

Bioceramics for health

F4. Nanobiomaterials and Nanotechnology for Implants, Devices and Diagnostics

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Abstract

My work in the field of Biomaterials started in the 1990s. Back then, the study of bone replacement materials, bone repair solutions and the field of bioceramics deeply attracted my interest and were the main focus of our preliminary efforts.

We focused our work in the synthesis of hydroxyapatite compounds, calcium phosphates, bioglasses, glass ceramics and hybrid materials. Although our first efforts were focused on obtaining materials eligible as tissue replacement solutions, in the 2000s we would start to design these materials also as potential drug delivery systems, attempting to reach a dual purpose.

In the 2010s, we expanded our field of research from bioceramics towards nanomedicine.

We are currently working in this field, particularly in three main bone issues: cancer, infection and osteoporosis.

This particular path within the world of Biomaterials, as is the case with many other routes, has been defined by the meeting of very different disciplines, since a combined and multidisciplinary effort is the only answer to these complex issues.