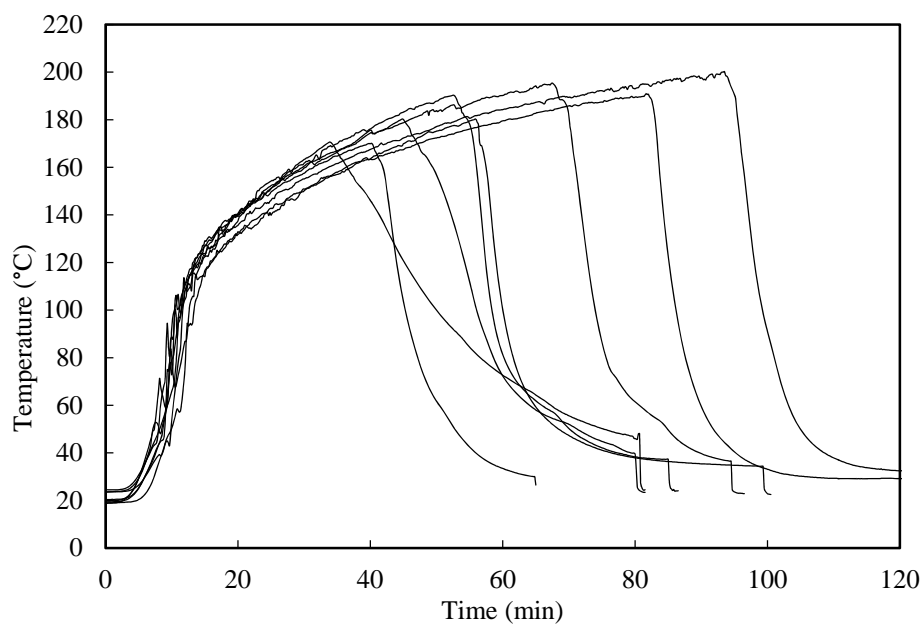
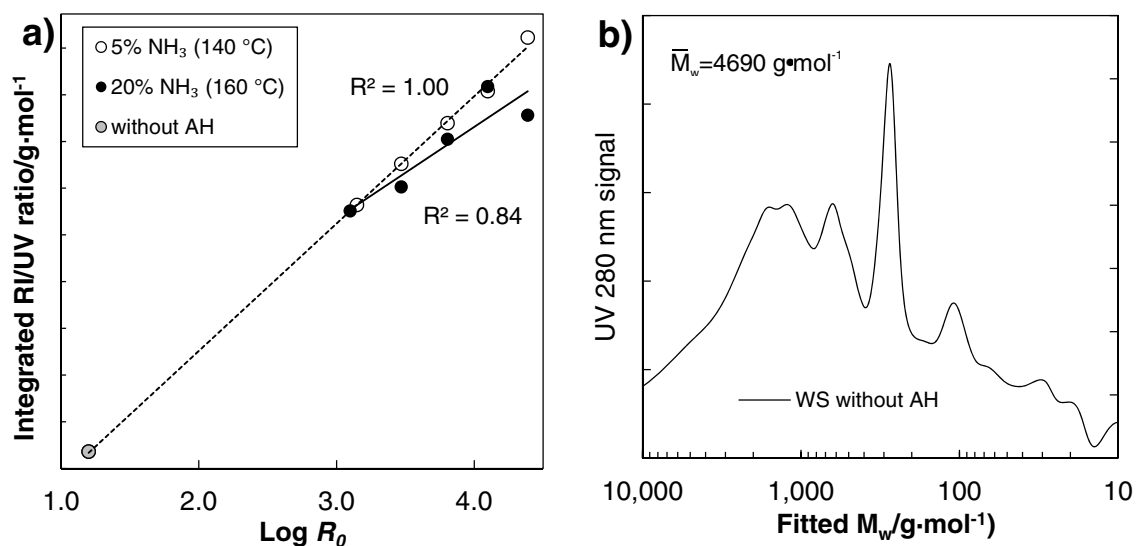


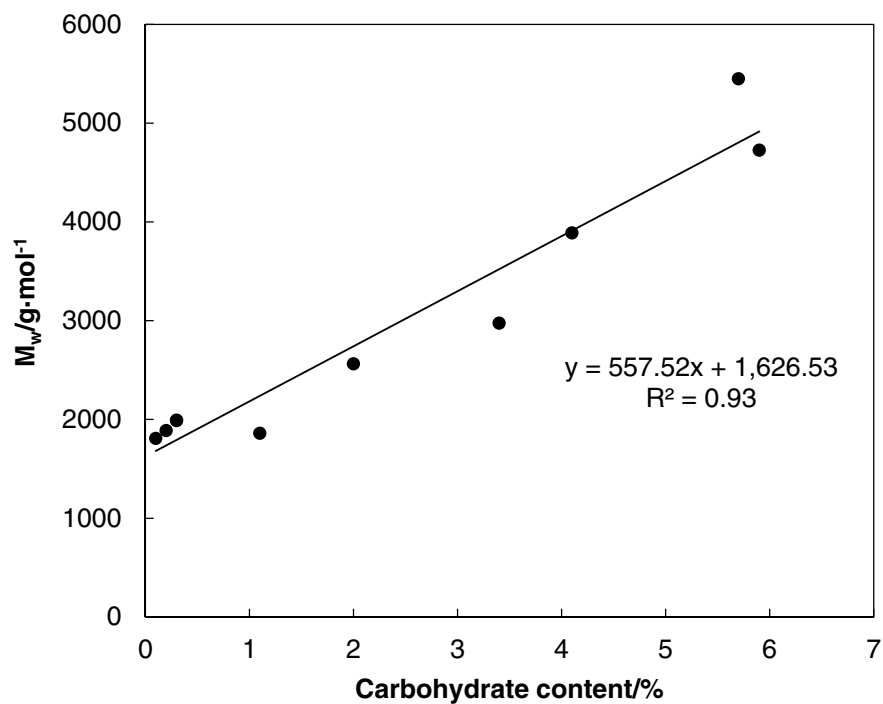
**Electronic Supplementary Information to the manuscript "Autohydrolysis and aqueous ammonia extraction of wheat straw: effect of treatment severity on yield and structure of hemicellulose and lignin".**



**Figure S1.** Temperature profiles of the eight autohydrolysis treatments carried out in a stirred batch autoclave with predetermined target temperatures from 170 °C to 200 °C.



**Fig. S2.** High-performance size-exclusion chromatography (HPSEC) of aqueous ammonia extract from wheat straw without autohydrolysis: (a) ratio of RI to UV signals as a function of Log  $R_0$  (gray marker, severity calculated from 30 min treatment in boiling water). (b) UV 280 nm trace of HPSEC as a function of weight average molar mass.



**Figure S3.** Weight average molar mass ( $M_w$ ) of the aqueous ammonia extracts obtained from extraction of autohydrolysis solid residues at moderate (5% 140 °C) or high (20% 160 °C) intensity conditions.

**Table S1.** Phenolic compounds in autohydrolysis liquors from wheat straw autohydrolysis at different severities (Log  $R_0$ ). The concentration of total phenolics was determined according to the Folin-Ciocalteu method using gallic acid standards, and phenolic monomers by reverse-phase HPLC.

Log $R_0$	Total FC-phenolics (GAE) ( $\mu\text{g/ml}$ )	HPLC phenolic compounds ( $\mu\text{g/ml}$ )								FA+CA of total phenolics (GAE) (%)	Total phenolic monomers of total FC-phenolics (%)
		H	V	S	CA	AV	AS	FA	Total		
3.10	530	ND	7.0	ND	11.9	ND	ND	ND	18.9	2.2	3.6
3.47	1000	ND	14.7	21.8	22.6	ND	ND	18.3	77.4	3.7	7.7
3.81	1460	4.3	29.5	27.3	42.5	15.4	13.4	43.0	175.3	5.8	12.0
4.10	2110	4.1	29.3	21.2	34.6	18.5	11.1	31.9	150.7	3.2	7.1
4.39	2170	5.5	44.0	25.1	16.3	ND	16.7	31.8	139.4	1.5	6.4
3.15	500	ND	8.5	2.3	16.9	ND	ND	8.6	36.3	5.2	7.3
3.52	1750	ND	14.6	22.4	21.8	ND	ND	16.8	75.6	2.1	4.3
4.06	1960	4.2	27.2	13.6	26.8	ND	10.2	31.4	113.4	2.7	5.8