

Fluororaphenes via Thermal Exfoliation of Graphite Oxide in SF₆, SF₄ and MoF₆ atmospheres

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Table S-1. Standard deviation of Raman spectra measurements (n=5).

Graphene label	Standard Deviation
HU-F:[SF6/800°C]	0.050
HO-F:[SF6/800°C]	0.025
ST-F:[SF6/800°C]	0.055
HU-F:[MoF6]	0.024
HU-F:[SF4/800°C]	0.062
ST-F:[SF6/1000°C]	0.123
MW-F:SF6	0.006
HO	0.051
HU	0.072
ST	0.015

Table S-2. Resulting data from deconvolution of HR-XPS of C1s peak of fluorinated graphenes.

Materials								
MW - SF6	Bond Types	C=C	C-C	C-O	C=O		C-F	C-F2
	Binding energies	284.46 eV	285.41 eV	286.32 eV	287.51 eV		288.76 eV	290.33 eV
	% content	54.06%	19.52%	13.03%	5.78%		3.61%	4.00%
HO: [SF6/800]	Bond Types	C=C	C-C		C=O	Csp2-F	C-F	
	Binding energies	284.46 eV	285.36 eV		286.84 eV	288.21 eV	290.07 eV	
	% content	54.06%	30.39%		6.96%	3.45%	5.14%	
HO	Bond Types	C=C	C-C	C-O	C=O	O-C=O	π-π	
	Binding energies	284.48 eV	285.66 eV	286.69 eV	287.76 eV	288.9 eV	290.34 eV	
	% content	67.14%	14.15%	6.83%	3.17%	1.82%	6.91%	
HU: [SF6/800]	Bond Types	C=C	C-C		C=O	Csp2-F		C-F2
	Binding energies	284.44 eV	285.33 eV		286.53 eV	287.90 eV		290.21 eV
	% content	56.75%	22.76%		9.44%	3.99%		7.05%
HU: [SF6/800]	Bond Types	C=C	C-C	C-O		Csp2-F		C-F2
	Binding energies	284.47 eV	285.37 eV	286.46 eV		287.88 eV		290.24 eV
	% content	57.45%	21.63%	8.99%		5.59%		6.33%
HU: [MoF6]	Bond Types	C=C	C-C	C-O		Csp2-F	C-F	C-F2
	Binding energies	284.5 eV	285.48 eV	286.53 eV		287.65 eV	289.20 eV	291.16 eV
	% content	54.21%	21.24%	8.67%		5.55%	5.32%	5.01%
HU	Bond Types	C=C	C-C	C-O	C=O	O-C=O	π-π	
	Binding energies	284.49 eV	285.73 eV	286.80 eV	287.97 eV	289.11 eV	290.84 eV	
	% content	67.97%	14.60%	6.41%	3.18%	1.84%	6.18%	
ST: [SF6/800]	Bond Types	C=C		C-O	C=O		C-F	
	Binding energies	284.5 eV		285.59 eV	286.7 eV		289.57 eV	
	% content	66.16%		14.74%	7.92%		11.18%	
ST: [SF6/1000]	Bond Types	C=C		C-O	C=O			C-F2
	Binding energies	284.5 eV		285.59 eV	286.65 eV			290.58 eV
	% content	68.63%		11.74%	12.90%			6.73%
ST	Bond Types	C=C	C-C	C-O	C=O	O-C=O	π-π	
	Binding energies	284.54 eV	285.71 eV	286.69 eV	287.64 eV	288.72 eV	290.53 eV	
	% content	69.31%	13.17%	6.54%	2.52%	2.21%	6.25%	

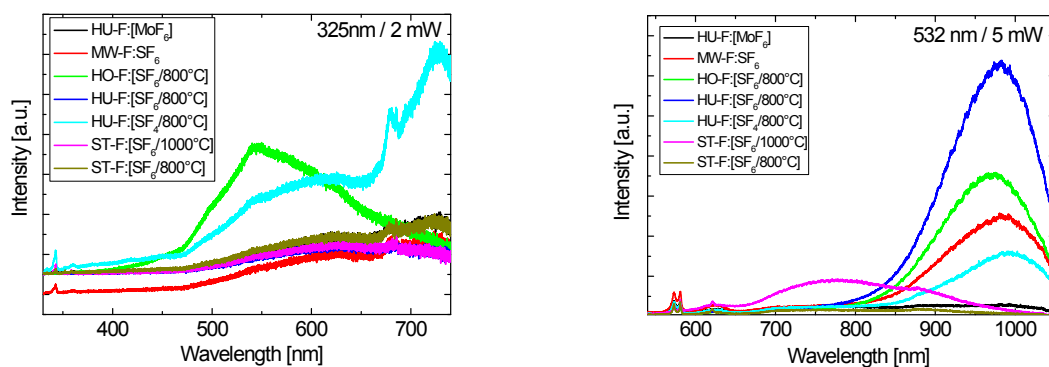
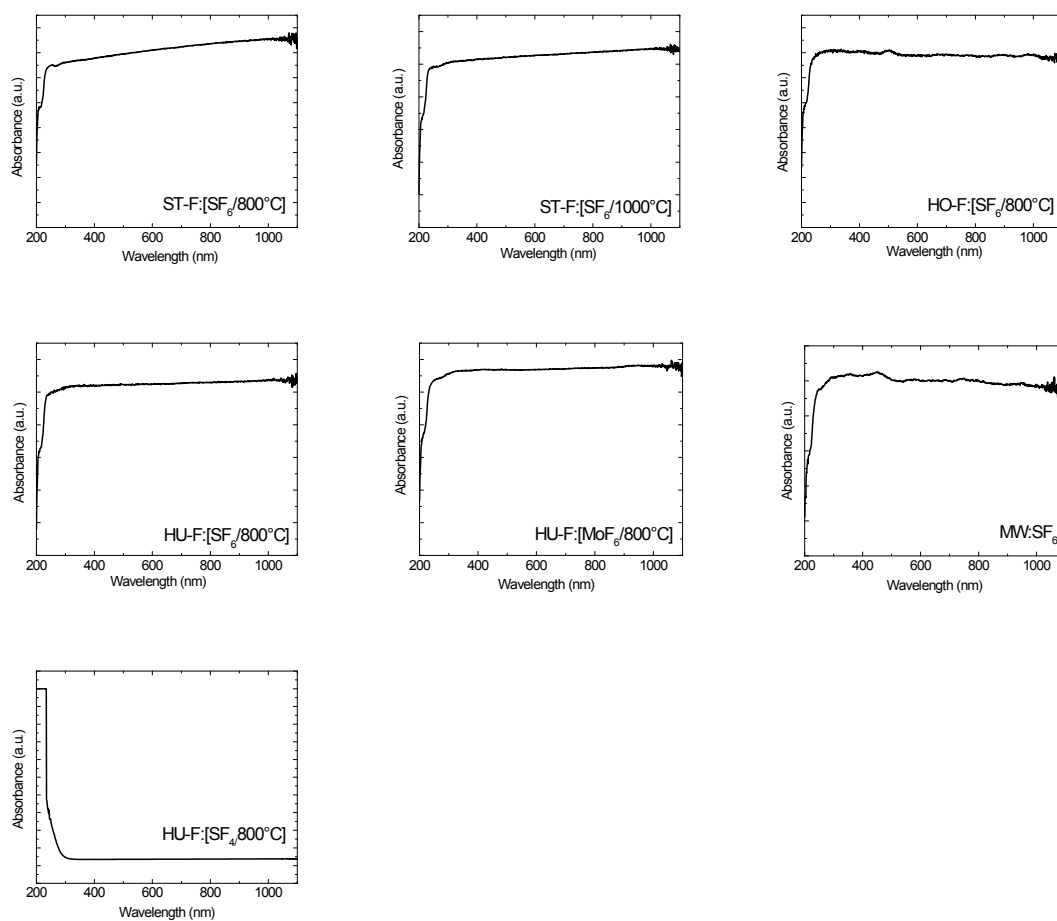


Figure S-1. The photoluminescence spectra of F-doped graphenes measured with 325 nm laser (left image) and 532 nm laser (right image).



Figures SI-2. The absorbance spectra of F-doped graphenes.

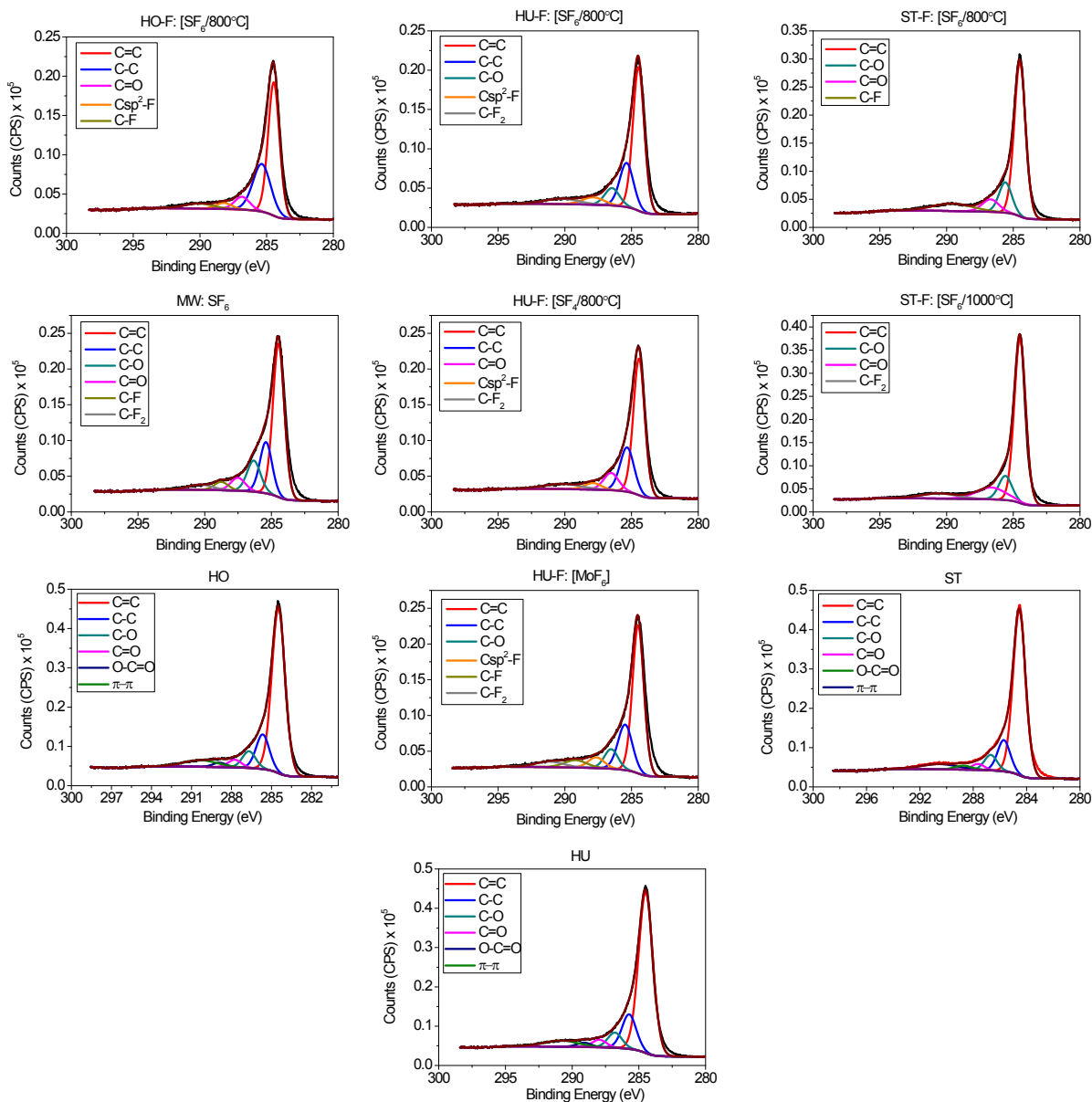


Figure SI-3. High resolution XPS of fluorinated graphenes at energy of C1s.