There is much speculation about the chemistry occurring in astronomical environments, but without observation of such environments, speculation is without foundation. Observational astrochemistry is the foundation on which astrochemistry is built. It offers us a window into a world that would otherwise be beyond our reach. Chemical spectroscopy lets us identify chemical species and probe their environments; gas-phase, surface, solid-state and photochemically-induced chemical processes drive the evolution of our galaxy and others; chemical evolution controls the formation of stars and planets; chemistry is the forerunner that brings us to the edge of biology and of life itself. This window on our universe is being opened more widely as a revolution in the observational capabilities available to astronomers is expected to continue through the 2020s and beyond.

This Faraday Discussion Volume brings together internationally leading experimental and theoretical scientists from across the fields of astronomy, chemistry, and physics to explore and exchange their ideas about our chemical understanding of the Universe.

The topics are organised into the following sections:

- Observational astrochemistry in the age of ALMA, NOEMA, JWST and beyond
- Laboratory astrochemistry of the gas phase
- Laboratory astrochemistry of and on dust and ices
- Computational astrochemistry

Front cover image: High-resolution rovibrational and rotational spectroscopy of the singly deuterated cyclopropenyl cation, c-$C_3H_2D^+$. Reproduced by permission of Divita Gupta.

# Faraday Discussions

## Volume: 245

**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 978-1-83767-092-5


ROYAL SOCIETY OF CHEMISTRY

www.rsc.org/faraday_d