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SEMINAR

Room 1003, ETB

November 6, 2012 3:55-5:10 P.M.

A MULTICHANNEL LABEL-FREE IMPEDIMETRIC SENSOR PLATFORM

by

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Abstract: In this work we report on a multichannel label-free impedimetric sensor platform that is suitable for high-throughput analysis of affinity binding. The sensor is based on electrochemical impedance spectroscopy (EIS) and a surface modification of gold electrodes using a carboxy functionalized conductive polymer (polypyrrole). Concentrations of Biotinylated Bovine Serum Albumin (bBSA) down to 1 ng/ml were achieved using this setup.

In this presentation I will give an introduction to affinity biosensors and explain the motivation behind my work. Furthermore, the details of the manufacturing of the electrode as well as the surface modifications methods will be elucidated. Afterwards the measurement results using two different analyses will be discussed and future works will be proposed. To conclude I will talk about the motivation of my exchange period at Texas A&M.

Leonardo Pires was born in Belo Horizonte, Brazil in 1984. He received the B.Sc. in electrical engineering from Universidade Federal de Minas Gerais (UFMG) in 2008. In 2010 he completed his M.Sc. in electrical engineering and information technology from Karlsruhe Institute of Technology (KIT), Germany. Since 2011 he is pursuing his Ph.D. degree at KIT working with impedimetric affinity biosensors. His fields of interest are: microfluidics, electrochemical impedance spectroscopy, affinity sensors and biofilm monitoring.

