

# Supplementary Materials: Quantitative and Qualitative Analysis of Surface Modified Cellulose Utilizing TGA-MS

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## 1. Thermogravimetric Analyses of All Silane Modified Cellulose Samples

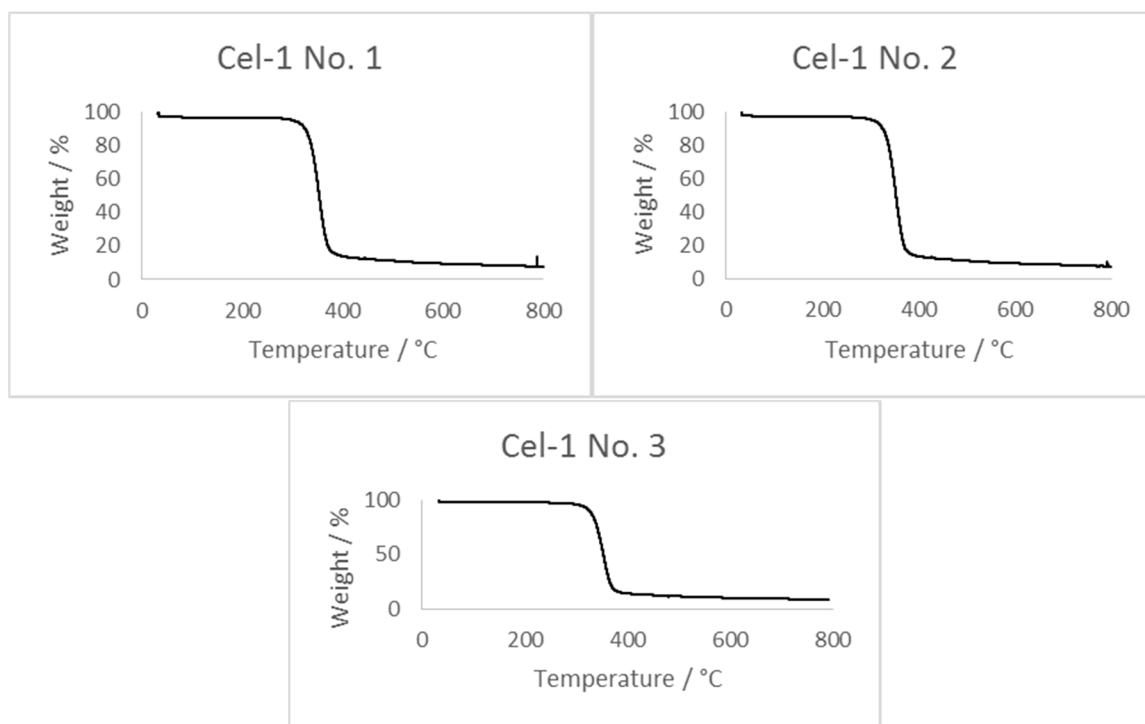


Figure S1. TGA measurements of Cel-1 with  $n = 3$ .

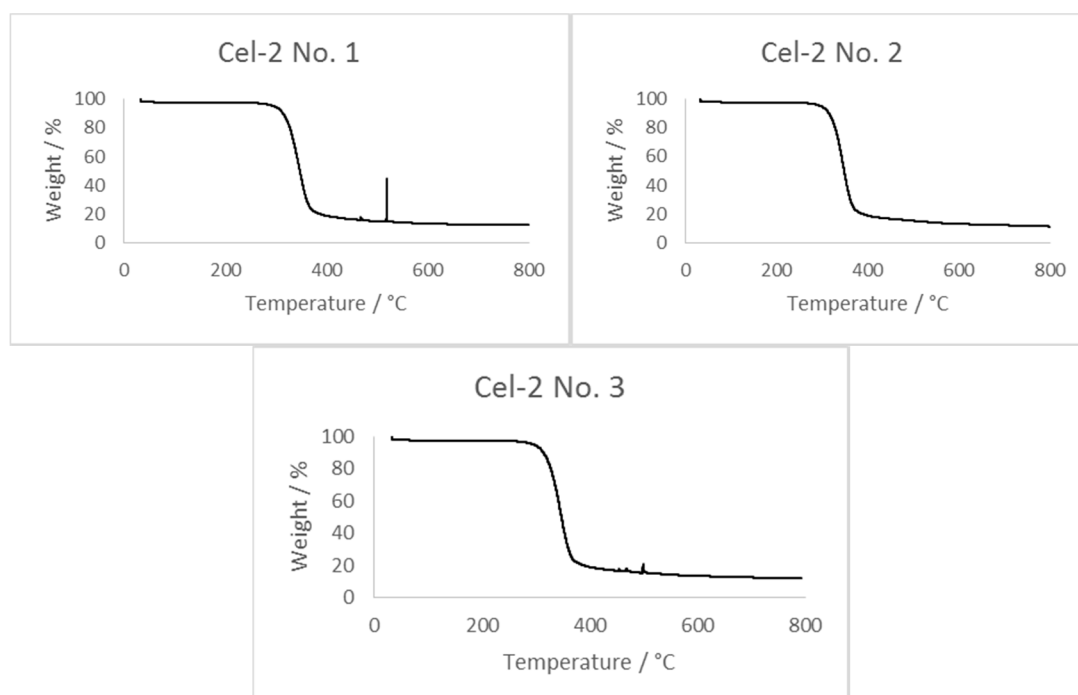
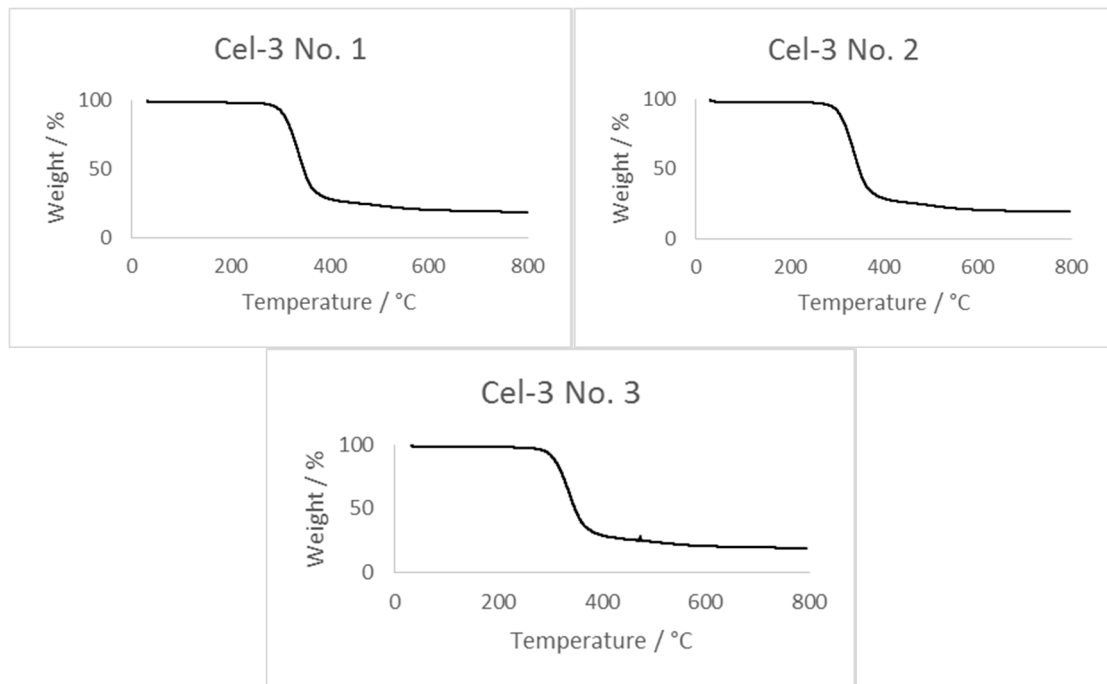
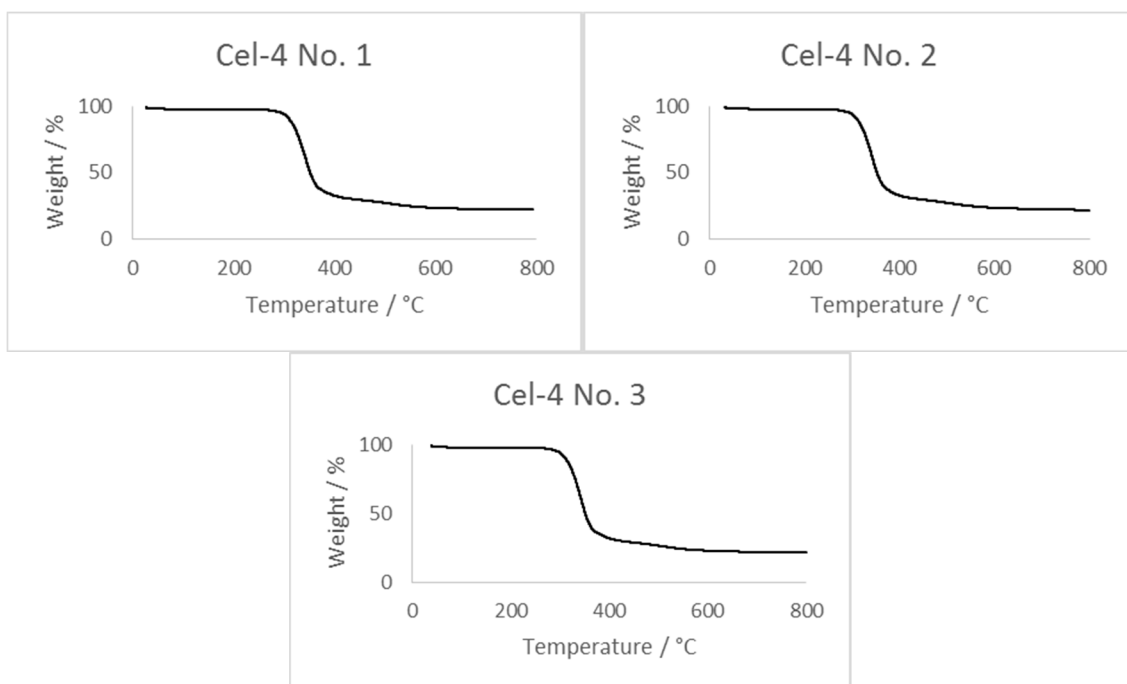


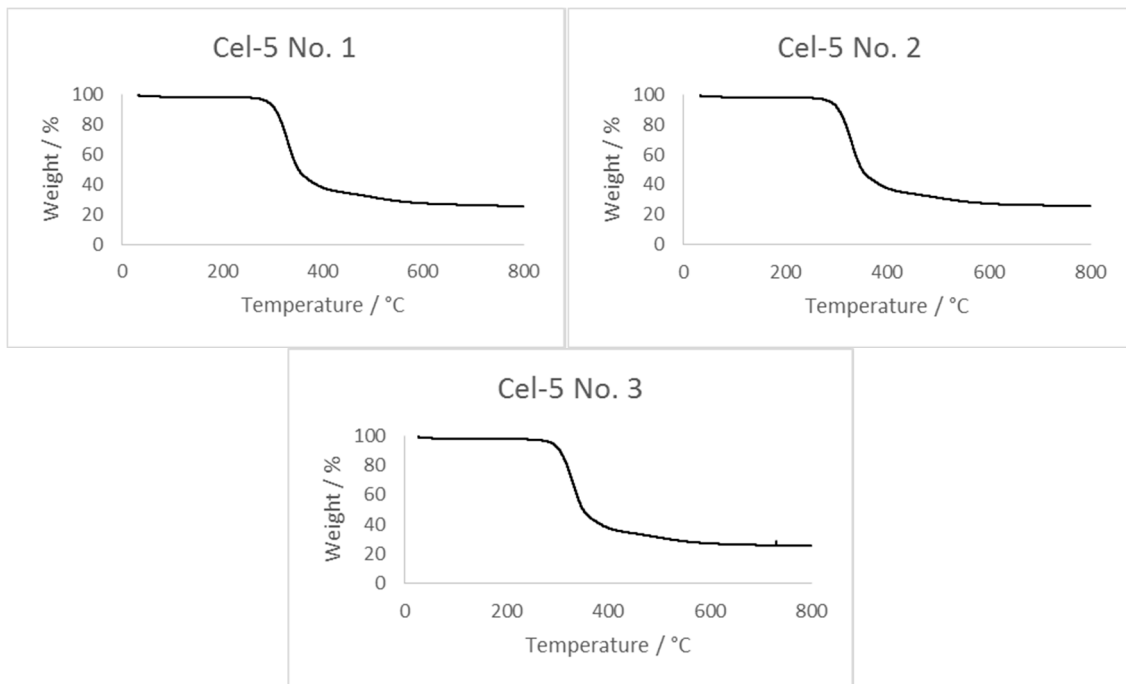
Figure S2. TGA measurements of Cel-2 with  $n = 3$ .



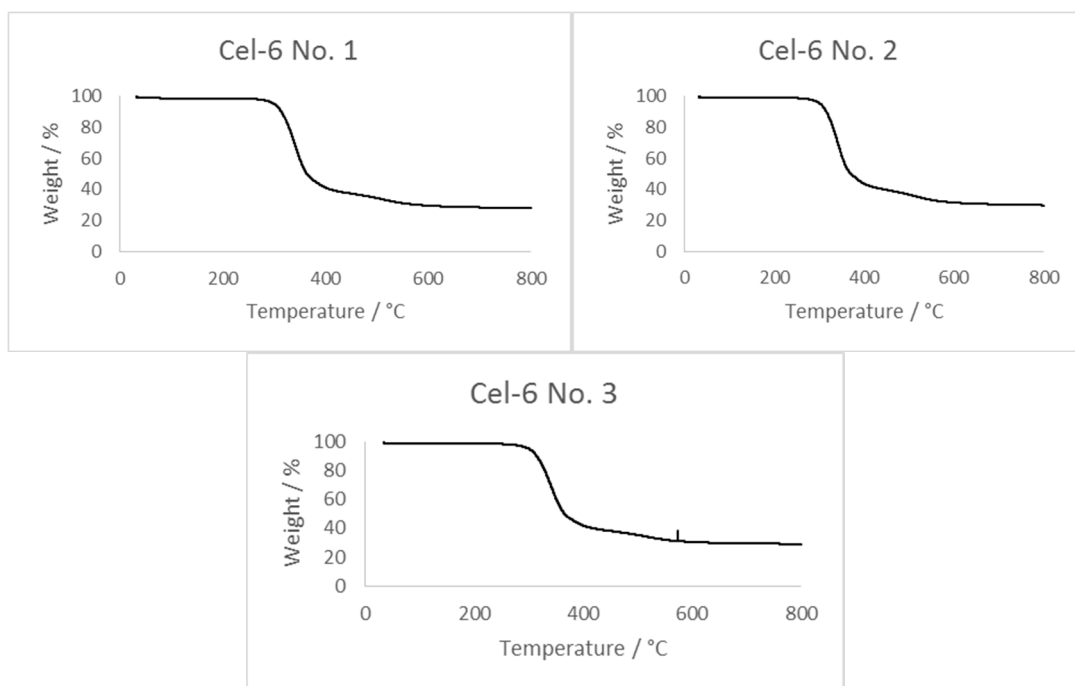
**Figure S3.** TGA measurement Cel-3 with  $n = 3$ .



**Figure S4.** TGA measurement of Cel-4 with  $n = 3$ .

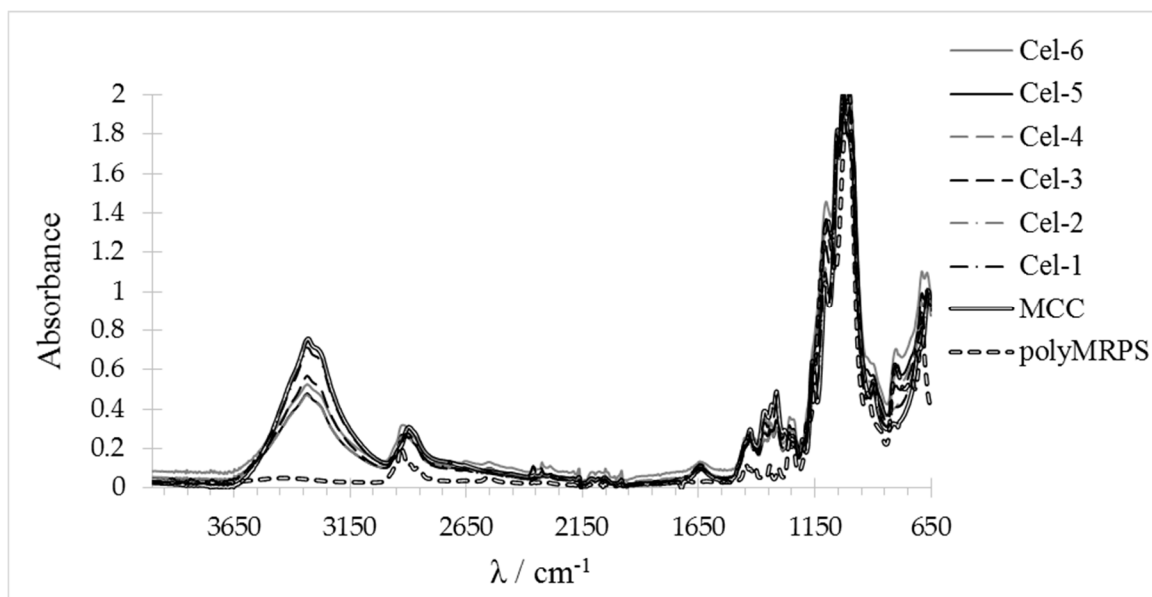


**Figure S5.** TGA measurement of Cel-5 with  $n = 3$ .



**Figure S6.** TGA measurement of Cel-6 with  $n = 3$ .

## 2. FT-IR and Elemental Analyses



**Figure S7.** Overview FT-IR spectrum of the references MCC and polyMRPS and silane modified samples Cel-1 to Cel-6.

**Table S1.** Elemental Analysis Values.

	M/g mol <sup>-1</sup>	Cel-1	Cel-2	Cel-3	Cel-4	
<b>C</b>	12.0107	39.39	37.92	36.4	35.57	wt %
<b>H</b>	1.00794	6.46	6.4	6.31	6.14	wt %
<b>O</b>	15.9994	48.4	43.5	41.9	38.3	wt %
<b>S</b>	32.065	2.66	4.7	6.87	8.68	wt %
<b>Si</b>	28.0855	2.08	4.12	6.01	7.54	wt %
Σ		98.99	96.64	97.49	96.23	wt %
<b>S</b>	32.065	0.830	1.466	2.143	2.707	mmol/g
<b>Si</b>	28.0855	0.741	1.467	2.140	2.685	mmol/g
Σ(Si + S)/2		0.785	1.466	2.141	2.696	mmol/g