

Table S1. C/O ratios according to XPS results and

Samples	Carbon (%)	Oxygen (%)	C/O ratio
GNP	361644	144321	2.5
Si:GNP=1:5	220471	350888	0.6
Si:GNP=1:10	204405	249117	0.8

Table S2. Raman peak intensities, ID/IG ratios and crystallinity index of GNP, Si-GNP=1:5 and Si:GNP=1:10 hybrid additives

Samples	D peak intensity (a.u.)	G peak intensity (a.u.)	ID/IG	Crystallinity
GNP	2670.6	2754.5	0.97	24.1
Si:GNP=1:5	3043.9	3100	0.98	27.8
Si:GNP=1:10	3894.2	4111.6	0.94	23.3