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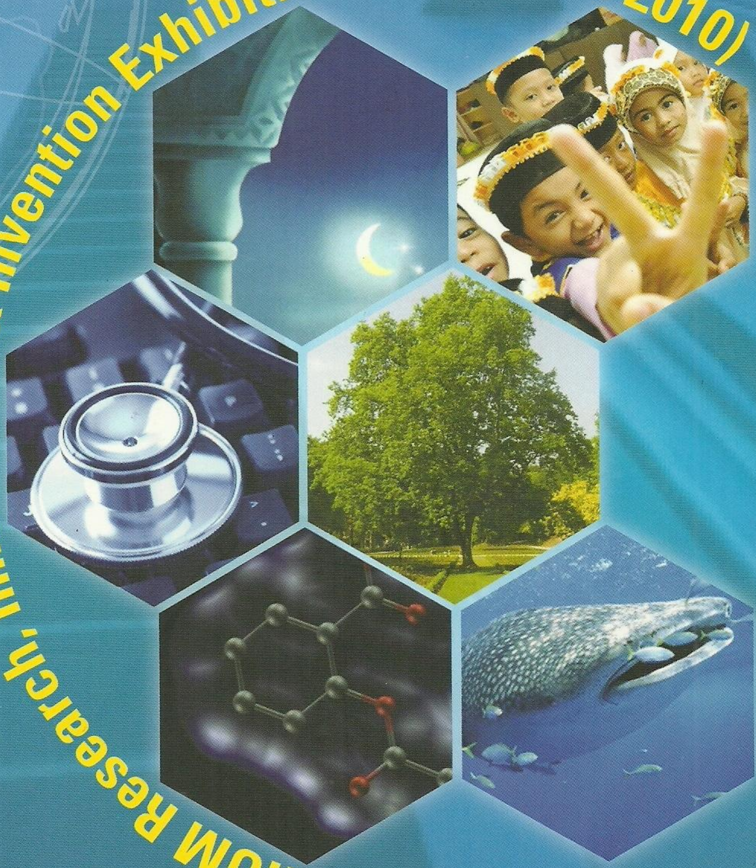

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measurement. In Electrical Cell-substrate Impedance Sensing (ECIS) technique, the most notable signal is the peak magnitude of the normalized impedance change. The peak magnitude is related to the effective cell blockage which depends on the cell coverage, cell-substrate contacts and spaces. For biosensing using ECIS, the first step is to characterize the sensor assemblies in appropriate electrolyte solutions at their various stages of construction as well as before and after use in the sensor application, probing the changes which may have occurred. The second is to use the recorded impedance spectra, or a part of them (possibly at only one or two frequencies) to quantitatively measure analytical concentrations of desired electroactive species. In this paper, the strategies and methodologies by which ECIS can be used for characterization and for quantitative measurements in electrochemical sensors and biosensors will be presented and discussed, together with examples to illustrate the advantages and limitations. Then we use the method that involves the use of microelectrode-embedded microwells seeded with DF-1 or animal cell-lines, allowing for continuous measurements of impedance by an Impedance analyzer. Impedance measurements over a wide range of frequency will be performed on these microwells to study the DF-1 cell behavior. We will report the experimental observation of electrode impedance changes caused by cell deposition and growth which affects cell attachments.

P-33 Simulation of a Surface-Transverse Wave (STW) Biosensor for DF-1 Cells

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A 250 MHz Surface-Transverse Wave (STW) resonator is employed as a sensor element for the detection of DF-1 cells. STW belongs to the shear-horizontal acoustic plate modes (SH-APM) wavesâ€™ family where it has attracted plenty considerable interest. STWs are horizontally polarized shear waves which are generated and detected by the interdigital transducers (IDTs) similar to surface-acoustic wave

(SAW) resonators [1]. Detection of chemical and biological agents in aqueous solutions is a difficult problem, especially when the detection technique has to be sensitive, power-efficient and very handy. Acoustic plate mode is a mode of vibration where particle motion is parallel to the surface. This makes it possible to produce a sensitive sensor capable of operating in fluids [2]. This paper presents the biosensor prototype utilizing STW resonator.

P-35 iLukBa ver 1.1: Indoor User Location system with Speech Recognition for Mobile Users

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iLukBa is a prototype to provide a solution for determining indoor symbolic (hierarchical) user location for mobile user. It works with small mobile devices such as PDAs and it is combined with the speech recognition systems on how the environment response delivered to the location of the user. It has been developed using an advanced and robust algorithm in determining user location for indoor environment which offers location precision accuracy in small room scale.

iLukBa capable to handle the unpredictability of IEEE 802.11 (Wifi) signals across perturbation in space, and in time (diurnally) by using Wifi's signal strenght.iLukBa also provides direct service delivery when a user on the move from on location to another, the environment response in delevering service is based on the speed of user.Dynamic buffer is created, the buffer size depends on the speed of the user. The faster a user moves, the smaller the buffer in delevering the speech.iLukBa is a proof of concept of a low cost smart environment capability , i.e. indoor user location can be determined and the environment response can be delivered using speech recognition based on indoor user location.

In the long -term, i-LukBa intends to change computing paradigm: provision service directly to where the user is located. The current paradigm is delivering service without knowing the user location and the new paradigm is delivering the service directly to current user location. The service can be in the form of sound/speech, image/graphics (such as jpg or video) or text based