

Noble microfluidic system for bioceramic nanoparticles engineering

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Bioceramic nanoparticles have many potential applications within the biomedical device industry. However, these applications demand a precise control of their sizes, shapes and morphology which play a main role in most properties. In this work, we report a new route for the synthesis of hydroxyapatite nanoparticles using a microfluidic device. The process is carried out by continuous laminar flow through the device. The obtained nanoparticles have showed same properties (composition, length, orientation, roughness) than those produced by conventional methods, however, our device can afford to fine tune the structure via simple engineering, i.e., produce nanoparticles of different size only by varying the flow velocity. In addition to the efficiency and novelty of this system, the optimization of personnel costs makes it very profitable economically.