

Milestones in Chromatography

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Separation techniques nowadays are an indispensable tool in environmental, clinical, forensic and industrial analysis. They not only are among the most used and most informative analytical techniques, particularly when coupled to spectroscopic detection in the form of hyphenated techniques, but they have in fact also contributed to a large degree to the development of science, to significant biochemical and physiological discoveries, and to a better understanding of the environment and the hazards to which it is exposed.

The lecture course on “Milestones in Chromatography” will address the key events and developments that were decisive for the current success of this family of techniques. It will also discuss, with ample reference to current important examples, how the development of better materials and instrumentation, as well as a more thorough understanding of the underlying theory allowed designing separation techniques of enormous versatility and separation power. Starting from the very beginning, the development of separation techniques up to the current, cutting-edge techniques will be discussed exemplarily. The course is mainly intended for PhD and post doctoral students; however, as the lecture course will require only a basic (Bachelor level) knowledge in analytical chemistry/separation techniques, and it will also discuss topics of more general interest, it may as well be interesting for Master students of chemistry and related study programmes that would like to widen their horizon.

The course will discuss in an intuitive and self-contained way historic and new developments in separation techniques and related analytical science, and its important current applications. The course may thus be of interest to both chemists and (post)graduates from other, related disciplines.

Individual topics that will be addressed during this lecture course are:

1. Giving the right credits: Who invented chromatography ?
2. An equation and its inventor: The van Deemter curve
3. The stationary phase: the heart of chromatography
4. Olympic spirit: faster, further, smaller or: What miniaturization is good for
5. Adding a further dimension: two-dimensional GC and LC
6. The joy of hy-phe-na-tion.
7. Making elephants fly: protein analysis by mass spectrometry
8. Every molecule tells a story: Analysis of flavour compounds
9. The development of sensitive GC detectors and their contribution to our environmental awareness
10. Going green: The impact of modern sample preparation techniques.
11. Things to come: The future of separation techniques.

Termin	Dzień tygodnia	Godzina	Miejsce
08.04.2013	Poniedziałek	9.15 – 12.00	LUWR
09.04.2013	Wtorek	9.15 – 12.00	LUWR
10.04.2013	Środa	9.15 – 12.00	LUWR
11.04.2013	Czwartek	9.15 – 12.00	LUWR
12.04.2013	Piątek	9.15 – 12.00	LUWR