

Advanced and Challenges in Affinity based sensing

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Abstract

There is an increasing interest in cheap, fast, selective and sensitive analytical approaches for a variety of applications. We have been developed over the last 30 years innovative bioanalytical approaches based on several sensing platforms, using different transduction principle, mainly piezoelectric and optical, in particular based on Plasmonic, and to less extent electrochemical for a variety of applications to food analysis, clinical molecular diagnostics, antidoping, drug development environmental science.

Mainly the key point from an analytical chemist is to let this innovative device working in a real matrix and for this goal much attention is devoted to the selection of the bioreceptor and the immobilization chemistry to control unspecific contribution to signal. Behind this, selectivity and sensitivity are eventually key parameters.

Nanotechnology plays an important role in development of bioanalytical innovative strategies, acting on the mentioned parameters. Moreover, recently part of our research is mainly focused on conventional Surface Plasmon Resonance (SPR) approach, has been involved in nanoplasmonics, in particular coupling nanostructures to innovative material and biomimetic receptors.

In this talk we will present our recent findings on innovative biomimetic receptors and the use of nanotechnology in Bioanalysis.

References

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