CO18. Low pressure flow systems based on short length monolithic columns. Applications to coffee samples

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In the past few years, low pressure flow systems experienced progressive developments, aiming to easily perform sample analysis with high selectivity and automatically. Some developments were achieved through several strategies, such as the exploitation of the performance of different carrier propelling devices, tube and apparatus different sizes, in-line sample treatment strategies that enabled to perform p.e. derivatizations, dilutions, extraction steps, and-so-on, but still no strategy has yet been described capable to separate in-line the different constituents of a sample, with efficiency similar to chromatographic systems. In this scenario, coupling of monolithic columns to low pressure flow systems can be a viable way to overcome this original handicap assigned to flow–based techniques, since its beginning [1]. This strategy enables to perform a chromatographic approach straightforwardly over a sample matrix using a traditional low pressure flow system, and therefore reducing alternative in-line or off-line sample treatment, many times source of additional uncertain and labor. Considering coffee sample matrix, in a first case study, it is presented a flow system based on a peristaltic pump and a 10 mm monolithic column able to determine three methylxanthines; in a second case study, also using a similar flow system, preliminary results exploiting the coating of the RP-monolithic column with a cationic surfactant for retention of niacin is presented.

[1] D Satinsky, P Solich, P Chocholous, R Karlicek, Anal Chim Acta, 499 (2003) 205

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