

HPLC separation of polypropylene in different mobile phases.

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We have demonstrated recently that high-temperature gradient HPLC enables to separate polypropylene with regard to tacticity [1]. Using porous graphite Hypercarb® as column packing, and 2-octanol→1,2,4-trichlorobenzene as mobile phase enables to separate isotactic PP (iPP) from atactic PP (aPP) and syndiotactic PP (sPP). Moreover, sPP-iPP copolymers have been separated according to their tacticity [1] and the retention volumes of the copolymers correlated linearly with the average tacticity of the copolymers.

In this poster will be shown that in the dependence on the choice of the mobile phase, either:

- a) iPP, aPP and sPP are retained in the column;
- b) aPP and sPP are retained and iPP is not retained;
- c) only sPP is selectively adsorbed and desorbed and both iPP and aPP are not retained in the column;
- d) iPP, aPP and sPP are not retained in the column.

Linear PE is retained in the column in all above mentioned cases, i.e., PE may be separated from PP.

Identification of such HPLC systems, like will be described in the poster, may enable realization of especially selective HPLC separations of PP with different tacticity.

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References:

1. T. Macko, F. Cutillo, V. Busico, R. Brüll, *Macromol. Symp.* 2010, **298**, 182-190.