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DOTTORATO DI RICERCA IN BIOINGEGNERIA
E BIOINFORMATICA

STMicroelectronics

DIPARTIMENTO DI INFORMATICA E SISTEMISTICA

AVVISO DI SEMINARIO

Current Developments in minimally and non invasive Glucose Monitoring Techniques

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Abstract - Glucose oxidase based needle sensors for continuous in vivo glucose monitoring (CGM) are becoming more widely available. At the same time numerous other techniques including non invasive approaches are under development. In particular the needle sensors have been used in conjunction with insulin pumps to investigate their application in semi-closed or even closed loop settings. Still, a bottleneck seems to be reliability and precision of these measurement systems to really close the loop in a way so a faultless operation could be achieved in every day life.
It was recently suggested that several CGM sensors operated simultaneously could represent a possible step towards addressing the various issues identified by numerous groups over the last few years. This would represent one possible approach to improve e.g. reliability, creating a kind of network of the same sensors that represent a multisensor or rather multi signal infrastructure.
A non invasive approach to glucose monitoring (NIGM) is dielectric spectroscopy (DS). However, a number of external and physiological factors can affect the measurement, and some of these factors may even be considered as generic perturbations to (NI)GM in general. In order to be able to compensate for such factors again several sensors are suggested to be operated together but in this case the multisensor platform includes different sensors like for e.g. broad band DS, optical, moisture, conductance, acceleration and temperature measurements to improve glucose tracking reliability.
Details are discussed towards such a NI multisensor concept including the respective challenges together with experimental and clinical data as well as considerations towards its potential future application.

Sala INFM, Via Ferrata 2
Giovedì 7 febbraio 2008, ore 14.30

I dottorandi e gli interessati sono cordialmente invitati.

Gli organizzatori
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