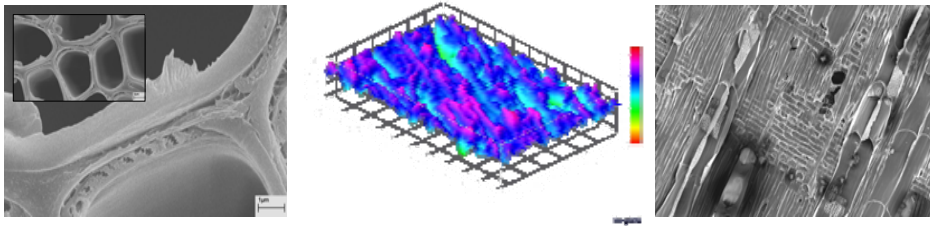


PROGRAM DESCRIPTION

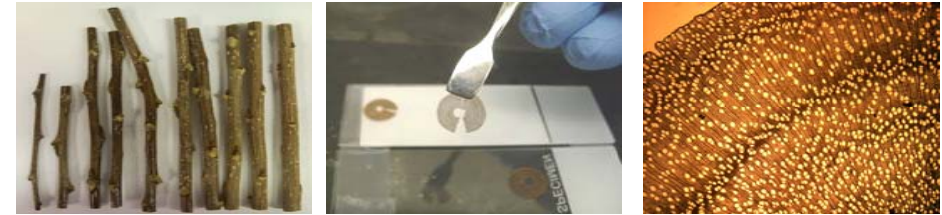
- Understand the complexity and surface chemistry of plant cell wall structure.
- Understand the change of chemistry on the cell wall surface of genetically modified plants and its relationship to recalcitrance.



TECHNICAL DETAILS

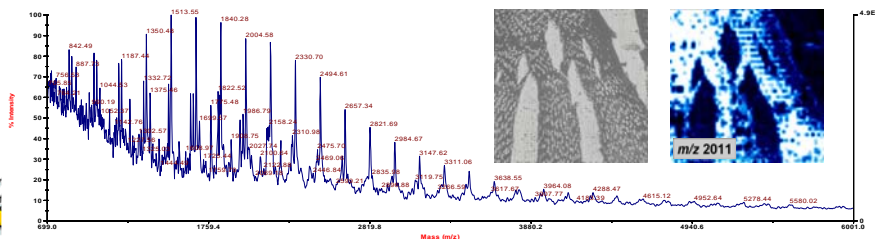


- Non-destructive sectioned biomass sample preparing.
- Time-of-flight Secondary ion mass spectroscopy (ToF-SIMS) analysis of poplar stem.
- MALDI-MS analysis of poplar and switchgrass.
- Image MS and image mapping.



PAYOFF

- The development of surface characterization methods for lignocellulosics.
- Visualization of spatial distribution of lignocellulosics on the surface using image mass spectroscopy.
- The development of image mapping methods using image MS.



KEY ACCOMPLISHMENTS

- Development of 50um sectioned stem with/without treatments.
- Achieved ToF-SIMS image and relative intensity of carbohydrates and lignins in poplar.
- Regenerated image mapping
- Obtained MALDI-MS and Image of cellulose in native poplar.

