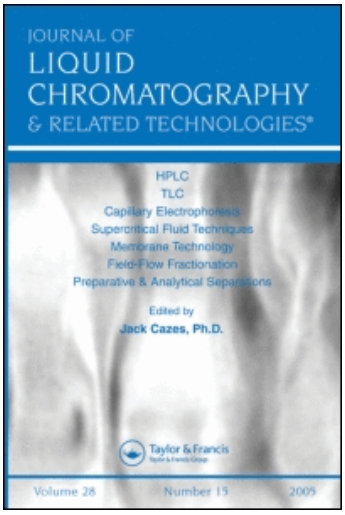

Journal of Liquid Chromatography & Related Technologies
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713597273

A Review of: "Fundamentals of Thin-Layer Chromatography (Planar Chromatography), F. Geiss Dr. Alfred Huthig Verlag Heidelberg-Basel-New York 1987, 482 VIII pp."

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To cite this Article Soczewinski, Edward(1988) 'A Review of: "Fundamentals of Thin-Layer Chromatography (Planar Chromatography), F. Geiss Dr. Alfred Huthig Verlag Heidelberg-Basel-New York 1987, 482 VIII pp."', Journal of Liquid Chromatography & Related Technologies, 11: 12, 2629 — 2630
To link to this Article: DOI: 10.1080/01483918808076751
URL: http://dx.doi.org/10.1080/01483918808076751

JOURNAL OF LIQUID CHROMATOGRAPHY,11(12),2629-2630(1988)

BOOK REVIEW

FUNDAMENTALS OF THIN-LAYER CHROMATOGRAPHY (PLANAR CHROMATOGRAPHY)

F. Geiss, Dr. Alfred Huthig Verlag
Heidelberg - Basel - New York
1987, 482 + VIII pp.

The importance of GC and HPLC is reflected by the numerous monographs available; on the other hand, there are few monographs on TLC and these are chiefly concerned with methods and applications. In spite of the fascination with instrumental techniques, there has been significant progress in TLC which, in combination with densitometry, is also a sensitive quantitative method. According to scientific publications, the share of TLC in the 1980's is more than 20% (data of Macek & Janak); however, the actual applications (which could be judged from the sales of TLC materials relative to those for HPLC and GC) are presumably significantly higher.

TLC is a deceptively simple technique so that it could be expected that only a simple theory of the process is required. In fact, the non-equilibrium process of elution in chromatography is much more complex than in column chromatography, and especially in the case of more complex samples and quantitation of results, a more sophisticated theory is needed.

In 1972, Dr. Geiss published the first monograph devoted to theory and technique of TLC (in German) which was a significant progress in understanding TLC. In 1980, the book became available to Japanese readers as a direct translation (S. Hara, T. Ohmori & K. Narimatsu). Recently,a new revised and updated edition was published in English.

The book contains all of the physicochemical knowledge of the elution process in TLC that is important to the practical chromatographer. The parameters which determine the selectivity, retention and spot spreading (such as adsorbent activity, eluent composition, pre-adsorption of vapours and evaporation of the mobile phase) are discussed and illustrated by numerous plots and actual chromatograms. Optimization procedures are

presented, including the most recent quantitative approaches to multicomponent eluents. The existing chambers for TLC are classified into several types and their advantages and drawbacks are compared, and the use of TLC as a pilot technique for isocratic and gradient HPLC are discussed.

One of the chapters (XI, written by S. Ebel) describes the theoretical and methodical basis of quantitation of TLC chromatograms by densitometry using modern densitometers.

The book is concluded by a subject index and 299 references, most with full titles, others with bibliographic data only. The book is well written, the errors are scarce (e.g., Figure 134 should be referred to Ref. 132).

The rational use of analytical techniques depends on understanding their physicochemical; basis and this statement refers also to TLC. Citing Dr. Snyder's preface, certainly "workers using either TLC or HPLC can profit handsomely from having this book in front of them."

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