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Overcoming the Challenges in Biocatalytic Applications

Guest Editors:

Dr. Martina Letizia Contente
Department of Food, Environmental and Nutritiona Sciences (DeFENS), University of Milan, via mangiagalli 25, 20133 Milan, Italy

Dr. Ana I. Benítez-Mateos
Department of Chemistry and Biochemistry, University of Bern, 3012 Bern, Switzerland

Deadline for manuscript submissions:
closed (31 December 2021)

Message from the Guest Editors

Although biocatalysis is considered a “hot topic” because of its potential, enzymatic reactions represent only a small fraction of the total industrial processing. The major drawbacks are related to poor enzyme stability when harsh reaction conditions are required as well as cost efficiency. There is a pressing demand to develop innovative strategies in order to reach the imposed standard for industrial applications and make biocatalysts a strategic addition to other catalysts in the chemist’s toolkit.

This Special Issue aims to overcome the perception that biocatalysis is inefficient compared with traditional chemical methods. Submissions are welcome in the following topics:

- Novel materials and methodologies for enzyme/whole-cell immobilization;
- Biocatalyst integration in continuous processes;
- Hierarchical spatial organization of enzymes and cofactors;
- Advances in the characterization and monitoring of biocatalyst performance;
- Biocatalyst functionalization for enhanced stability;
- Bioreactor engineering and downstream processing;
- Biocatalyst reusability;
- Catalysis innovation: biocatalyst evolution, enzyme discovery, computational design.