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Welcome Letter

Welcome Letter

Dear Colleagues,

SBBq Executive Committee

On behalf of the entire organizing committee, we welcome the participants of the XLI Annual Meeting of the Brazilian Biochemistry and Molecular Biology Society (SBBq) in Foz do Iguaçu, Paraná, Brazil.

Financial Support

General Information

The Congress aims to offer a broad overview of the frontiers of research and recent developments in many aspects of Biochemistry and Molecular Biology in the Americas and the Iberian Peninsula.

Scientific Program

Abstracts

The Annual Meeting of the Brazilian Biochemistry and Molecular Biology Society (SBBq) is currently one of the most traditional events of the Brazilian scientific community. For over four decades, these meetings have provided the scenario and forum for debates concerning the advancement of fundamental knowledge of Biochemical phenomena, their employment for social benefit and integration of this knowledge with other segments of the biological and physiochemical sciences.

Poster Session

Technical Seminar

ExpoSBBq

We wish to thank all the highly accomplished invited speakers for accepting our invitation to present their work at the Congress, thus contributing to a program that we trust all participants will find interesting.

Extra Activity

Institutions

We also wish to welcome all the participants who come from abroad, hoping that they will find time to experience some of our culture, as well as to discuss Science with us.

Bem-vindos ao Brasil!!!

Helena C.F. Oliveira
President of SBBq

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Microcantilever used in Atomic Force Microscopy, as a Toolbox to Biotechnology

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In this presentation we intend to show how a simple cantilever configurations, as used in atomic force microscopy (AFM), could be used as chemical and biological sensors. Recent advances in the design and development of these sensors and biosensor provide a simple microelectromechanical system, which can be easily manufactured, produced on a large scale and capable of detecting very small mechanical deflections. The spring constant of a microcantilever is the order of 10⁻³ to 10¹ N / m, allowing in this way, detection of very small forces (10⁻¹² to 10⁻⁹ N). These factors result in a faster response time, lower cost of manufacturing, construction of an array of sensors with small dimensions allowing thus the investigation of microenvironments. Follow below some examples of the applications: A) Chemical Force Microscopy (CFM) to detecting herbicides. Specific interactions between surfaces can be studied at the molecular scale using atomic force microscopy (AFM). Some results of the adhesion force between glass (substrate) with and without herbicide (diclofop-methyl) and the tip of the Atomic Force Microscopy (AFM) coated with enzyme (acetyl-Coa carboxylase (ACCase) will be presented. B) Nanomechanical Cantilever Sensors (NCS). A silicon microcantilever (MC) sensor functionalized with a sensitive layer of conducting polymer applied as a humidity sensor. The polyaniline was used as a sensitive layer, and was deposited on MCs surface using the spin-coating method. The results showed a change on the surface tension on the coated MC sensor due to the water vapor in the environment. C) Microcantilever as a biosensor. The great interest in developing microcantilever-based biosensors is due the binding specificity of biomolecules for analytical sensing. The advantages of microcantilever-based biosensors are small size, label-free detection, and potential for arrayed operation. The technology based on microcantilever arrays would be very attractive because can detect multiple biomarkers simultaneously with high sensitivity and selectivity using small volumes of sample.

Keyword: AFM; Microcantilever; Nano(Bio)sensors

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