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Chromatography: Introduction

Each year the tentacles of chromatography reach more deeply into diverse fields of chemistry. The unique ability of chromatography to divulge information on the composition of matter is of central importance to chemistry because chemistry is, after all, the study of matter. Furthermore, the matter that chemists are willing to tackle is becoming more and more complex as epitomized by biological fluids and polluted air and water. No other tool has such a broad-ranging capability for pulling apart the components of such complex materials and enhancing our knowledge of their composition.

The tentacles of chromatography that reach out and enrich most of chemistry are two-way linkages. Chromatography as a physicochemical phenomenon thrives on chemical knowledge, and its capabilities grow in proportion to the chemical understanding of the multiphase dynamical systems of chromatography. Particularly important to the optimization of chromatography is deeper knowledge about many of the subtle factors involved in intermolecular interactions—in liquids, in supercritical fluids, and at surfaces—that govern chromatographic retention and selectivity. Other important areas where chemistry feeds chromatography include interfacial dynamics, surface structure and catalysis, diffusion through polymers, and, not least, the spectroscopy underlying component detection and quantitation.

In this volume the editors, John Gladysz and Josef Michl, have assembled a remarkable series of papers illustrating different flows along the branches connecting chromatography to its parent chemistry. One finds here an excellent display of the vitality of this still growing interaction.

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