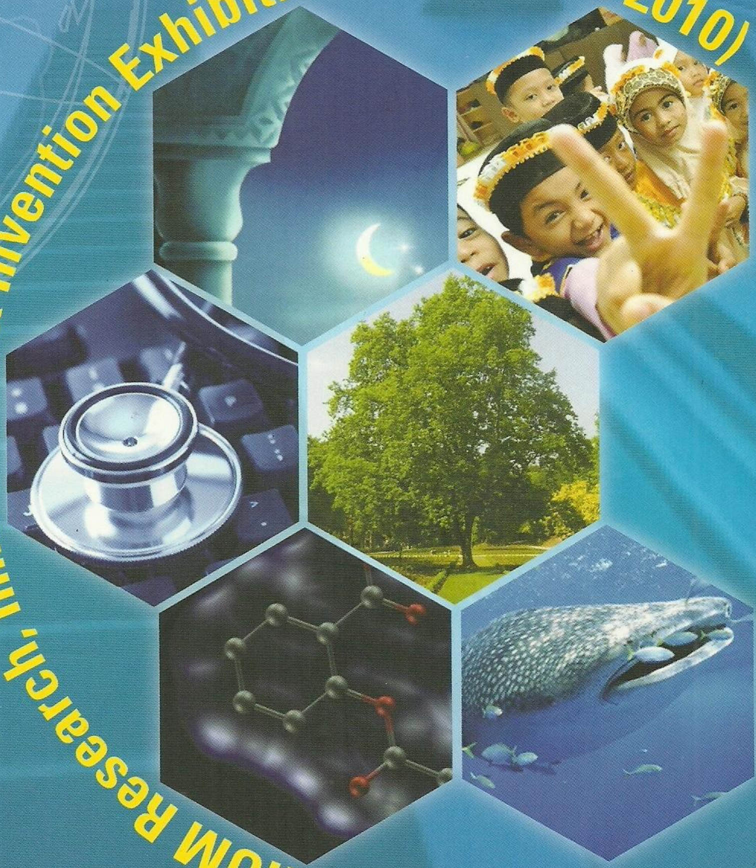

ENHANCING QUALITY RESEARCH & INNOVATION for SOCIETAL DEVELOPMENT

durations and analyzed for sedimentation time using UV-vis spectrophotometer. The most stable CNT-water suspension was obtained for 0.01 wt% CNT and 100 ppm CMC concentrations with 4 hours of sonication time. Effect of CNT and CMC concentrations and sonication times on the stability and sediment time of single walled and multi-walled CNTs are being investigated.

P-327 Differential Resistive Transducer for Power Harvesting for Implanted Devices

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This work is aimed at powering implanted electronic device with sensors meant for collection of biomedical signals. This is done through inductive coupling technique employed not only to transfer power (mW level) but also to make data available to the external world for monitoring purposes. It is primarily an analysis associated with transferring digital signal in order to power implanted electronics for signal acquisition. Hence, this work is aimed to provide both a power as well a signal link between the external world and the implanted electronic devices.

Simulation done using as an initial stage, showing inductive coupling, the primary (transmitter coil) of which is energized by a digital signal in order to reproduce it across the gap across the secondary coil (receiver coil) in the case of a 20 kHz AC signal. An air gap between transmitter coil and receiver coil is simulated through the use of resistor, and the AC voltage received is then rectified into a DC voltage for the implanted electronic circuit.

The overall efficiency of the system is investigated for varying gaps of the space between the transmitter and receiver coils. The focus in this work will be on analyzing the operating frequency, self resonance frequency, total power received on receiving coil. The transmitter-receiver system is investigated for frequency range to be in the Radio Frequency IDentification (RFID).

The current literature have got various approaches, for example, Martinez et al. [1] develop a passive sensor to measure the intraocular pressure (IOP) of eye balls using implantable passive sensors. Sarpheskar et al. in [2] demonstrated work on implanted ultra low power circuits inside human brain for paralysis prosthetics and strokes useful for diagnostic reasons. Gaddam in [3] centered his research on wireless power transfer from external circuit to implanted circuit and achieving the best efficiency for power transfer when the coils are kept at an optimum separation.

In conclusion we will show the feasibility of microwatt transfer power without having to face the trouble of wiring accessibility from external power supply, making it a contactless inductive system utilizing power circuit with high link efficiency. Future work will involves implementing data link transmission from implanted sensor back to the receiver for data archiving and monitoring purpose.

P-335 Linearization Circuit for Transducers for Nonlinear Responses

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Thermistors are nonlinear transducers, and have found wide application in temperature measurement and control in different fields, but they exhibit a strong nonlinearity of the characteristic, which is of an exponential type. This project investigates the possibility of creating a thermistor-based temperature sensor with frequency and analog outputs and a linearized characteristic on the basis of a 555 timer.

It is shown through simulations that the linearization of the characteristic can be achieved without connecting additional elements to the circuit but only through a choice of the parameters of the thermistor and of the frequency-determining circuit elements. The investigations conducted show a good match between the theoretically and experimentally obtained characteristics