Liquid Chromatography Column Theory and Technology

Lane C. Sander

National Institute of Standards and Technology,
Gaithersburg, MD 20899, USA

lane.sander@nist.gov

1. Summary

Column selection is probably the single most important aspect of method development that will directly affect measurement accuracy and precision of liquid chromatographic (LC) measurements. An understanding of physical and chemical properties of LC columns will greatly assist the development and optimization of robust analytical methods. This presentation will describe aspects of the preparation, characterization, and use of different types of liquid chromatographic columns, to facilitate informed selection of columns for the development of new methods. Topics include: substrates, synthesis of bonded stationary phases, spectroscopic approaches to characterize covalently modified surfaces, chromatographic retention mechanisms for normal-phase and reversed-phase separations, and properties of the most common types of commercially available columns, including newly developed core-shell technologies.[1]

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