

212005 – SEPARATION METHODS

CREDITS: 04 (four) – 60 hours/class

CONTENT:

To study the classical methods of extraction and the main chromatographic and electromigration techniques, emphasizing concepts, fundamentals, applications and innovations, as well as to consider the classical systems of detection and their potentialities to obtain a better analytical performance.

SYLLABUS:

1. Classic methods of extraction: concepts, fundamentals, instrumentation and applications.
2. Introduction to chromatography: concepts, classification and fundamentals.
3. High performance liquid chromatography: concept, fundamentals, instrumentation and applications.
4. Gas chromatography: concept, fundamentals, instrumentation and applications.
5. Electromigration techniques (capillary electrophoresis): concepts, fundamentals, instrumentation and applications.

BIBLIOGRAPHY:

1. ALFASSI, Z.B.; WAI, C.M. Preconcentration techniques for trace element. CRC Press, 1992.
2. ROBARDS, Kevin; JACKSON, Peter E.; HADDAD, Paul A. Principles and practice of modern chromatographic methods. Elsevier Academic Press, England, 1997.
3. SNYDER, L.R.; KIRKLAND, J.J. Introduction to modern liquid chromatography. 2.ed. John Wiley & Sons, USA, 1979.
4. GROB, Robert Lee; BARRY, Eugene F. Modern practice of gas chromatography. 4.ed. Wiley-Interscience, USA, 2004.
5. SHINTANI, H.; POLONSKY, J. Handbook of capillary electrophoresis applications. Springer Netherlands, 1997.