The principal purpose of combining Magnetics nanoparticles (MNPs) with a biopolymer or biomolecule is to obtain magnetic response, biocompatibility and the ability of housing bioactive entities such as drugs, antibodies, enzymes, cells, etc. On the other hand many sensor has been development in order to detect the performance of these nanobeads. In this context we demonstrated that it is possible to detect magnetic nanobeads using an electrical transductor where its electrical signal depends of the type and quantity of the attached biomolecule to the magnetics nanostructure. The synthesis, characterization and performance of the biosensor will be present in this work.

**Keywords:** nanobeads, sensor, nanostructure

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