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Abstract

Dendrimers are flexible 3D polymers with a perfectly defined and highly reproducible structure. In particular, polyurea (PURE) dendrimers are a new class of dendrimers with unusual properties. PURE dendrimers are biocompatible, biodegradable, non-cytotoxic and present a pH-dependent intrinsic fluorescence. The use PURE dendrimer nanoparticles in cancer nanotechnology will be presented and discussed.

Keywords: polyurea dendrimers, luminescence, drug and gene delivery, cancer nanotechnology

Short biography

Dr. Vasco Bonifácio graduated in Chemical Engineering (1995) and Applied Chemistry (1997), and received his PhD in Organic Chemistry in 2006. After a post-doc in Germany he was appointed Assistant Researcher of MIT Portugal and invited Assistant Professor at FCT/UNL. He recently moved to IST, where he is a CQFM Researcher and also an invited Assistant Professor. He was a Visiting Researcher at MIT and Bordeaux University.

Dr. Bonifácio discovered polyurea dendrimers in 2012, a new class of polymers with unusual properties. His actual research interests are focused in the fields of Nanomedicine, Molecular Electronics and Green Chemistry. In parallel to his research activity he is also enrolled in the development of teaching tools for blind and visually impaired students.

In 2017, he received the "International Advanced Materials Scientist Medal" for his contribution in the field of "Advanced Materials Science and Technology".