Special Issue

Enzyme Engineering: From Chemically Induced Modifications to Genetic Code Expansion

Message from the Guest Editors

Enzyme engineering has become extremely important for biocatalytic processes, which is observed by the amount of research that has been dedicated to this field in the past decade. This interest is due to the intrinsic features of enzymes and their advantages over chemical catalysts such as high productivity, specificity, and catalytic efficiency, but it is also faced with high cost and low stability issues.Traditional methods of enzyme engineering have enabled the production of stable and highly efficient enzymes as well as entirely new functionalities, but they have also started to concede space to more advanced approaches. Recent efforts have focused on induced chemical modifications and genetic code expansion to install new catalytic modalities, expand acceptable substrates, and increase thermostability amongst other features. This Special Issue aims to cover the progress and trends in traditional enzyme engineering, new chemical methods to modify and modulate enzyme activity and structure, genetic code expansion by insertion of noncannocial amino acids (ncAA), and other strategies to develop innovative biocatalysts.

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