Biocatalysis, a rapidly evolving field with increasing impact in synthesis, chemical manufacturing and medicine, is being transformed by advances in biophysical and computational techniques. It is expanding into new areas of chemistry, facilitated by de novo protein design, directed evolution, incorporation of new catalytic functionality into proteins, genetic data, developing spectroscopic and structural techniques, and informed by modelling, machine learning and artificial intelligence.

The themes of this volume will be of interest to researchers working in different fields (for example synthetic biology, computational chemistry and mechanistic organic and organometallic chemistry) to improve our understanding of enzyme catalytic power with a view to engineering hybrid and artificial enzymes.

This volume brings together a wide range of scientists, from both industry and academia, to discuss the opportunities and challenges of this rapidly developing area.

The themes covered in this volume include:

- Enzyme evolution, engineering and design: mechanism and dynamics
- Biocatalytic pathways, cascades, cells and systems
- Biocatalysis for industry, medicine and the circular economy
- Artificial, biomimetic and hybrid enzymes

Front cover image:
[FeFe]hydrogenase with intrinsic protection from oxidative damage can shed light on simple yet efficient catalysis on protons and electrons.

Faraday Discussions

Volume: 252

Faraday Discussions documents a long-established series of Faraday Discussion meetings which provide a unique international forum for the exchange of views and newly acquired results in developing areas of physical chemistry, biophysical chemistry and chemical physics.

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ISBN 978-1-83767-387-2

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