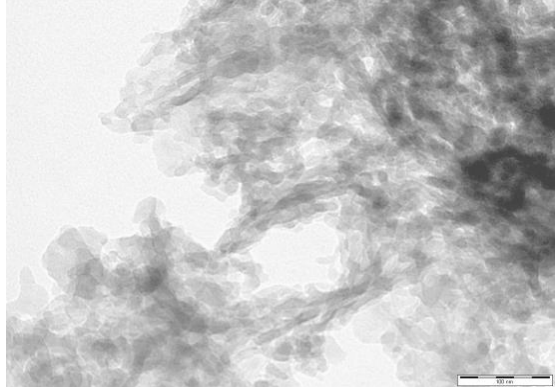
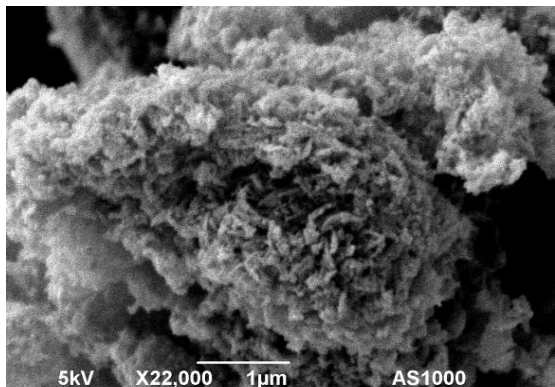




## Starbon® Case Study II - *Chromatographic separation of sugars*

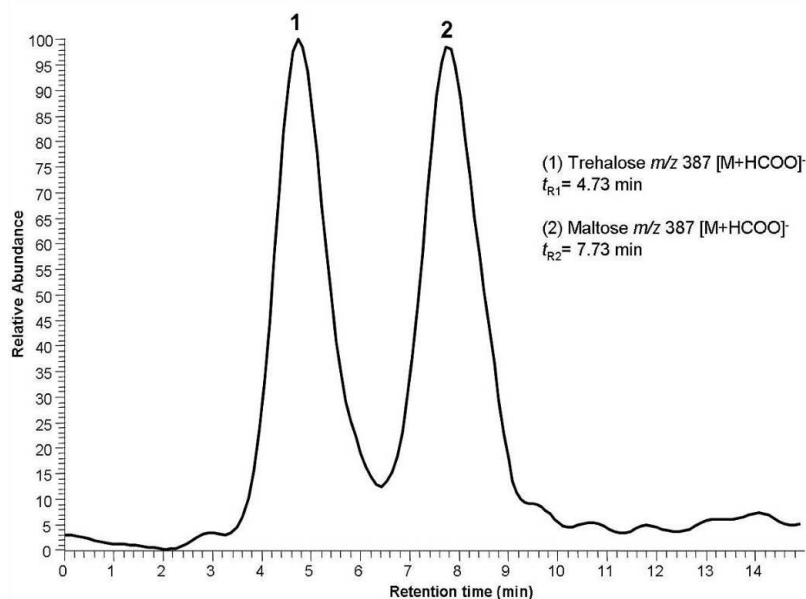


SEM and TEM images of Starbon alginic acid (1000 °C)

Starbon® materials derived from alginic acid are particularly attractive chromatographic stationary phase materials. Since they present minimal micropore content, this avoids reduction in separation efficiency as a consequence of irreversible high energy analyte adsorption in sub 2 nm pores. Furthermore, alginic acid derived Starbon® products have higher mesopore volumes and sizes required for good mass transfer and flow, and also lower micropore content as compared to conventional starch derived Starbon® products. Furthermore, Starbon® technology produces material with desirable aromatic character at relatively low temperatures, reducing the energy consumption of material preparation.

A carbonised mesoporous alginic acid (1000°C) is an efficient stationary phase for this separation of the sugars, glucose (mono-), sucrose (di-) and raffinose (trisaccharide). Ion chromatograms have excellent peak shape, and near baseline resolution.

Results from these chromatographic investigations demonstrate excellent separation and the exciting potential of these alginic acid derived Starbon® phases.



Extracted Ion Chromatograms obtained on the Starbon® alginic acid (1000 °C) separation of 50µg/mL standard solution of a mixture of the disaccharide isomers, trehalose and maltose.