

**Table S1** Proton chemical shifts of the phenanthrene fragment in some derivatives [ppm]

compound	H1	H2	H3	H4	H7	H8	H9	H10	H15	H16	H17
<b>12</b>	8.11	7.43	7.68	7.94	7.94	7.68	7.43	8.11	---	---	---
<b>14</b>	8.30	7.66	7.64	8.66	8.66	7.64	7.66	8.30	4.11	4.11	---
<b>16</b>	8.29	7.71	7.69	8.73	9.12	---	8.10	8.35	4.15	4.09	10.25
<b>7</b>	8.43	7.72	7.58	8.74	9.57	---	8.59	8.68	4.39	4.31	---
<b>8</b>	8.21	7.54	7.39	8.57	9.45	---	8.50	8.46	4.17	4.11	---
<b>5</b>	8.25	7.46	7.59	8.01	8.88	---	8.34	8.59	---	---	---
<b>6</b>	8.24	7.44	7.55	7.99	8.87	---	8.34	8.57	---	---	---
<b>15</b>	8.24	7.64	7.61	8.56	8.72	7.58	7.88	---	3.93	4.10	10.99
<b>3</b>	8.24	7.73	7.76	8.99	9.15	7.88	8.26	---	1.87	3.54	---
<b>4</b>	8.12	7.64	7.68	8.91	9.08	7.82	8.24	---	1.72	3.42	---
<b>1</b>	8.03	7.38	7.65	8.12	8.31	7.82	8.10	---	---	---	---
<b>2</b>	8.03	7.38	7.78	8.28	8.47	8.00	8.23	---	---	---	---

**Table S2**  $^{13}\text{C}$  NMR chemical shifts for various phenanthrene derivatives [ppm]

compound	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
<b>12</b>	130.34	129.48	136.00	123.87	135.64	135.64	123.87	136.00	129.48	130.34	130.76	180.10	180.10	130.76	---	---
<b>14</b>	122.09	126.78	125.77	122.59	128.61	128.61	122.59	125.77	126.78	122.09	129.05	143.88	143.88	129.05	60.93	60.93
<b>16</b>	122.36	127.38	126.53	122.47	128.63	127.91	126.74	133.17	125.17	122.76	133.26	143.12	146.64	129.15	60.83	60.83
<b>7</b>	122.30	127.15	126.06	122.95	128.77	127.15	128.96	139.68	133.40	120.27	128.48	144.10	144.51	129.78	61.26	61.14
<b>8</b>	122.17	126.97	125.85	122.84	128.71	126.97	128.71	140.30	133.28	120.02	128.21	143.96	144.23	129.62	61.15	61.04
<b>5</b>	130.69	129.80	136.04	124.26	135.83	134.06	130.25	150.46	135.45	128.89	130.06	180.54	180.36	131.56	---	---
<b>6</b>	130.39	129.48	135.94	124.14	135.75	133.61	130.18	151.76	135.61	128.39	129.65	180.50	180.37	131.48	---	---
<b>15</b>	122.10	127.38	126.45	122.80	128.43	129.11	126.80	125.29	127.46	135.07	127.58	144.39	146.31	128.84	60.27	61.05
<b>3</b>	121.88	127.15	126.14	123.41	128.51	128.86	123.21	123.18	135.33	137.35	131.21	146.04	146.04	129.54	59.00	60.27
<b>4</b>	121.80	127.06	126.06	123.37	128.54	128.82	123.01	123.10	135.17	137.99	131.17	146.19	145.96	129.43	59.04	60.30
<b>1</b>	130.07	129.63	136.04	124.88	136.25	136.46	124.88	132.75	136.79	146.04	131.96	180.74	180.64	131.19	---	---
<b>2</b>	130.11	129.65	136.09	124.91	136.42	---	124.81	132.83	136.47	146.94	132.03	180.85	180.67	131.18	---	---