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Book Review

A Century of Separation Science

Haleem J. Issaq (Ed.); Marcel Dekker, Inc., New York, 2002, xiv + 755 pages, ISBN 0-8247-0576-9, $225.00

Since its introduction by Tswett in 1901 as column chromatography for the separation of plant pigments, separation science has developed many diversified branches, each of which has its advantages, limitations, and fields of application. As the century progressed, so did development of many separation techniques in addition to column and paper chromatography: thin layer chromatography, slab gel electrophoresis, gas chromatography, ion chromatography, supercritical fluid chromatography, field flow fractionation, countercurrent chromatography, solid phase extraction, affinity chromatography, and capillary electrophoresis. The trend throughout the 20th century focused on high throughput, increased efficiency, smaller sample size, less waste, high resolution, and more sensitive detection methods. Thus separation science of the future will be not just a tool for the organic chemist but will be more closely involved in the biological and biomedical sciences.

A Century of Separation Science presents an extensive overview of the critical developments in separation science since 1900. With contributions from over 35 seasoned experts in the field, this book discusses current techniques in solid phase extraction, microfluidics, capillary and slab gel electrophoresis, and gas, ion, affinity, and thin-layer chromatography. The emergence of microchip electrophoresis for multisample analysis and modern detection and purification processes for new biomedical compounds are also covered. The book indeed explores many aspects of separation science. For example, Dr Leslie Ettre discusses the development of chromatography in the 20th century, a period that witnessed the emergence, development, and dominance of separation science as an analytical technique. Prof. Johan Roeraade's chapter 'From Crushed Bricks to Microchips' delineates the major developments in separation science.

The book provides an up-to-date, clearly written and presented compendium, tracing separation science from its conception to future trends in biomedical and biological research. It is a state-of-art source for chromatographers; analytical, physical, pharmaceutical, clinical, forensic, environmental, and synthetic chemists, biochemists, and biotechnologists; and upper-level undergraduate and graduate students in these disciplines.

John F. Kennedy*
Qian Huang
Chembiotech Laboratories,
Institute of Research and Development,
University of Birmingham Research Park,
Birmingham B15 2SQ, UK

* Corresponding author.

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