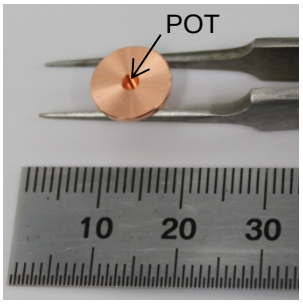
BioChromato

The Analysis application of Cellulose by ionRocket-DART-MS

【Background】 The biofuel and chemical productions from lignocellulosic biomass have been studied because of global warming and depletion of fossil fuel resources. Cellulose is kinds of the lignocellulosic biomass and it isn't consumed as food.Cellulose is polysaccharide constructed with many of β-1,4 linked glucose. It has many intermolecular and intramolecular hydrogen bonds, so it doesn't dissolve in water and some organic solvent.



【Sample】 Cellulose powder

【Methods】 Analysis system was composed with ionRocket, heating system, was connected to the DART-MS (Directed analysis in real time- mass spectrometry). The small quantities of samples were put on the POT and analyzed. The temperature was increase at 100 ºC per min, from 30 ºC to 600 ºC.

【Results】 The DART-MS spectrum around 400 ºC and the total ion current chromatogram of cellulose powder were shown in Figure 1. The cellulose powder was detected from 200 ºC and the most highest intensity was detected at around 400 ºC. The monomer, dimer and hydrate was detected. This result indicates that the ionRocket DART-MS analysis can provide the structural information of cellulose.

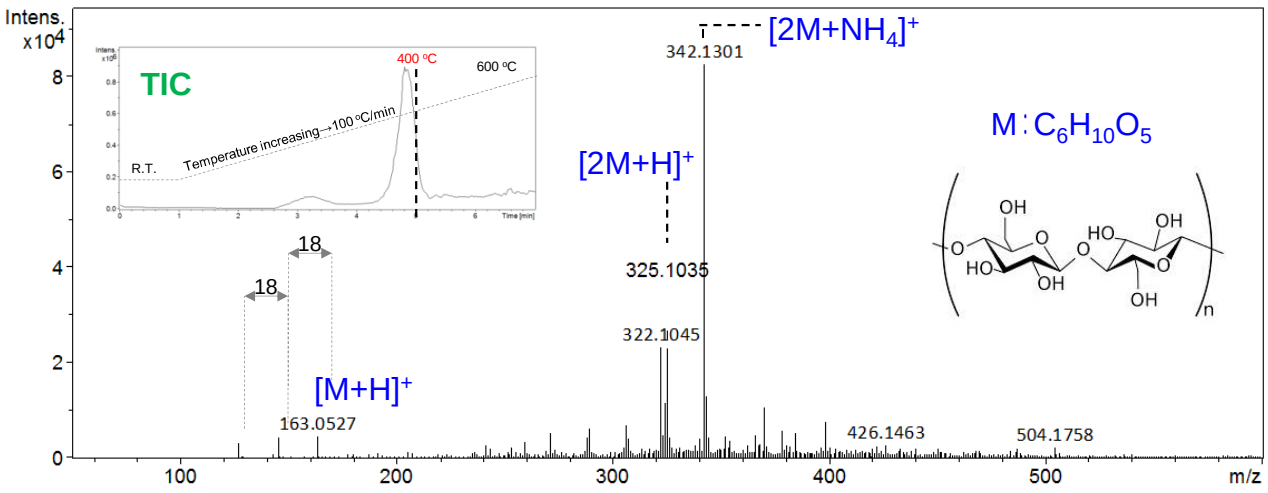


Figure.1 Total ion chromatogram and DART-MS spectrum around 400 ºC of cellulose powder
ionRocket: R.T.→100 ºC/min→600 ºC, DART-SVP temperature: 400 ºC, ionization: DART(+)

【**Keyword**】Cellulose, Biomass, DART-MS

【**Target**】Material development, Chemical industry, Foreign material analysis

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