Electrosynthesis Faraday Discussion

Organic electrosynthesis initially emerged in the field of synthetic chemistry as an intrinsically green method to replace hazardous chemicals by electrons for oxidations and reductions. In recent years it has been shown to offer unique opportunities to increase conversion efficiencies and synthesize new molecules that are not accessible thermochemically or photochemically and not accessible from petroleum. It can also be used to streamline biocatalysis and chemocatalysis in biorefineries, manufacture chemicals from regional- and community-scale quantities of agricultural waste, and in the pharmaceutical and chemical industries to access fine chemicals in a more efficient and sustainable fashion. Nevertheless, many of these efforts remain exploratory as a fundamental understanding of the elementary processes involved in these transformations is still lacking.

This Faraday Discussion Volume will bring together synthetic chemists, physical chemists, material scientists, electrochemists, computational scientists, and engineers to harness the transformative knowledge required to develop this technology

In this volume, the topics covered are organised into the following sections:

- Selective organic electrosynthesis
- Interdisciplinary electrosynthesis
- Understanding and controlling organic electrosynthesis mechanisms
- New strategies in organic electrosynthesis
- Materials for electrosynthesis
- Electrofuels
- Flow cells and reactor design

Front cover image
Whisky distillery co-products are electrochemically converted to hydrogen using a phosphomolybdic acid catalyst. A process overview through the Isle of Raasay Distillery's stillhouse window.

Faraday Discussions

Volume: 247

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.

The papers presented are published in the Faraday Discussion volume together with a record of the discussion contributions made at the meeting. Faraday Discussions therefore provide an important record of current international knowledge and views in the field concerned.

ISBN 978-1-83767-094-9

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