

## Electronic supplementary information

### The chemical functionalization of graphene nanoplatelets through solvent-free reaction

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Table S1: XPS atomic concentration and atomic ratio of the chemical elements on the pristine and functionalized HC11 at different temperature reactions

	At (%)			ratio		
	C	N	O	[N]:[O]	[N]:[C]	[O]:[C]
HC11	98.35	-	1.65	-	-	0.017
f-HC11 180	87.32	5.00	7.68	0.65	0.057	0.088
f-HC11 200	84.47	6.24	9.29	0.67	0.074	0.109
f-HC11 220	84.75	6.77	8.48	0.80	0.079	0.100
f-HC11 250	86.02	6.77	7.21	0.94	0.078	0.084

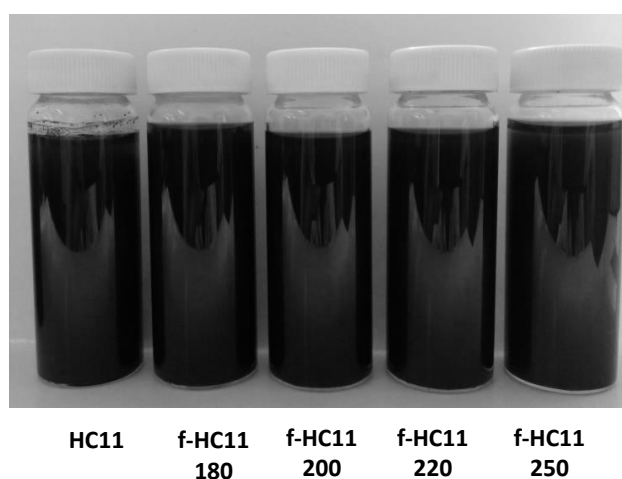


Figure S1: Water suspensions of the pristine and functionalized HC11

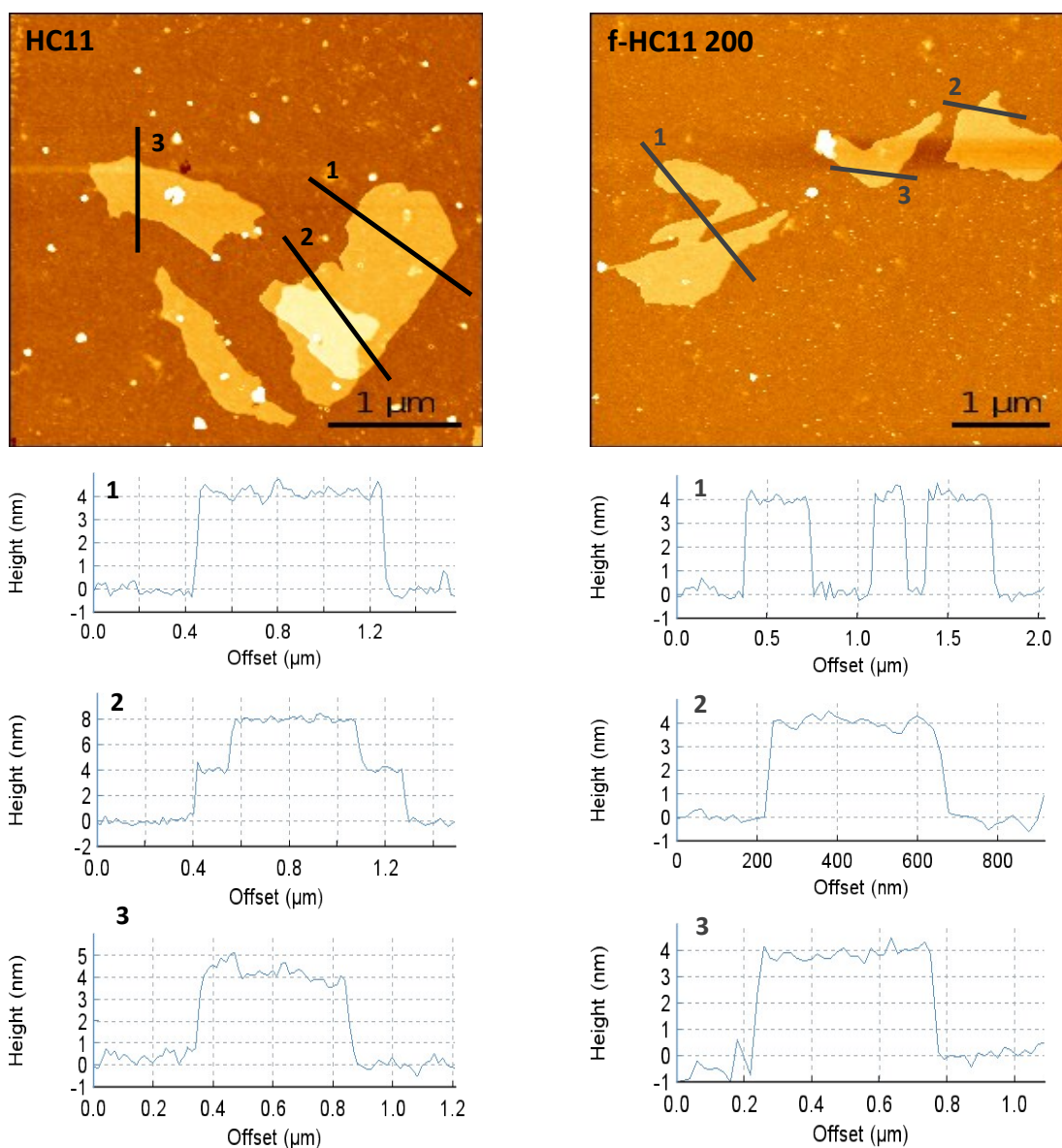


Figure S2: AFM images of the pristine HC11 and f-HC11 200 and the corresponding height profiles of the selected sections 1, 2 and 3.

Table S2: XPS atomic concentration and atomic ratio of the chemical elements on the pristine and functionalized HC11 at different GNP:IDA ratios.

	At (%)			ratio		
	C	N	O	[N]:[O]	[N]:[C]	[O]:[C]
HC11	98.35	-	1.65	-	-	0.017
f-HC11 200-1.0	84.47	6.24	9.29	0.67	0.074	0.109
f-HC11 200-1.5	81.24	8.05	10.71	0.75	0.099	0.132
f-HC11 200-2.0	79.89	8.71	11.40	0.76	0.109	0.143