TECHNO MARKET - By Ouest Valorisation

L'accompagnement sur-mesure de vos projets d'innovation

Notre mission :
Proposer aux entreprises des ressources d'innovation attractives issues de plus de 160 laboratoires et 7200 chercheurs.

Chemically functionalized cellulosic material using a diazo compound to yield hydrophobic bio-sourced materials.

Cellulose is the ultimate sustainable biomaterial due to its biocompatibility, low cost, thermal and chemical stability and worldwide availability with an estimated annual bioproduction by the vegetal kingdom of more than 1012 tons. While fabric and paper are the most important uses thereof in terms of volume, cellulose is also used in the fabrication of high-value materials.

Cellulose fibers are a highly hydrophilic material by nature. Hence, modifying the surface of cellulose fibers for the synthesis of hydrophobic material could be considered as a most difficult task. However, combining the renewable, biodegradable and non-toxic properties of cellulose fibers with chemical treatment for increasing their water resistance has been a challenge of great interest for the chemists behind this innovation.

The invention concerns ultra-fast reactions for the surface modification of cellulose fibers through covalent approaches using experimentally very simple process. We have selected highly reactive diazo compounds. This technology is a novel approach for synthesis of water insensitive highly hydrophobic cellulose fibers. To illustrate this innovative method, cholesterol was covalently grafted onto cellulose at the lab-scale to yield a new hydrophobic bio-sourced materials with promising results .

Nature de l'offre :

- Functionalization of cellulose in the form of paper or fabric using diazo compounds. Compared to known traditional methods, the proposed functionalization reaction takes place in a single step and allows for a rapid grafting via a covalent ether bond which is resistant to hydrolysis conditions.

Domaines d'application :

- Packaging

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Cette solution est faite pour vous si vous êtes :

- Une entreprise qui souhaite commercialiser la solution