Electronic Supplementary Information

Hollow Microtubes Made of Carbon, Boron and Gold: Novel Semiconducting Nanocomposite Material for Applications in Electrochemistry and Temperature Sensing

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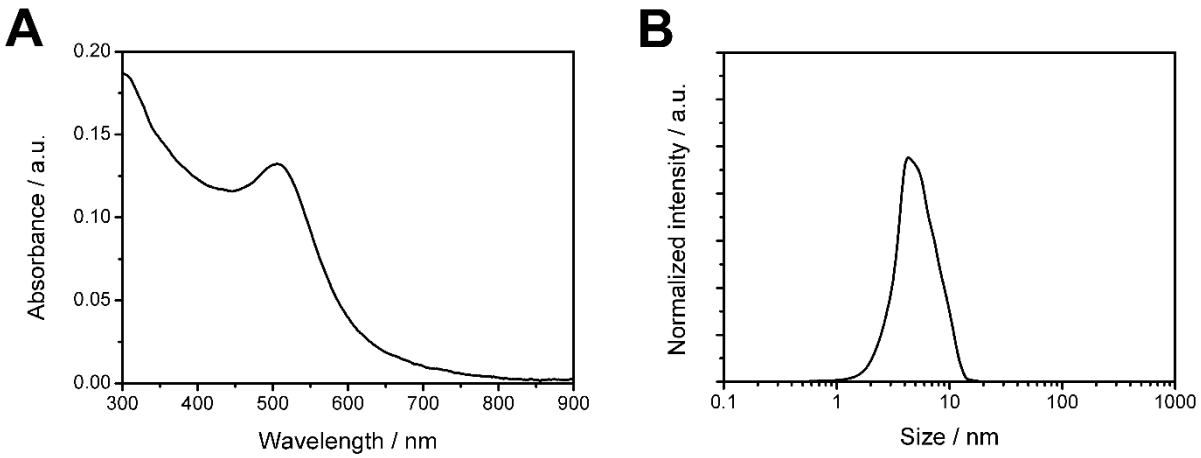

Fig. S1. Results of the A) UV-Vis and B) DLS measurement of the synthetized AuNPs, which were further used for surface modification of cellulose and nitrocellulose fibers. The diameter of AuNPs determined by means of both methods was around 4.2 nm.

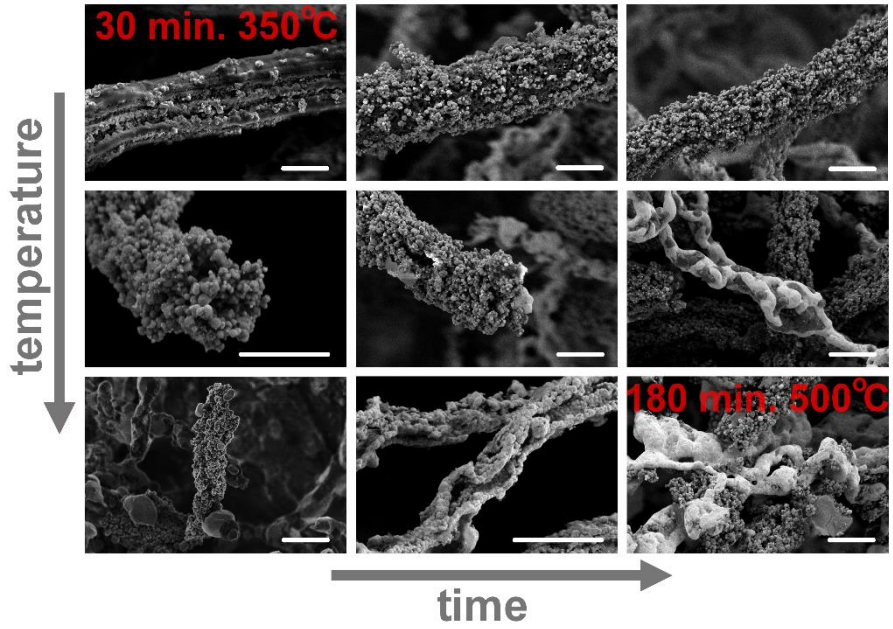

Fig. S2. SEM images revealing the morphology of the carBOA material obtained using cellulose fibers removed upon calcination. Samples were obtained for three different calcination temperatures (350, 400, and 500 ºC) and three calcination times (30, 120, and 180 min.)

Element	Series	unn. C [wt.%]	norm. C [wt.%]	Atom. C [at.%]	Error (3 Sigma) [wt.%]
Carbon	K-series	47.41	68.66	82.27	16.47
Gold	M-series	5.90	8.54	0.62	0.76
Oxygen	K-series	5.35	7.75	6.97	2.50
Chlorine	K-series	4.45	6.44	2.62	0.53
Sodium	K-series	3.86	5.59	3.50	0.81
Boron	K-series	2.09	3.02	4.03	1.53
Total:		69.06	100.00	100.00	

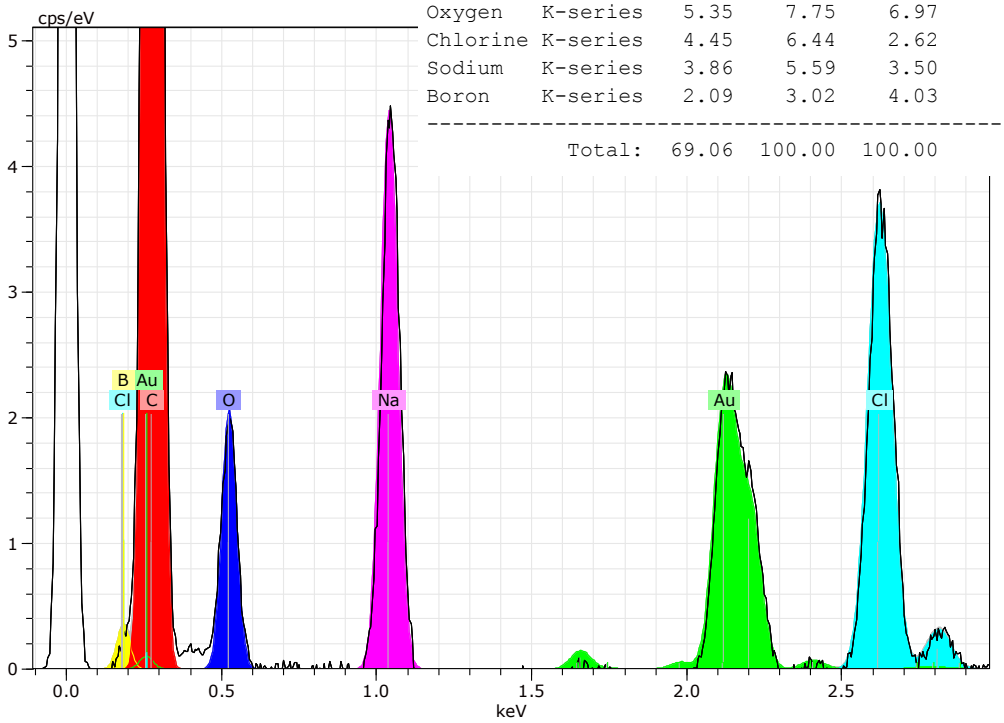

Fig. S3. EDS spectrum of the saturated carBOA nanocomposite.