



Silica Nanoparticles for Enzyme Immobilization and Biotechnological Applications

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Message from the Guest Editors

Dear Colleagues,

Silica nanoparticles are valid supports for enzymatic immobilization. Enzymes have a number of advantages as catalysts, such as high selectivity and mild operating conditions, as well as providing a green synthetic route. The need to immobilize enzymes on solid matrices arises from their intrinsic instability. In fact, immobilization allows for the reuse of the heterogeneous catalyst and often stabilizes the conformation of the protein, which is essential for its catalytic function, even when it operates in conditions other than physiological ones. Porous silica allows for enzymes to be hosted within its structure, providing them with greater stability, without the need for covalent links. By modulating the size, morphology and interconnection of the pores, it is possible to obtain the most suitable support for each enzyme, which preserves its functionality and reduces the mass transport limitations of substrates and products.

This Special Issue aims to open a discussion on the possible applications of enzymes immobilized on silica nanoparticles in the industrial sector of biotechnology.





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Message from the Editor-in-Chief

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