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Bacterial nano cellulose –A novel marketable food hydrocolloid

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Food hydrocolloids find a widespread use for thickening and jellyfication of aqueous solutions, stabilization of foams, emulsions and dispersions, inhibition of ice and sugar crystal formation and the controlled release of flavours, etc. Bacterial nanocellulose (BNC) is an outstanding polymer extruded by *Komagataeibacter sucrofermentans* (formerly *Gluconacetobacter xylinus*) to yield a 3D nanofibrillar pure cellulosic network. BNC exhibits high tensile strength, in situ moldability, water holding capacity, biocompatibility and biodegradability. These unique properties allowed exploring its potential mostly in the biomedical field, where temporary skin substitutes and artificial blood vessels appear as patented products. In Asian countries, as obtained by “traditional” fermentation methods, BNC is marketed as “*nata de coco*”, a low-calorie sweetened dessert and high-fiber food. The technological production and use of BNC, however still meets significant challenges. This presentation will overview the potential uses of BNC in several food applications. Further, it will outline the major steps in taking an idea or a technology to market, growing the venture and securing a successful exit. It will present BC Technologies (Bacterial Cellulose Technologies), a spin-off from the University of Minho (Portugal). Through R&D activities, networking & partnering with industry, BCT aims to bring new and improved solutions, based on BNC, to the food sector, biomedical, composites, and pulp and paper industries. Examples of successful product development and industry networking in the food sector will be shown. Finally, plans to produce and commercialize bacterial cellulose for food applications, through a cost-effective production system, will be presented.

Biography

Fernando Dourado is a Post-Doc Researcher at the Centre of Biological Engineering, University of Minho. With a PhD in Chemical and Biological Engineering, he has been working on the modification of BNC for several biotechnological applications. He has also been working on the development of a large-scale BNC production system. He Co-founded BC Technologies, Ltd., a start-up that uses its integrated R&D capabilities, to provide scientific and technological solutions for the food and biomedical industry, using BNC; he is also the Co-founder, shareholder and member of the board of administration of Satisfibre, S.A., an emerging company engaged in the large-scale production of BNC.

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