# CHROMCOM

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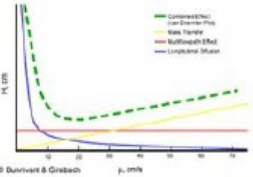
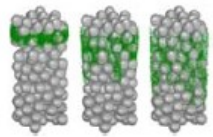
ChromSoc
The Chromatographic Society - founded 1956



# Van Deemter explained



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CHROMCOM

# TECHNICAL ARTICLE

## INVESTIGATION INTO THE SELECTION OF ACHIRAL STATIONARY PHASES IN SFC

By D. Fundu*, V. Coulthard, P. Abbott

*Reach Separations Ltd, Biocity Nottingham, Pennyfoot Street, Nottingham, NG1 1GF, d.fundu@reachseparations.com

### ABSTRACT

A quantitative study on designing an achiral stationary phase screening methodology for Supercritical Fluid Chromatography (SFC) was undertaken. A Quantitative Structure-Activity Relationship (QSAR) analysis of compound physico-chemical properties was compared to the retention factors on a 17 column stationary phase screen.

### INTRODUCTION

### METHOD

A series of drug-like test compounds were screened across 17 achiral stationary phases on the Waters Acquity UPC²™ comprised of a Binary solvent manager, Sample manager, PDA detector (210-400nm), Convergence manager and Column manager (maintained at 40°C) controlled using Empower Pro 3 software. Food grade carbon dioxide 99.5% (BOC Gases, Nottingham UK) and HPLC grade Methanol 99.8+% (Fisher Scientific, Loughborough UK) were used as the mobile phase. All stationary phases used are

### RESULTS AND DISCUSSION

Retention factors were calculated using the standard isocratic retention formula. The criterion for optimum retention was judged using retention factor windows; preferred retention $5 \leq k \leq 7$, acceptable retention $3 \leq k < 5$ or $7 < k \leq 10$ and unacceptable retention $k < 3$ and $k > 10$.

A Bravais-Pearson correlation matrix[6] was used to show any correlation between any particular descriptor and retention factors on any particular column. No linear

# CONFERENCE PREVIEWS AND REVIEWS

## MEETING REVIEW

### HPLC 2015 GENEVA

Richard Hayes, University of Liverpool
Richard.hayes@liverpool.ac.uk

The 42nd Symposium of HPLC was held in the city of Geneva, Switzerland from 21-25th June at the International Conference Centre Geneva (CICG). Over 1000 delegates from all over the world attended, including 50 stands of sponsors and exhibitors spread over two floors, demonstrating the latest technology, software, columns, consumables and literature.

report is focussed mainly on the topics most relevant to myself.

As well as the presentation side of the conference there was also plenty of opportunity for networking, firstly at the welcome mixer on the Sunday evening, then

using smaller particles for higher efficiency is well known, and the use of non-porous versus porous particles gives more efficient protein separation due to improved mass transfer. Using a reversed-phase method at 40°C, three aggregates from the antibody were clearly separated in around 5 minutes

# MEMBERSHIP NEWS

## PRESIDENT SAYS ...

Firstly, let me give you a warm welcome to our second edition of ChromCom. In this 'President says' I just want to give you a brief overview of some of the areas the Chromatographic Society committee will be working on, and towards, during 2016 – a year which many of you will know is our Diamond (60th) anniversary.

In 2016 the Society will organise, or co-organise, five meetings starting with our first in March. The meeting theme is **ADVANCES IN MICROCOLUMN AND RELATED**

The next meeting for your diary is **ISC2016** in Cork, Ireland (28th August-1st September). This will be the largest chromatographic meeting to be held in Europe in 2016 and we will be organising a session within the programme which will reflect our strong connection with the ISC series. This meeting always attracts a large European audience and we would encourage you to attend if you are able.

Our fourth meeting of the year will focus on development of the next generation of chromatographers which is a topic we are passionate about. You may be aware that the Society supports doctoral students through different types of travel bursaries (including our John Dolphin bursary scheme), and

difficult to get full financial support to attend scientific meetings. As part of their legacy, this funding was bequeathed by the PASG to The Chromatographic Society when they ceased their activities in late 2014.

Our final meeting of the year will be held in November at the RSC's Burlington House where the subject will be **ADVANCES IN CLINICAL ANALYSIS.** This is a biennial meeting which we co-organise with the RSC Separation Science Group and always attracts a large audience. The venue will be larger than in previous years, so hopefully the meeting will attract an even larger audience on this occasion.

As you can see, we will have a packed year of