

Sustainable Exploitation of Natural Resources for High-added Value Applications: Innovation and Some Strategic Approaches

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ABSTRACT

This presentation will describe different ways of obtaining/extracting materials from different natural sources and to try to apply them in high-added value applications. The use of waste and sub-products of different industries will also be described.

Some examples of natural resources used in our research group are natural origin polymers such as: starch, chitin, chitosan, casein, soy, gellan gum, hyaluronic acid, silk fibroin, xanthan, etc.). Several marine origin resources used to obtain materials from different algae (red, brown and green), squids, shark skin, marine sponges, mineralized algae, jelly fish, crabs, lobsters, in order to obtain different products such as chitin, chitosan ulvan, carragenan, marine hydroxyapatite, collagen, fuicodan, among others, will also be described. Finally some research on cork based materials will also be discussed.

A range of possible biomedical, and other types of applications, will be described. Those will include different types of biomaterials, including materials for bone replacement and fixation, drug delivery carriers, partially degradable bone cements and tissue engineering scaffolding. Some possibilities in the fields of tissue engineering, regenerative medicine, stem cells and drug delivery applications will be portrayed. Lastly, some applications in packaging, new composites, glues, absorption materials, among others will be presented.

Some details on IP generation and protection will also be touched upon.