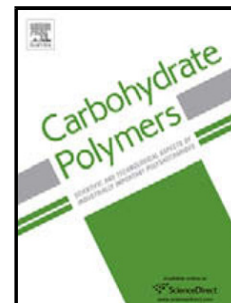


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## Quantifying the surface properties of enzymatically-made porous starches by using a surface energy analyzer

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### Highlights

- The surface properties of enzymatically-made porous starches were investigated
- Inverse gas chromatography was sensitive enough to detect surface alterations
- The increase in porosity and surface area had no effect on water vapor sorption
- Enzyme treatments resulted in porous starches with significant higher surface energy
- Starch acid-base behavior can be selectively increased depending on the enzyme

### Abstract

The behavior of starch during processing and its performance in products is influenced by the surface energetics/structure of the constituent particles. This work investigates the effect of enzymatically-produced porous maize starch particles on their energetic surface properties using inverse gas chromatography-based surface energy analysis (SEA). Three modified maize starch samples treated with amylase (AM), glucoamylase (AMG) and cyclodextrin-

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