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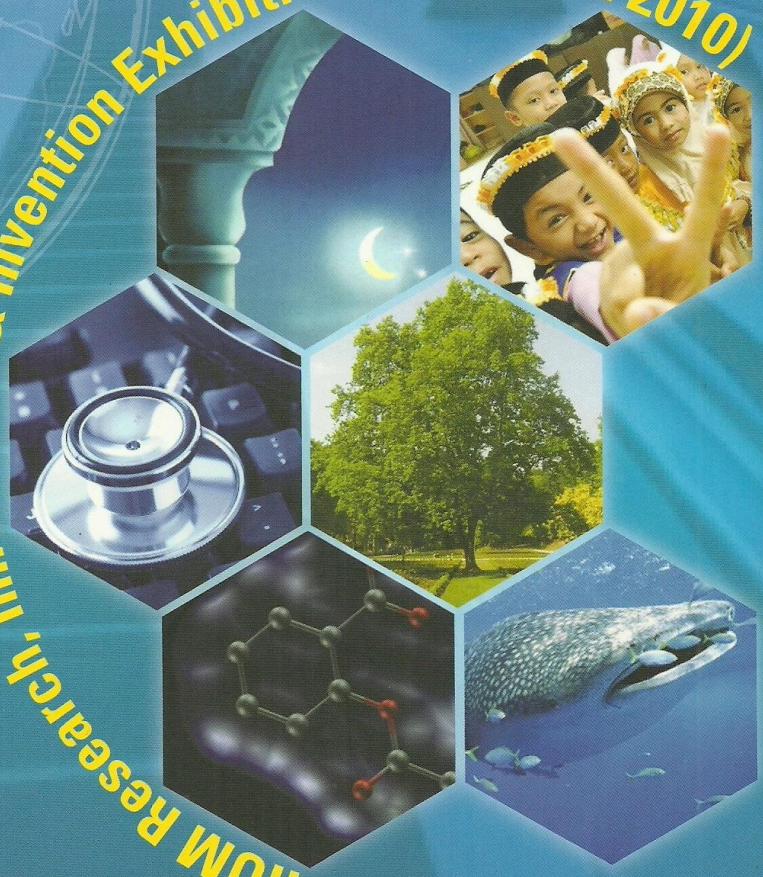

ENHANCING QUALITY RESEARCH & INNOVATION for SOCIETAL DEVELOPMENT

atmospheric (haze) attenuation and scintillation attenuation.

P-314 Solid Waste Generation Characteristics in Some Selected Local Authorities of Malaysia

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The large and increasing amounts of municipal waste (MW) generated each year in several industrialized countries have raised concerns about the economical viability and environmental acceptability of the current generation activities. The planning of an optimal regional waste management strategy requires a reliable tool for predicting the amount and the corresponding composition of MW that is likely to be produced. Further, to carry out integrated solid waste management, direct and indirect participation of local governmentâ€™s authority is essential. This paper focuses on the existing waste management characteristics of a selected local authorities in Malaysia, evaluate the situation and forecast for the future. As a case study, we have considered three local authorities in Selangor State, namely Selayang Municipal Council, Klang Municipal Council and Subang Jaya Municipal Council. This research discusses the concerns about environmental effects associated with solid waste as well as the escalating costs that solid waste consumes from the budget of a local authority.

P-322 Study of the Effects of EDM Parameters on Material Removal Rate, Electrode Wear Rate and Surface Roughness in the EDM of S-Star

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Die-Sinking EDM is one of the most versatile non-traditional methods of machining for producing parts of complex and intricate geometry as well as being able to machine hard and super-tough material. Nevertheless, EDM has a lot of independent variables to be controlled in order to get optimized machining conditions. This project presents a study on the effects of three electrodes (i.e. Copper, Chromium and Brass) on machining characteristics material removal rate (MRR), electrode wear rate (EWR) and surface roughness (SR) during the EDM of S-STAR. Results obtained from the investigation are reasonable compared to related work done by other researchers.

P-324 Stability Characteristics of Water-Carbon Nanotube (CNT) Dispersion using Carboxymethyl Cellulose (CMC) as Surfactant

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The study of nanofluids lately gained importance in scientific community, due to their enhanced thermal conductivit and heat transfer coefficient, which is expected to significantly improve the performance of heat transfer equipments. Nanofluids are dispersion of nanosized particles in a base fluid such as water,ethylene glycol and oil. Especially, carbon-nanotube(CNT)-water dispersion find potential applications as heat transfer fluid in automobile and aircraft engines, and also in nuclear reactors which involve high heat throughput, and therefore need for efficient heat removal. The main focus of current research on nanofluids has been to obtain a stable dispersion of CNT in water since the CNT has tendency to agglomerate and settlle down. Recent researchers have tried various techniques to obtain stable dispersion such as functionalization, sonication and use of surfactants. Current literature show that different surfactant such as gum arabic, sodium dodecyl sulphate (SDS), Triton-X etc. have been used to obtain stable aqueous CNT dispersion . In the present study, we have used carboxy methyl cellulose (CMC) as the dispersion agent together with sonication to obtain stable aqueous CNT dispersion. Aqueous CNT suspension with different CNT and CMC concentrations were sonicated for varying

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