Carla I P Aguilar, J Nanomedine Biotherapeutic Discov, Volume: 08
DOI: 10.4172/2155-983X-C1-002

Joint Event on

30th Annual Congress on

Nanotechnology and Nanomaterials

&

8th World Congress on

Spectroscopy and Analytical Techniques

September 10 - 11, 2018 I Stockholm, Sweden

Versatility of nanomaterials in commercial applications

Carla I P Aguilar

University of Central Florida, USA

The two applications that used clays with particular sizes from 3 Å to 5 Å were implemented in the dehydration of food and in ballast water treatment. The former allowed the concentration of vitamins, augmentation of inulin content, improvement of probiotics' bacteria count and preservation of more than 1000 products for periods longer than one year without employing chemicals. The latter contributed to destroy bacteria in ballast water and also to remove seawater in oil byproducts and recover their characteristics to be reused for the same application or as a lower grade product; important outcome especially during oil spills. The process consists of using clays as filters in a vacuum chamber and tuning the changes of temperature and pressure by trial and error until the maximization of desired characteristics is obtained. Results showed that vitamin content could increase at least five times more than the natural product for the same analyzed quantity, for inulin content three times more and probiotics' bacteria count up to five times more. For ballast water, with initial count at 1:1 dilution, 8 cells/g were found; after the clay nano-filter process at 1:100 dilutions, less than 100 cells/g were counted. For seawater and sediments at 1:100 dilutions before the treatment 1200 cells/g were found, while after the process at the same dilution, only 100 cells/g were counted. For the oil based components, different viscosities and seawater mixes of 50%-50% and 25% oil and 75% seawater were tested in a 12-hour and 24-hour cycle. Water removal results between 65%-80%. The viscosities and seawater removal of the three studied oil based components determined the final applications.

Biography

Carla I P Aguilar is an Engineer. She has completed four Master's Degrees' in Manufacturing Engineering, MBA, Finance and Environment. She has also four specializations in Management, Groundwater Modelling, Energy, Water Quality and Bio-indicators, and multiple courses in various engineering and management fields worldwide. She did her research at École des Mines de Paris for 10 years in special techniques and economics in sub-soil exploitations. Currently, she is a PhD candidate at University of Central Florida. She has participated in exhibitions and as speaker in various conferences around the world for many years. She has also published various papers in topics such as: agriculture, remote sensing, modelling and land used optimization are among others. She has been a Consultant for various companies in Colombia-South America and at international level. She has also been widely involved in social work and sustainable development.

carlapalencia@hotmail.com

Notes: