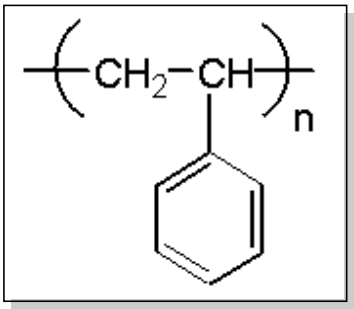
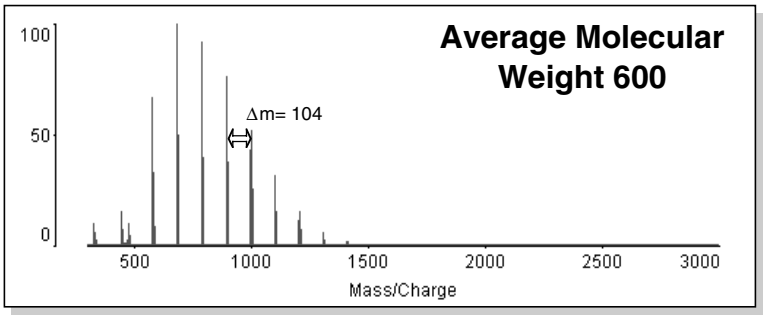
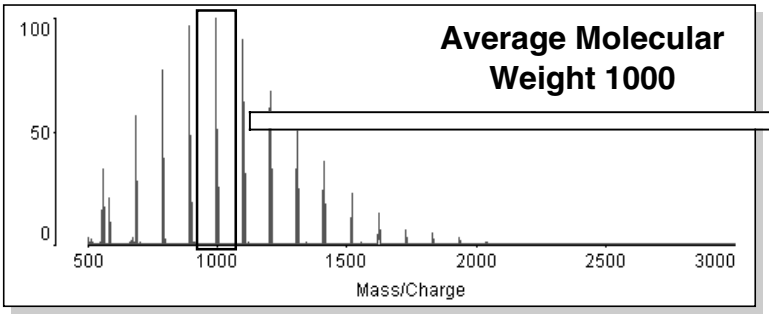
Polystyrene (PS) Analysis using MALDI-TOFMS

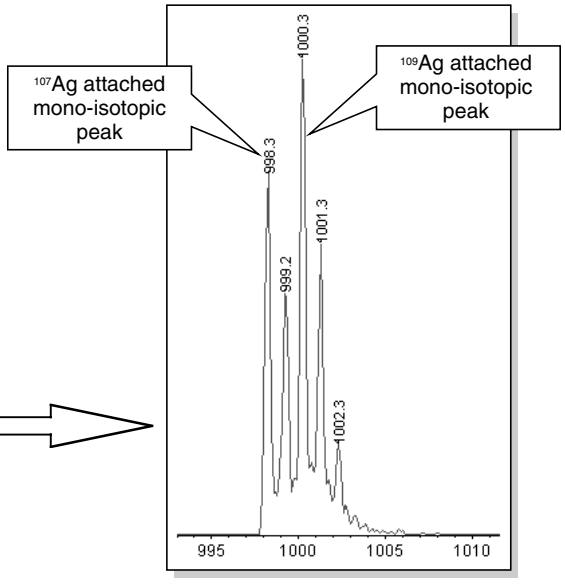
The figures below show the analysis results of polystyrene (PS) with average molecular weights of 600, 1000 and 4000, respectively, using AXIMA-CFR. The PS monomer molecular weight (Δm=104) can be observed as an interval unit of a discrete molecular weight distribution. A resolution of approximately 3000 is achieved in the measurement examples below (linear mode), and isotopic peaks were resolved in the vicinity of molecular weight 1000.

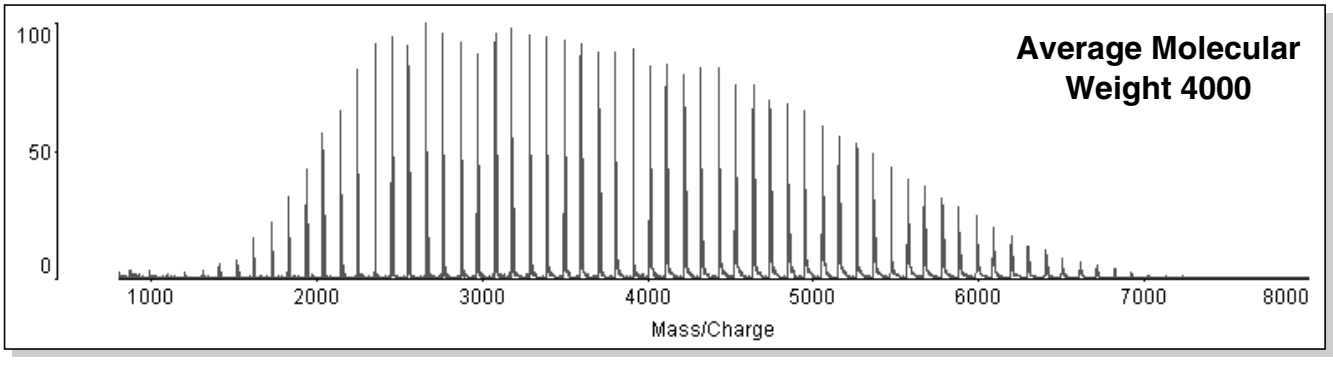


PS Monomer Unit



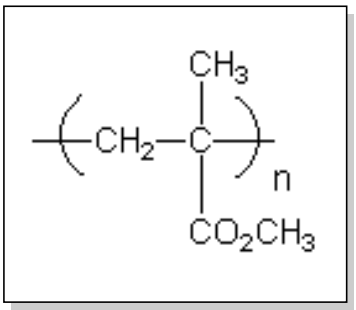






Polymethylmethacrylate Analysis using MALDI-TOFMS

The figure below shows the analysis result of polymethylmethacrylate (PMMA) using AXIMA-CFR. A group of peaks can be seen that have a molecular weight interval (Δm=100) corresponding to the molecular weight of PMMA monomer unit, and the discrete distribution of synthetic polymers is evident. It is possible to analyze the precise molecular ion peaks for relatively low molecular weight synthetic polymers (molecular weights below 10,000). The peaks indicated with filled circles in the enlarged figure to the right are indicative of compounds having a PMMA basic structure, but with different terminal structures (e.g., cyclic polymers).



PMMA Monomer Unit