

ABSTRACT

Charles University

Faculty of Pharmacy in Hradec Králové

Department of Analytical Chemistry

Candidate: Slavomíra Zatrochová

Supervisor: doc. RNDr. Dalibor Šatínský, Ph.D.

Title of diploma thesis: Testing of nanofibrous polymers for extraction on a magnetic stirrer

This thesis focuses on nanofibers polymers and their potential use for the sorption extraction on a magnetic stirrer (SBSE - stir bar sorptive extraction). The main aim of the work was to test selected types of polymer fibers and to prove their suitability as material for extraction on the magnetic stirrer. The presented work included the preparation of solutions to which we placed magnetic stirrers coated by nanofibers where the sorption extraction was carried out with selected substances. Afterwards chromatographic analysis and separation, the pre-concentrated substances on polymeric fibers was evaluated. After several measurements we found out that the extreme lipophilic analytes such as Sudan dyes were irreversibly adsorbed on polymeric fibers. Polystyrene fiber (PS) was not stable in used organic solvents and therefore was prepared again before every extraction. The highest theoretical enrichment factor (100) has not been achieved at any used nanofiber. In conclusion, we can say which selected kinds of polymeric fibers are suitable under the conditions of extraction.