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Table 1. Composition of the pretreated materials at different conditions, which were used for the evaluation of different conditioning strategies. Numbers in parenthesis indicate standard deviation.

Sample	Cellulose (%)	Non-cellulosic residue (%)	Residual salts (%)
5% Na_2CO_3, 150 ℃, 2 h	87.9 (1.2)	3.3 (1.3)	11.9 (2.3)
10% Na_2CO_3, 150 ℃, 2 h	86.1 (3.6)	1.2 (1.0)	13.3 (0.7)
5% Na_2CO_3, 120 ℃, 4 h	86.7 (0.4)	1.9 (0.4)	12.9 (0.4)
5% NaOH, 150 ℃, 2 h	87.1 (1.9)	1.5 (0.1)	9.8 (1.0)

Table 2. Composition of the pretreated materials with 5% Na_2CO_3 at 100 ℃ and different residence times. Numbers in parenthesis indicate standard deviation.

Sample	Cellulose (%)	Non-cellulosic residue (%)	Residual salts (%)
1 h	88.8 (3.2)	5.7 (3.0)	6.0 (0.4)
2 h	91.1 (1.1)	2.4 (0.6)	8.0 (0.7)
4 h	89.8 (2.0)	5.4 (2.6)	7.5 (0.2)
6h	86.7 (8.0)	2.5 (1.2)	8.7 (0.8)
8 h	88.4 (5.6)	3.8 (1.2)	9.1 (1.3)

Table 3. Composition of the pretreated materials with 5% Na_2CO_3 at 150 ℃ and different residence times. Numbers in parenthesis indicate standard deviation.

Sample	Cellulose (%)	Non-cellulosic residue (%)	Residual salts (%)
1 h	90.3 (0.8)	1.5 (0.7)	8.8 (0.4)
2 h	87.9 (1.2)	3.3 (1.3)	11.9 (2.3)
4 h	87.0 (2.5)	1.5 (0.2)	11.5 (4.7)
6 h	90.0 (2.1)	0.8 (0.1)	9.4 (1.2)
8 h	90.3 (2.1)	1.5 (0.1)	8.8 (0.3)

Table 4. Composition of the pretreated materials with 5% Na_2CO_3 at 200 ℃ and different residence times. Numbers in parenthesis indicate standard deviation.

Sample	Cellulose (%)	Non-cellulosic residue (%)	Residual salts (%)
1 h	90.9 (0.4)	0.9 (0.1)	10.3 (1.2)
2 h	85.2 (0.2)	0.9 (0.1)	14.2 (0.1)
4 h	87.0 (1.4)	0.8 (0.1)	12.5 (2.7)
6 h	88.2 (0.5)	0.7 (0.2)	11.9 (5.9)
8 h	88.2 (0.3)	1.2 (0.6)	11.2 (0.5)

Table 5. Composition of the pretreated material with different combinations of salts and actual green liquor from a pulp mill. Numbers in parenthesis indicate standard deviation.

Sample	Cellulose (%)	Non-cellulosic residue (%)	Residual salts (%)
Na_2CO_3 +Na_2S	81.4 (0.3)	0.9 (0.1)	16.4 (1.9)
Na_2CO_3 +NaOH	80.7 (0.8)	0.7 (0.1)	15.1 (3.0)
Na_2CO_3 +Na_2S+NaOH	85.8 (0.2)	0.6 (0.2)	12.2 (0.2)
Green liquor	83.1 (0.2)	1.4 (0.2)	15.5 (0.4)