
STATE-OF-THE-ART IN COLUMN TECHNOLOGY

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The past few years have witnessed a vivid interest in new column technologies. The introduction of ultra-high pressure instruments has led to the introduction of sub-two micrometer particles, while the "rediscovery" of porous shell particles in combination with novel fabrication technologies has led to particulate columns providing very high efficiencies at a minimal pressure cost. In addition, also some interesting progress is being made on the monolithic column format side.

The present contribution will provide an overview of these recent developments and try to denote the true speed potential of these different new developments. For this purpose, the extended kinetic plot method will be used. As this method has recently been extended to gradient elution conditions, the quality of columns can now be compared under both gradient and isocratic elution conditions.

As in many cases the performance of the column can not be isolated from that of the instrument, the effect of extra-column band broadening and the importance of a good column oven design will be discussed as well.