

## Enzyme immobilization on novel ionic liquid-based supports

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In recent years, a great interest in the development of sustainable and efficient biocatalytic processes has been faced [1]. Biocatalysts can operate at mild conditions, which may significantly reduce energy inputs and waste generation as compared to synthetic catalysts. However, biocatalysts are not a primordial choice in many industrial applications because of their low stability and activity, and difficulties in immobilization for reusability. To allow their reuse and reduce the processes cost, a step comprising the recovery and reuse of the employed enzymes is essential, which is usually achieved using solid supports. The most used methods consist of the adsorption or covalent binding of the enzyme to the support [1]. These solid supports, however, have some disadvantages, such as enzyme deactivation, leaching, and high cost. In this work, it is proposed the use of new supports based on cholinium-based ionic liquids for enzyme immobilization. Laccase was chosen as model enzyme since it has been attracting a large attention in the past years due to its ability to degrade a wide variety of substrates, is currently considered a promising biocatalyst in bio-based industries [2]. These supports were studied with several laccase substrates, such as dyes, phenol, beta blocker and others.

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