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## Accurate molar masses of cellulose for the determination of degradation rates in complex paper samples

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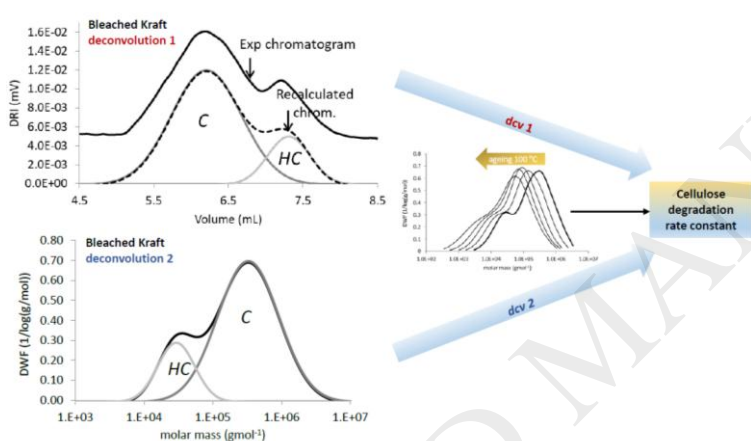
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### Graphical abstract



### Highlights

- For studying degradation kinetics of complex lignocellulosic papers, the cellulose peak in a multimodal MMD needs to be deconvoluted
- To determine  $M_r$  of cellulose without the disturbance of the hemicelluloses or LCC fractions underpinned in the MMD, two deconvolution methods which use different data from the SEC-MALS analysis are proposed
- $M_r$ , kinetic rate constant and  $E_a$  closest to cotton linter paper were obtained with the deconvolution method based on a calibration curve built with pure cellulose samples

### Abstract

Complex cellulosic samples are often difficult to analyse with size-exclusion chromatography. The strong molecular associations of hemicelluloses and lignin with cellulose produce multimodal molar mass distributions (MMD) that are difficult

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