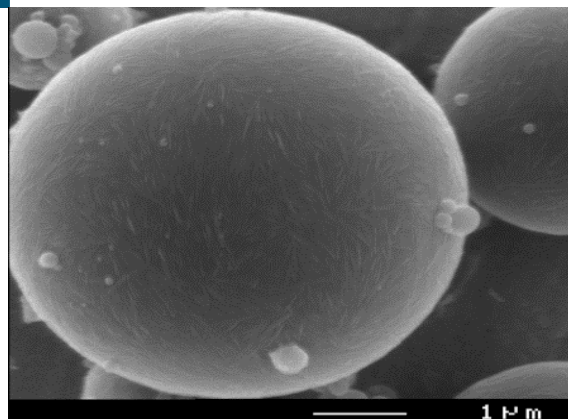


Formulation of emulsions stabilized with chitin nanocrystal particles (surfactant-free)

Description

INRA in Nantes, has developed a formulation including a percentage of hydrophobic dispersed (internal) phase that can be above 74%, only stabilized by polysaccharide nanocrystals issued from shrimp, crab or insect. These highly stable emulsions can stabilize liquid oil as a gel with only 10% of water and 0.01% of chitin. Such biodegradable and biocompatible particles can replace efficiently surfactants from most of formulations offering a large range of potential applications.



Type of expected transfer

Under license on patent or a license option with R&D program.

Advantages

The emulsion is stabilized by biobased, biodegradable and biocompatible substances. The process uses a very low nanoparticles quantity. Chitin nanocrystals have a high stability which is conserved in emulsions. The process avoids the presence of residues that could be desorbed in the internal phase. HIPE emulsions allow higher oil content (which have nutritional properties or not). The obtention process for these HIPE is realized in one step. Chitin is composed by a cellulosic skeleton with amine functional groups.

Possible applications

food, cosmetics, pharmaceuticals, phytosanitary

Key words

chitin, emulsion, food, cosmetics, pharmaceuticals, phytosanitary

TRL Scale



Development level

PCT/FR2013/052465 patent protects the emulsion composition including chitin nanocrystals, localized at the edge between the internal phase and the continuous hydrophilic phase, and the process.

Laboratories:

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