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XPS characterization of functionalized epoxid microparticles

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Microspheres made of cross-linked polymers play an important role in a variety of applications such as medicine, chromatography and organic synthesis. One important parameter for the performance of microspheres in these applications is the availability of functional (polymeric) groups on the particle's surface. Two different synthesis are here presented: on the one hand boronic acid functionalized microspheres are prepared for the first time via mild epoxide ring opening based on porous cross-linked polymeric microspheres [1] and on the other hand porous poly(glycidyl methacrylate) (pGMA) microspheres are functionalized via hetero Diels-Alder (HDA) chemistry using electron deficient thiocarbonyl thio compounds [2].

In this study, X-ray photoelectron spectroscopy (XPS) revealed detailed information about the chemical composition of the modified microsphere surfaces and contribute significantly to the successful verification of key synthetic steps. Further employed scanning electron microscopy (SEM) corroborates the successful modification of the microspheres.

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Literatur

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