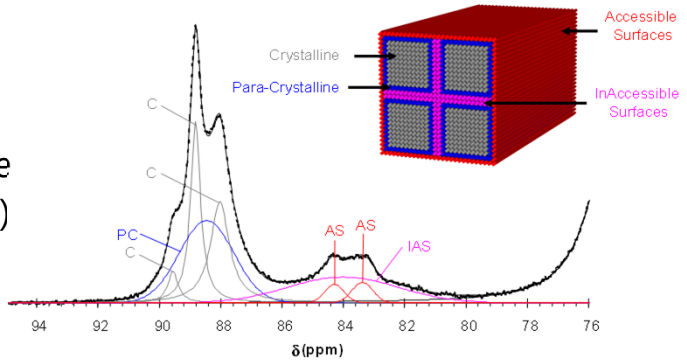
CP/MAS ^{13}C-NMR on cellulose, pulps and modified cellulose nanofibrils

Characterization of the nanostructure of cellulosic materials is used for process development targeting novel material types and their characterization

The CP/MAS ^{13}C-NMR nanostructure characterization give information about:

- General sample purity
- Average lateral cellulose fibril dimensions
- Degree of cellulose crystallinity
- Crystalline forms, cellulose I, cellulose II, etc.
- Average lateral cellulose fibril aggregate dimensions
- Cellulose specific surface area in the water swollen state
- Average fiber wall pore size (combined with FSP results)

Bruker Avance III AQS @ 9.4 T



The C4 region of CP/MAS ^{13}C-NMR spectra recorded on cellulose is used to establish nanostructure measures

Larsson PT et al. Carbohyd. Res. 302:19-25 (1997), Wickholm K et al. Carbohyd. Res. 312:123-129 (1998), Larsson PT et al. Cellulose 20:623–631 (2013)

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