

### Electronic Supplementary Information (ESI)

Element analysis was conducted on the surface of copper-containing nanoparticles by using energy dispersive X-ray spectroscopy (EDS).

#### Test 1

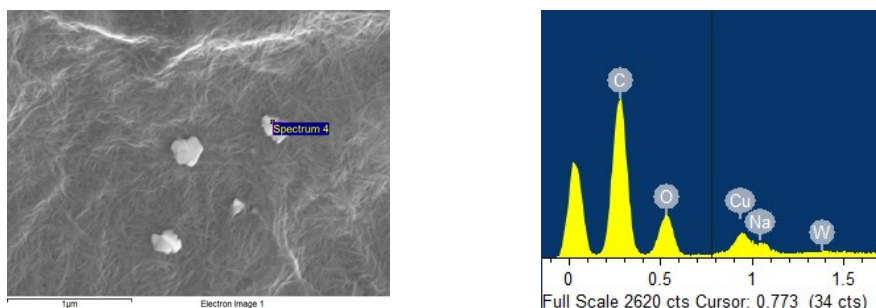


Fig. 1: SEM image (left) and EDS analysis (right) of TOCNF surface after Cu(II) sorption (analysis point one)

Element	Weight%	Atomic%
C K	63.59	73.06
O K	29.49	25.44
Cu L	6.91	1.50
Totals	100.00	

#### Test 2

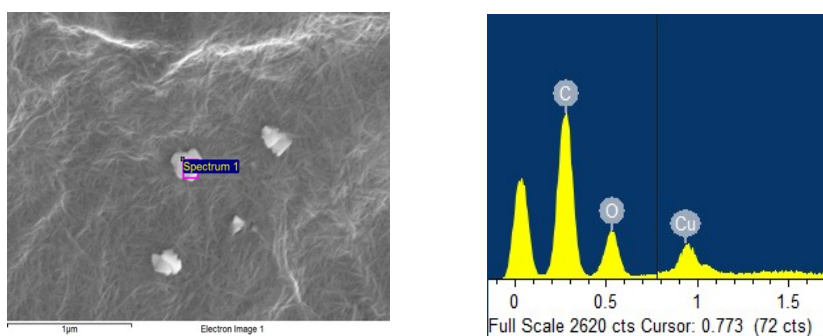


Fig. 2: SEM image (left) and EDS analysis (right) of TOCNF surface after Cu(II) sorption. (analysis point two)

Element	Weight%	Atomic%
C K	62.37	73.34
O K	27.71	24.46
Cu L	9.92	2.20
Totals	100.00	