Supplementary information

Co-exfoliation and Fabrication of Graphene Based Microfibrillated Cellulose Composites - Mechanical, Thermal Stability and Functional Conductive Properties

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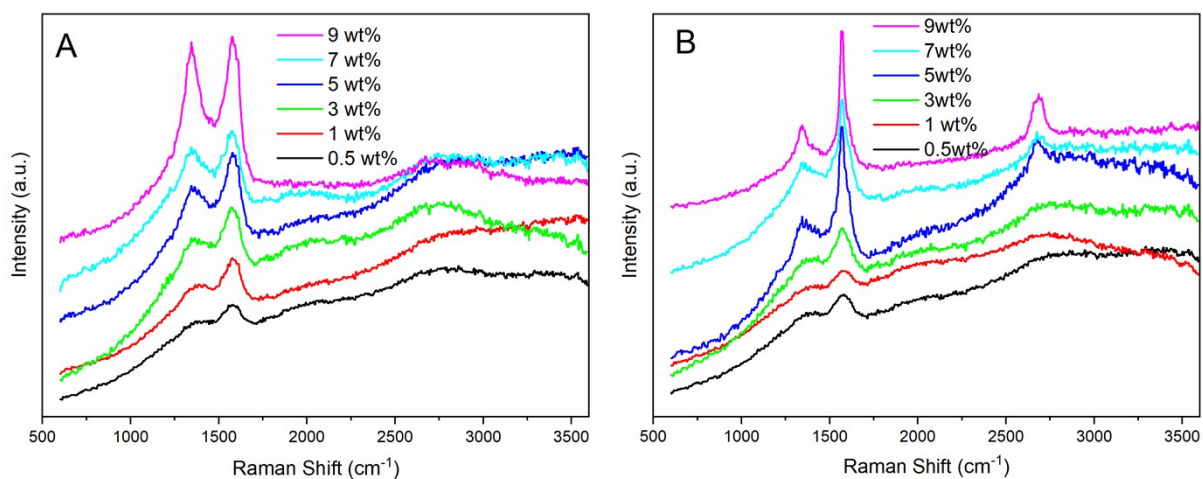thaddeus.maloney@aalto.fi (T. Maloney)

Figure S1 Raman analysis of (A) MFC/RGO and (B) MFC/graphene composites at different filler loadings

Table S1 Raman parameters of the graphite and RGO powders together with their respective composites

Filler loading	MFC/graphene					MFC/RGO				
	D-band		D-band		I_D/I_G	D-band		G-band		I_D/I_G
	Position /cm^{-1}	Intensity /a.u	Position /cm^{-1}	Intensity /a.u		Position /cm^{-1}	Intensity /a.u	Position /cm^{-1}	Intensity /a.u	
5 wt%	1 342.61	110.41	1 574.90	296.38	0.37	1 362.23	307.30	1 591.59	494.62	0.62
7 wt%	1 340.16	147.01	1 570.13	409.53	0.36	1 362.23	350.59	1 574.90	445.95	0.79
9 wt%	1 345.07	164.27	1 567.75	618.55	0.27	1 337.70	349.75	1 577.29	405.98	0.86

Table S2 Comparative XPS data for graphite and RGO showing the presence of functional groups in RGO

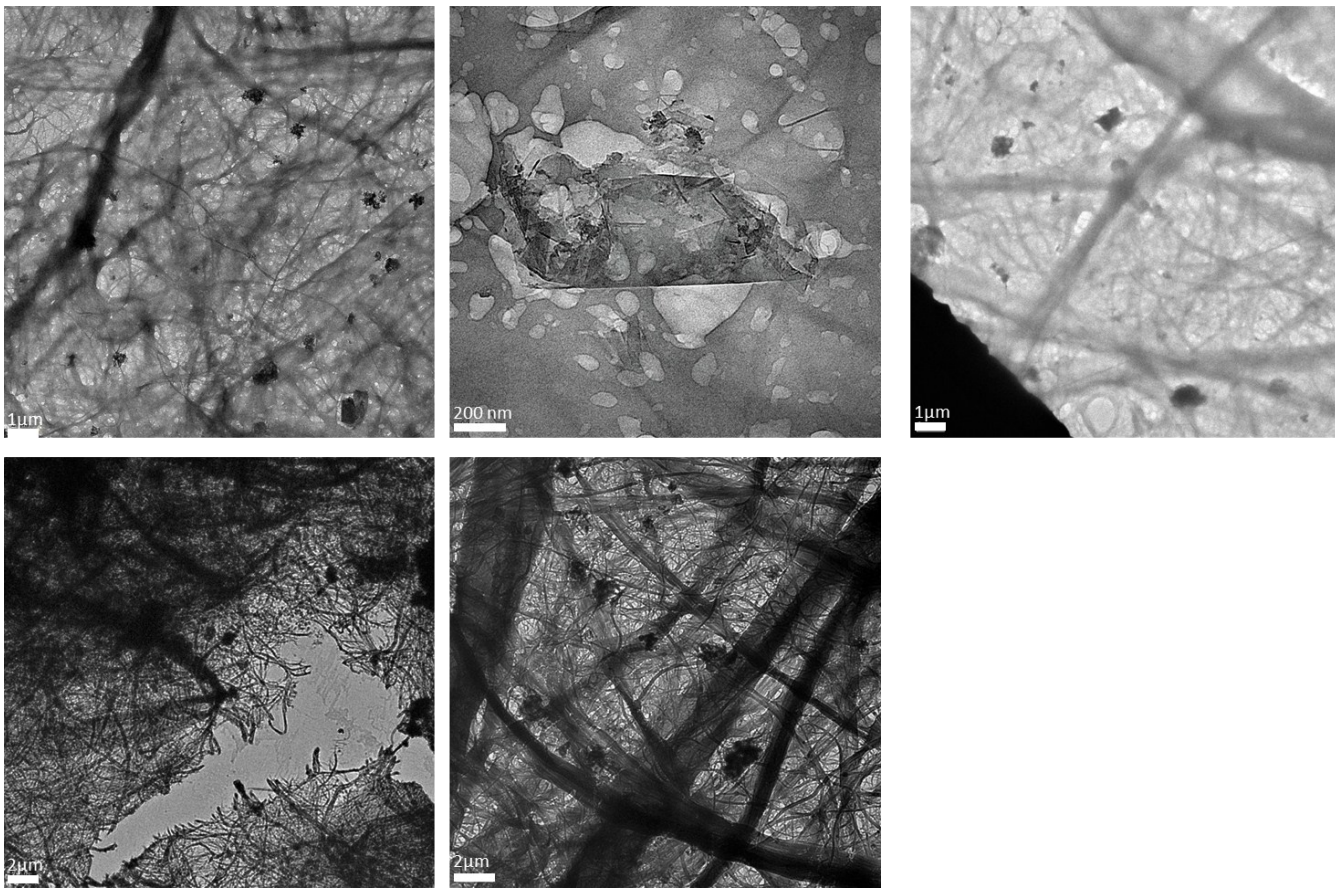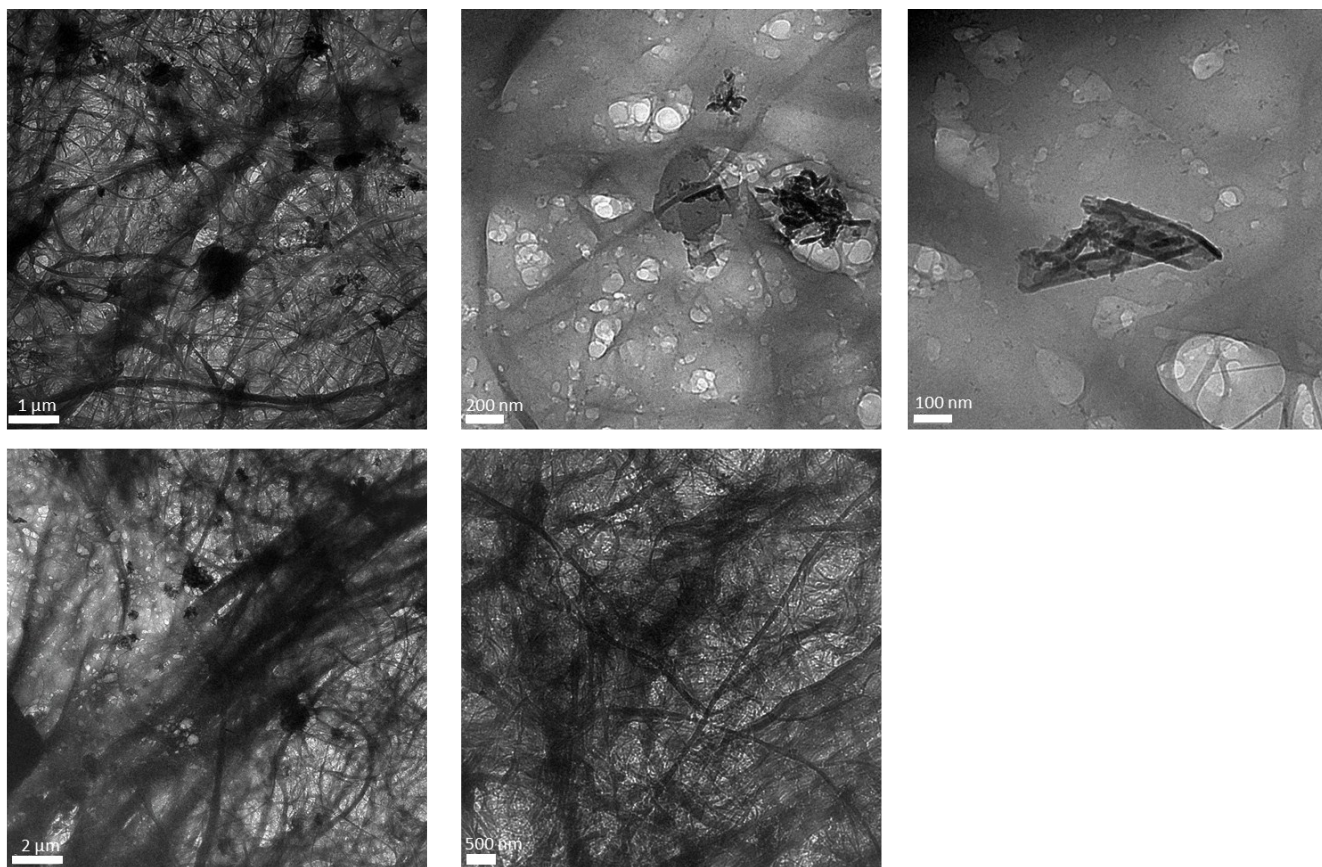| Samples	Elemental composition, atomic%					Functional groups, atomic%			
	C	O	N	S	Si	CC	CO	COO	COOO
RGO	79.5	20.4	0.0	0.0	0.2	59.8	21.6	10.6	7.9
Graphite	94.9	4.5	0.6	0.0	0.0	>98	-	-	-

Figure S2 TEM images of graphene embedded in the MFC matrix.

Figure S3 TEM images of RGO embedded in the MFC matrix.