

Supplementary Information (SI) for Chemical Communications.

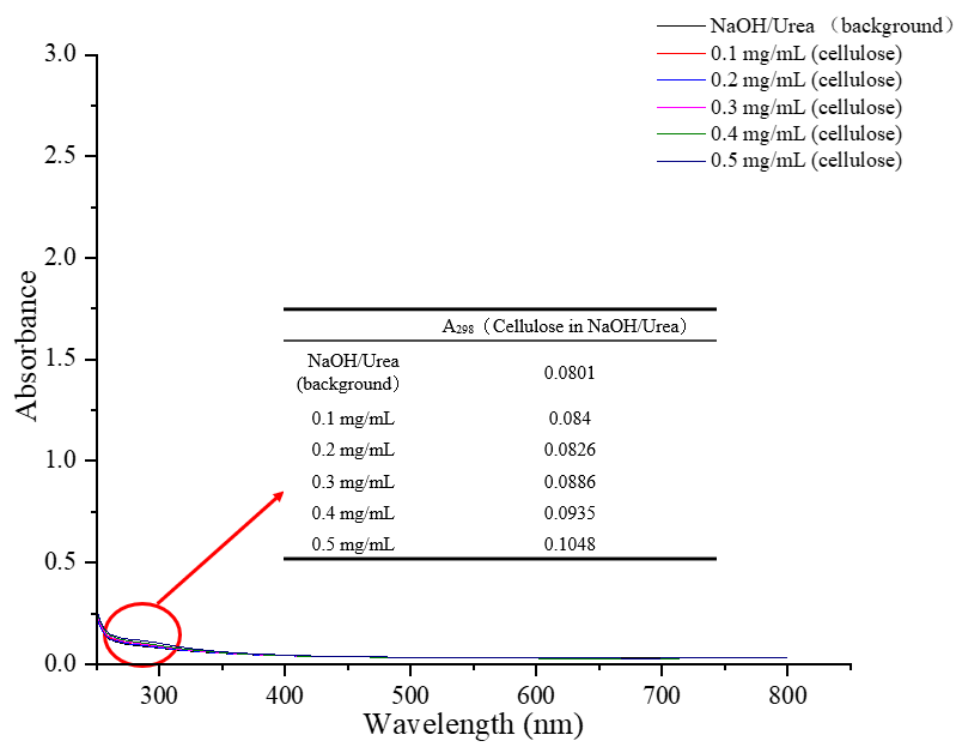
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## **NaOH/Urea aqueous solution facilitates spectroscopic quantitation of lignin in corn stalk**

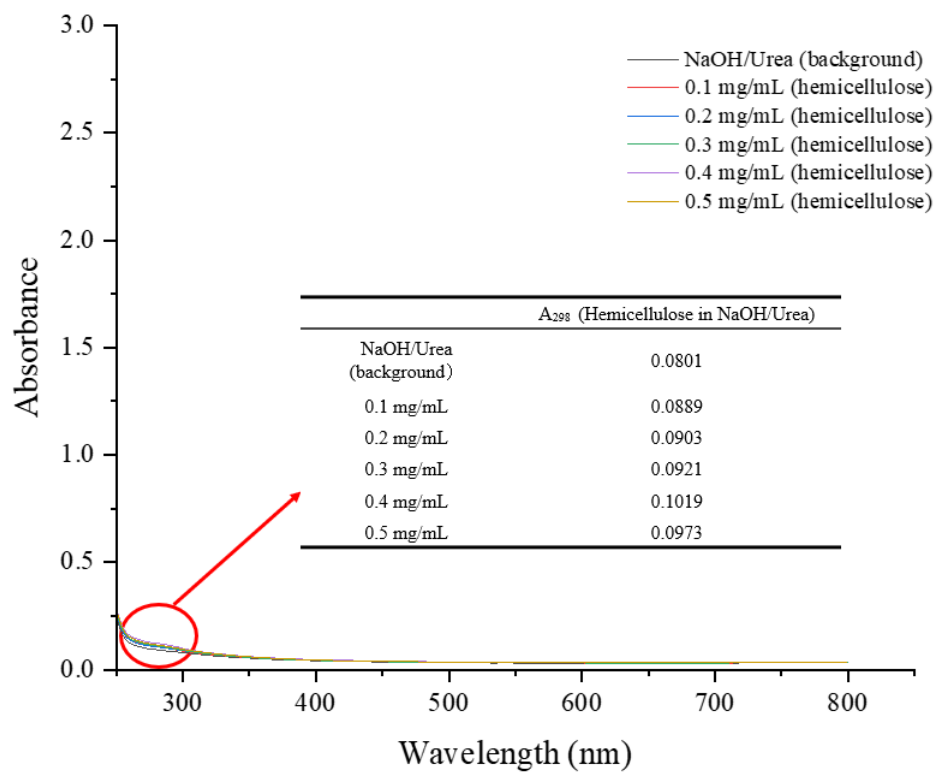
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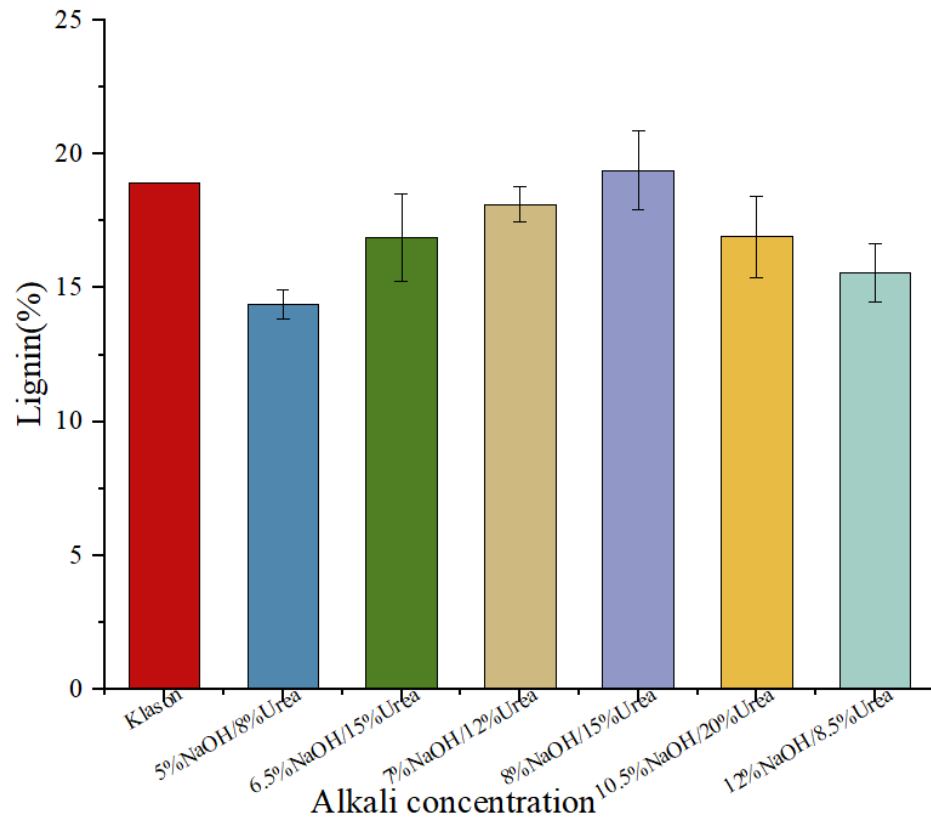
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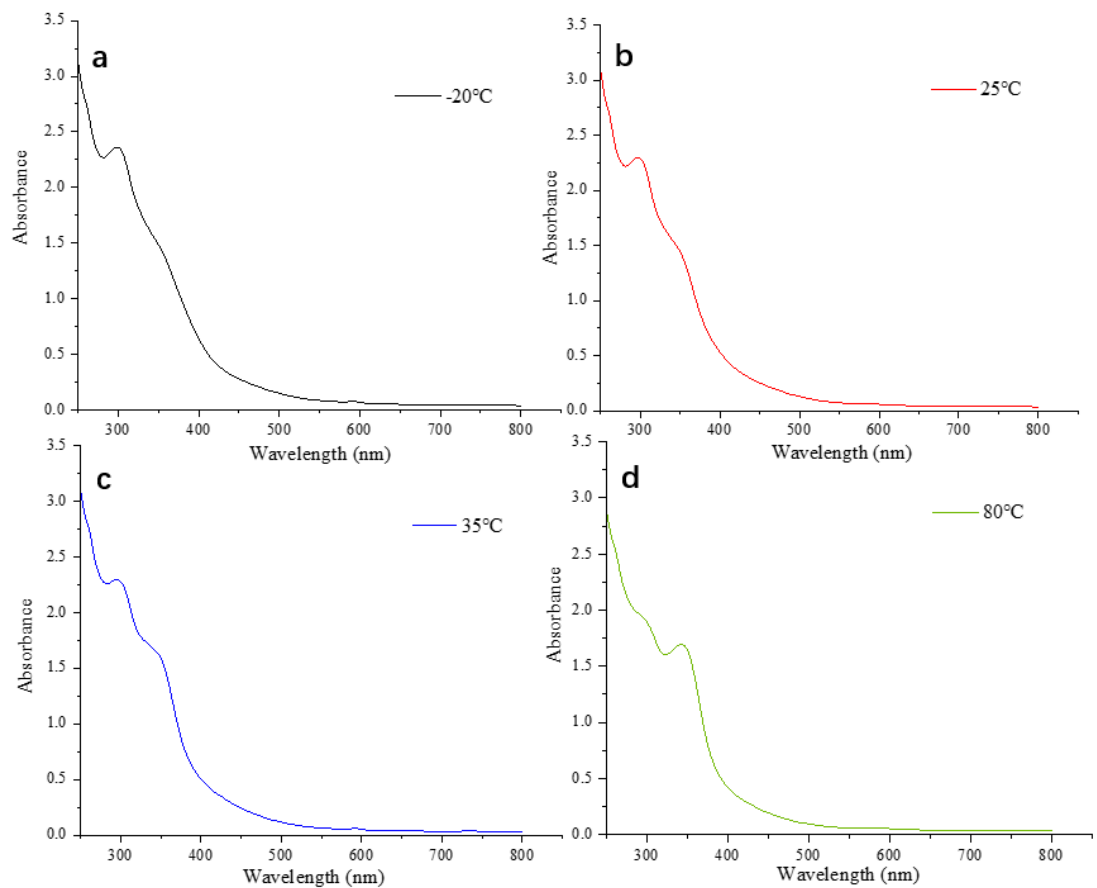
**Figure S1** Full-wavelength scanning (200-800 nm) of standard cellulose in 7% NaOH/12% urea aqueous solution.



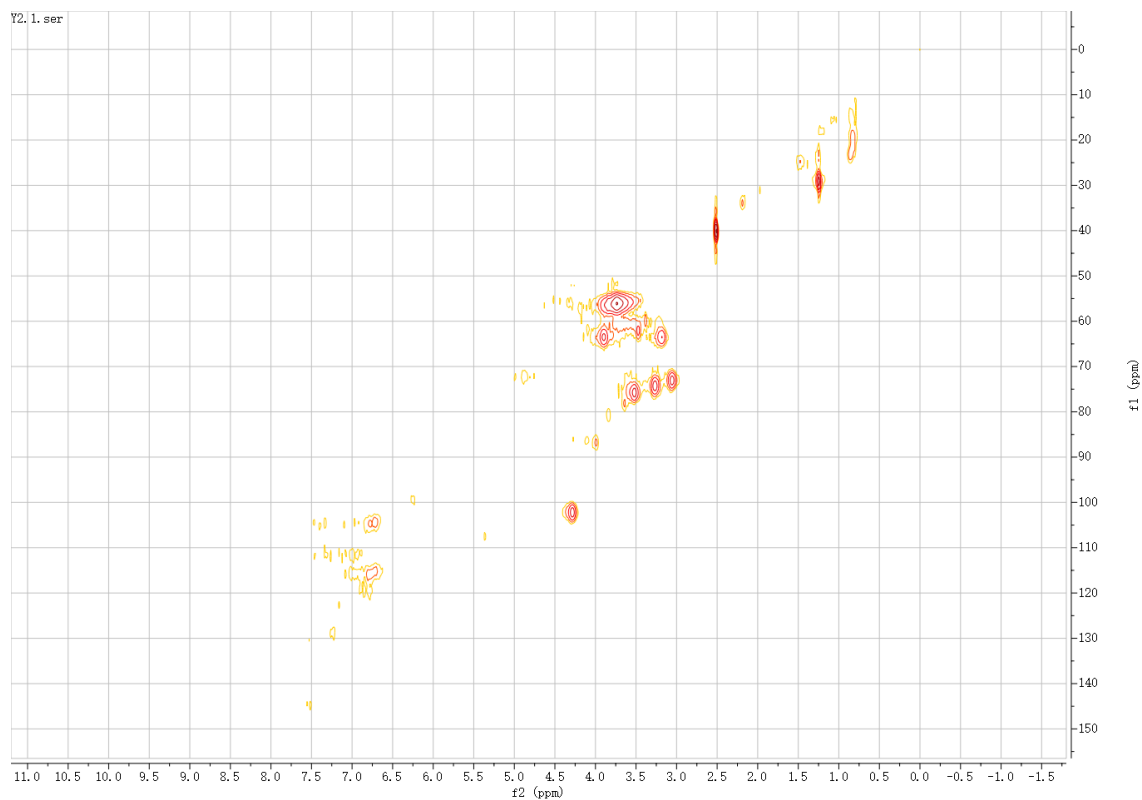
**Figure S2** Full-wavelength scanning (200-800 nm) of standard hemicellulose in 7% NaOH/12% urea aqueous solution.



**Figure S3** The dissolution of lignin in NaOH / urea solution with different ratios.



**Figure S4** Full-wavelength scanning (200-800 nm) of standard lignin in 7% NaOH/12% urea aqueous solution after incubation at different temperatures.



**Figure S5.** 2D-HSQC spectrum of lignin-carbohydrate complex in corn straw.

**Table S1.** Assignment of main  $^{13}\text{C}$ - $^1\text{H}$  cross-signals in HSQC spectra of lignin fractions from corn straw.

label	$\delta_c/\delta_H$	assignment
X <sub>1</sub>	102.2/4.28	C <sub>1</sub> -H <sub>1</sub> in $\beta$ -D-xylopyranoside
X <sub>2</sub>	73.1/3.06	C <sub>2</sub> -H <sub>2</sub> in $\beta$ -D-xylopyranoside
X <sub>3</sub>	74.2/3.27	C <sub>3</sub> -H <sub>3</sub> in $\beta$ -D-xylopyranoside
X <sub>4</sub>	75.7/3.52	C <sub>4</sub> -H <sub>4</sub> in $\beta$ -D-xylopyranoside
X <sub>5</sub>	63.5/3.18	C <sub>5</sub> -H <sub>5</sub> in $\beta$ -D-xylopyranoside
A	63.5/3.19	$\beta$ -O-4'linkages
A'	63.5/3.90	C <sub><math>\alpha</math></sub> -ethoxylation $\beta$ -O-4'linkages