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Bogusław Buszewski

Nicolaus Copernicus University, Poland

New stationary phases for separation of biologically active compounds: Synthesis, characterization and application

The need for selectivity determines the synthesis and development of chemically bonded stationary phases that contain various functional groups. Functional groups with specific properties, together with appropriate mobile phase qualitative and quantitative composition allow controlling separation selectivity. Silica gel and organic polymers are the most often used support for stationary phases. During preparation of the packing, organic ligands can be easily bonded to silica support which has good mechanical stability that supports efficiency of chromatographic separations. Presented study deal with the synthesis of novel group of chromatographic materials that contain different polar functional group incorporated to alkyl chains. Detailed instrumental characterization of the surface is also presented, including elemental analysis, spectroscopic techniques and chromatographic study. Solvation properties of novel materials as well as creation of electric double layer on its surface give also interesting information about surface properties. The main part of the presented work will focus of chromatographic applications of novel chromatographic materials in separation of various groups of biologically active compounds.

Biography

Boguslaw Buszewski received PhD degree at the Faculty of Chemical Technology, Slovak Technical University in Bratislava, Czechoslovakia in 1986. In 1992, he achieved the Doctor of Sciences (habilitation) degree. In 1994, he received Nicolaus Copernicus University Professor position. In 1999, he received the title of Professor of Chemistry and in 2000 received Full Professor of the Nicolaus Copernicus University in Toruń. His main scientific interests are concerned with environmental analysis, chromatography and related techniques (HPLC, SPE, GC, CZE, adsorption, and sample preparation), spectroscopy, utilization of waste and sludge and chemometrics. He is authored or co-authored 15 books, patents and more than 450 scientific papers (h=38) and is a Member of the editorial boards of 26 national and international journals in field of analytical chemistry and separation sciences. He was President of the *European Society for Separation Science (EuSSS)* but now he is President of the *Central European Group for Separation Sciences (CEGSS)*.

bbusz@chem.umk.pl

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