

**Supporting Information for  
Changing the photochemistry of amorphous carbon via bulk and surface  
treatments: implications for the grafting of n-alkenes**

*Paula E. Colavita,<sup>†,‡</sup> Bin Sun,<sup>†</sup> Xiaoyu Wang,<sup>†</sup> and Robert J. Hamers<sup>†\*</sup>*

<sup>†</sup>Department of Chemistry, 1101 University Avenue, University of Wisconsin.

Madison, Wisconsin 53706-1396.

<sup>‡</sup>School of Chemistry, Trinity College Dublin, College Green, Dublin 2, Republic of  
Ireland

**Peak assignments for *n*-alkenes in the liquid phase and grafted on carbon**

Peak positions (cm <sup>-1</sup> )								
Assignments <sup>a</sup>	TFAAD		1-dodecene		tBOC		UA-Me	
	(sln)	film <sup>b</sup>	(sln)	film <sup>b</sup>	(sln)	film <sup>b</sup>	(sln)	film <sup>b</sup>
ν (CH <sub>3</sub> ) a	-	-	2958	2965	2979	2981	2952	sh
ν (CH <sub>2</sub> ) a	2930	2934	2927	2929	2930	2932	2930	2934
ν (CH <sub>2</sub> ) s	2858	2859	2856	2859	2856	2858	2857	2857
ν (C=O)	1703	1713	-	-	1721 1709	1706	1743	1743
ν (C=C)	1642	-	1642	-	1641	-	1641	-
β(NH) ν(CN) ν(CC)	1561	1559	-	-	1504	1527	-	-
β(CH <sub>2</sub> )	1467	1465	1465	1467	1460	1462	1460	1457
β(CH <sub>3</sub> )	-	-	1379	1382	1392 1367	1394 1367	1436	1438
ν(C—O)	-	-	-	-	1173	1182	1198 1172	1201 1175
ν(C—F)	1210 1185 1168	1214 1191 1168	-	-	-	-	-	-

<sup>\*</sup> Corresponding author. E-mail: rjhamers@wisc.edu.

**Table S1:** The parent compounds were dissolved in carbon tetrachloride and the spectra were taken at 1 cm<sup>-1</sup> resolution. The spectra of organic layers were obtained at 4 cm<sup>-1</sup> resolution with p-polarized light at 80° incidence. The *n*-alkene peak assignments have been discussed in previous work from our laboratory.<sup>1-4</sup>

*a*  $\nu$  = stretching;  $\beta$  = bending; *a* = asymmetric; *s* = symmetric.

*b* The reported peak positions for the organic layers correspond to those obtained on annealed carbons.

## References

1. Baker, S. E.; Colavita, P. E.; Tse, K. Y.; Hamers, R. J., *Chem. Mater.* **2006**, *18*, 4415-4422.
2. Sun, B.; Colavita, P. E.; Kim, H.; Lockett, M.; Marcus, M. S.; Smith, L. M.; Hamers, R. J., *Langmuir* **2006**, *22*, 9598-9605.
3. Colavita, P. E.; Streifer, J. A.; Sun, B.; Wang, X.; Warf, P.; Hamers, R. J., *J. Phys. Chem. C* **2008**, *112*, 5102-5112.
4. Colavita, P. E.; Sun, B.; Tse, K.-Y.; Hamers, R. J., *J. Am. Chem. Soc.* **2007**, *129*, 13554-13565.