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Supporting Information for “**Emissions of Parent, Nitro, and Oxygenated Polycyclic Aromatic Hydrocarbons from Residential Wood Combustion in Rural China**”

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*There are 19 pages, with 8 tables and 5 figures*

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**Table S1.** Average emission factors (mg/kg, dry basis) of **parent PAHs** for residential wood combustions of different fuel types. For each fuel, combustion experiments were done in triplicate.

	<i>White Poplar</i>	<i>Elm</i>	<i>Locust</i>	<i>Maple</i>	<i>Fir</i>	<i>Larch</i>	<i>Water Chinese fir</i>	<i>Cypress</i>	<i>Oak</i>	<i>Chinese Pine</i>	<i>Willow</i>	<i>Paulownia tomentosa</i>	<i>Toon</i>
<b>NAP</b>	5.5×10 <sup>0</sup>	4.9×10 <sup>0</sup>	2.4×10 <sup>0</sup>	3.3×10 <sup>0</sup>	4.2×10 <sup>0</sup>	2.8×10 <sup>0</sup>	3.2×10 <sup>0</sup>	3.4×10 <sup>0</sup>	3.1×10 <sup>0</sup>	2.1×10 <sup>0</sup>	1.1×10 <sup>0</sup>	3.2×10 <sup>0</sup>	2.7×10 <sup>0</sup>
<b>ACY</b>	1.5×10 <sup>0</sup>	1.7×10 <sup>0</sup>	4.9×10 <sup>-1</sup>	8.4×10 <sup>-1</sup>	1.1×10 <sup>0</sup>	1.0×10 <sup>0</sup>	8.5×10 <sup>-1</sup>	6.1×10 <sup>-1</sup>	5.9×10 <sup>-1</sup>	5.5×10 <sup>-1</sup>	1.9×10 <sup>-1</sup>	5.6×10 <sup>-1</sup>	4.1×10 <sup>-1</sup>
<b>ACE</b>	8.8×10 <sup>-2</sup>	1.1×10 <sup>-1</sup>	5.7×10 <sup>-2</sup>	8.1×10 <sup>-2</sup>	5.0×10 <sup>-2</sup>	5.2×10 <sup>-2</sup>	4.4×10 <sup>-2</sup>	5.4×10 <sup>-2</sup>	5.4×10 <sup>-2</sup>	4.5×10 <sup>-2</sup>	1.7×10 <sup>-2</sup>	4.7×10 <sup>-2</sup>	3.2×10 <sup>-2</sup>
<b>FLO</b>	3.6×10 <sup>-1</sup>	5.1×10 <sup>-1</sup>	1.6×10 <sup>-1</sup>	2.9×10 <sup>-1</sup>	2.5×10 <sup>-1</sup>	2.8×10 <sup>-1</sup>	2.5×10 <sup>-1</sup>	2.4×10 <sup>-1</sup>	2.2×10 <sup>-1</sup>	1.8×10 <sup>-1</sup>	7.6×10 <sup>-2</sup>	1.3×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>
<b>PHE</b>	1.7×10 <sup>0</sup>	2.7×10 <sup>0</sup>	9.2×10 <sup>-1</sup>	1.6×10 <sup>0</sup>	1.9×10 <sup>0</sup>	1.4×10 <sup>0</sup>	1.8×10 <sup>0</sup>	1.3×10 <sup>0</sup>	1.3×10 <sup>0</sup>	1.2×10 <sup>0</sup>	7.2×10 <sup>-1</sup>	1.0×10 <sup>0</sup>	8.2×10 <sup>-1</sup>
<b>ANT</b>	2.3×10 <sup>-1</sup>	3.9×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	2.0×10 <sup>-1</sup>	2.7×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	2.1×10 <sup>-1</sup>	1.6×10 <sup>-1</sup>	1.6×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	8.1×10 <sup>-2</sup>	1.1×10 <sup>-1</sup>	8.4×10 <sup>-2</sup>
<b>FLU</b>	1.0×10 <sup>0</sup>	1.1×10 <sup>0</sup>	4.3×10 <sup>-1</sup>	8.4×10 <sup>-1</sup>	1.2×10 <sup>0</sup>	4.6×10 <sup>-1</sup>	9.2×10 <sup>-1</sup>	6.2×10 <sup>-1</sup>	6.4×10 <sup>-1</sup>	6.6×10 <sup>-1</sup>	3.7×10 <sup>-1</sup>	4.9×10 <sup>-1</sup>	3.5×10 <sup>-1</sup>
<b>PYR</b>	9.2×10 <sup>-1</sup>	9.8×10 <sup>-1</sup>	3.7×10 <sup>-1</sup>	6.5×10 <sup>-1</sup>	9.2×10 <sup>-1</sup>	4.0×10 <sup>-1</sup>	7.8×10 <sup>-1</sup>	5.0×10 <sup>-1</sup>	5.3×10 <sup>-1</sup>	5.5×10 <sup>-1</sup>	2.9×10 <sup>-1</sup>	4.1×10 <sup>-1</sup>	2.9×10 <sup>-1</sup>
<b>RET</b>	6.7×10 <sup>-2</sup>	4.4×10 <sup>-2</sup>	7.5×10 <sup>-2</sup>	6.2×10 <sup>-2</sup>	7.4×10 <sup>-2</sup>	2.1×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	3.4×10 <sup>-1</sup>	9.3×10 <sup>-2</sup>	1.6×10 <sup>-1</sup>	4.8×10 <sup>-2</sup>
<b>BcP</b>	7.4×10 <sup>-2</sup>	5.4×10 <sup>-2</sup>	2.1×10 <sup>-2</sup>	5.1×10 <sup>-2</sup>	4.1×10 <sup>-2</sup>	2.1×10 <sup>-2</sup>	4.3×10 <sup>-2</sup>	2.8×10 <sup>-2</sup>	3.6×10 <sup>-2</sup>	3.9×10 <sup>-2</sup>	1.6×10 <sup>-2</sup>	4.3×10 <sup>-2</sup>	2.0×10 <sup>-2</sup>
<b>CPP</b>	2.9×10 <sup>-1</sup>	1.2×10 <sup>-1</sup>	6.2×10 <sup>-2</sup>	9.4×10 <sup>-2</sup>	5.0×10 <sup>-2</sup>	3.8×10 <sup>-2</sup>	2.3×10 <sup>-2</sup>	6.0×10 <sup>-2</sup>	1.3×10 <sup>-1</sup>	2.1×10 <sup>-2</sup>	2.6×10 <sup>-2</sup>	1.3×10 <sup>-1</sup>	2.7×10 <sup>-2</sup>
<b>BaA</b>	2.7×10 <sup>-1</sup>	2.1×10 <sup>-1</sup>	8.0×10 <sup>-2</sup>	2.5×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	7.0×10 <sup>-2</sup>	1.3×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	4.6×10 <sup>-2</sup>	1.5×10 <sup>-1</sup>	7.0×10 <sup>-2</sup>
<b>CHR</b>	2.5×10 <sup>-1</sup>	2.0×10 <sup>-1</sup>	8.6×10 <sup>-2</sup>	2.3×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	8.4×10 <sup>-2</sup>	1.5×10 <sup>-1</sup>	1.2×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	6.3×10 <sup>-2</sup>	1.8×10 <sup>-1</sup>	8.0×10 <sup>-2</sup>
<b>BbF</b>	1.3×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	3.2×10 <sup>-2</sup>	1.5×10 <sup>-1</sup>	6.6×10 <sup>-2</sup>	3.9×10 <sup>-2</sup>	8.0×10 <sup>-2</sup>	6.1×10 <sup>-2</sup>	7.0×10 <sup>-2</sup>	6.9×10 <sup>-2</sup>	2.3×10 <sup>-2</sup>	1.0×10 <sup>-1</sup>	4.1×10 <sup>-2</sup>
<b>BkF</b>	1.3×10 <sup>-1</sup>	9.8×10 <sup>-2</sup>	3.0×10 <sup>-2</sup>	1.3×10 <sup>-1</sup>	6.9×10 <sup>-2</sup>	3.9×10 <sup>-2</sup>	7.5×10 <sup>-2</sup>	5.3×10 <sup>-2</sup>	6.1×10 <sup>-2</sup>	7.1×10 <sup>-2</sup>	2.6×10 <sup>-2</sup>	8.6×10 <sup>-2</sup>	4.2×10 <sup>-2</sup>
<b>BeP</b>	7.8×10 <sup>-2</sup>	6.5×10 <sup>-2</sup>	2.0×10 <sup>-2</sup>	8.7×10 <sup>-2</sup>	4.1×10 <sup>-2</sup>	2.6×10 <sup>-2</sup>	4.8×10 <sup>-2</sup>	3.6×10 <sup>-2</sup>	4.3×10 <sup>-2</sup>	3.8×10 <sup>-2</sup>	1.8×10 <sup>-2</sup>	6.1×10 <sup>-2</sup>	2.9×10 <sup>-2</sup>
<b>BaP</b>	1.3×10 <sup>-1</sup>	8.4×10 <sup>-2</sup>	2.7×10 <sup>-2</sup>	1.2×10 <sup>-1</sup>	4.8×10 <sup>-2</sup>	2.6×10 <sup>-2</sup>	5.0×10 <sup>-2</sup>	4.7×10 <sup>-2</sup>	6.6×10 <sup>-2</sup>	3.7×10 <sup>-2</sup>	1.9×10 <sup>-2</sup>	7.7×10 <sup>-2</sup>	3.1×10 <sup>-2</sup>
<b>PER</b>	2.5×10 <sup>-2</sup>	1.6×10 <sup>-2</sup>	6.3×10 <sup>-3</sup>	2.7×10 <sup>-2</sup>	1.4×10 <sup>-2</sup>	8.5×10 <sup>-3</sup>	8.5×10 <sup>-3</sup>	1.0×10 <sup>-2</sup>	1.3×10 <sup>-2</sup>	7.2×10 <sup>-3</sup>	6.0×10 <sup>-3</sup>	1.3×10 <sup>-2</sup>	7.8×10 <sup>-3</sup>
<b>IcdP</b>	8.6×10 <sup>-2</sup>	6.0×10 <sup>-2</sup>	2.0×10 <sup>-2</sup>	8.3×10 <sup>-2</sup>	3.4×10 <sup>-2</sup>	2.2×10 <sup>-2</sup>	3.4×10 <sup>-2</sup>	3.6×10 <sup>-2</sup>	4.0×10 <sup>-2</sup>	2.3×10 <sup>-2</sup>	1.1×10 <sup>-2</sup>	5.8×10 <sup>-2</sup>	2.2×10 <sup>-2</sup>
<b>DahA</b>	1.3×10 <sup>-2</sup>	8.0×10 <sup>-3</sup>	3.5×10 <sup>-3</sup>	1.3×10 <sup>-2</sup>	4.8×10 <sup>-3</sup>	1.8×10 <sup>-3</sup>	4.3×10 <sup>-3</sup>	5.0×10 <sup>-3</sup>	6.9×10 <sup>-3</sup>	3.1×10 <sup>-3</sup>	2.8×10 <sup>-3</sup>	9.4×10 <sup>-3</sup>	3.3×10 <sup>-3</sup>
<b>BghiP</b>	6.6×10 <sup>-2</sup>	4.9×10 <sup>-2</sup>	1.5×10 <sup>-2</sup>	6.9×10 <sup>-2</sup>	3.1×10 <sup>-2</sup>	2.1×10 <sup>-2</sup>	3.1×10 <sup>-2</sup>	2.8×10 <sup>-2</sup>	3.3×10 <sup>-2</sup>	2.0×10 <sup>-2</sup>	1.1×10 <sup>-2</sup>	4.7×10 <sup>-2</sup>	2.1×10 <sup>-2</sup>
<b>DacP</b>	2.2×10 <sup>-2</sup>	1.1×10 <sup>-2</sup>	5.0×10 <sup>-3</sup>	1.5×10 <sup>-2</sup>	5.9×10 <sup>-3</sup>	5.2×10 <sup>-3</sup>	3.2×10 <sup>-3</sup>	5.8×10 <sup>-3</sup>	8.2×10 <sup>-3</sup>	1.8×10 <sup>-3</sup>	1.4×10 <sup>-3</sup>	9.7×10 <sup>-3</sup>	3.4×10 <sup>-3</sup>
<b>DalP</b>	1.5×10 <sup>-2</sup>	9.1×10 <sup>-3</sup>	3.4×10 <sup>-3</sup>	1.3×10 <sup>-2</sup>	5.1×10 <sup>-3</sup>	2.4×10 <sup>-3</sup>	3.5×10 <sup>-3</sup>	6.2×10 <sup>-3</sup>	6.4×10 <sup>-3</sup>	2.0×10 <sup>-3</sup>	1.7×10 <sup>-3</sup>	8.1×10 <sup>-3</sup>	2.5×10 <sup>-3</sup>
<b>DacF</b>	9.6×10 <sup>-3</sup>	6.2×10 <sup>-3</sup>	2.8×10 <sup>-3</sup>	1.2×10 <sup>-2</sup>	3.8×10 <sup>-3</sup>	1.7×10 <sup>-3</sup>	2.8×10 <sup>-3</sup>	5.0×10 <sup>-3</sup>	5.1×10 <sup>-3</sup>	1.5×10 <sup>-3</sup>	2.0×10 <sup>-3</sup>	8.1×10 <sup>-3</sup>	2.2×10 <sup>-3</sup>
<b>COR</b>	3.6×10 <sup>-2</sup>	2.3×10 <sup>-2</sup>	8.2×10 <sup>-3</sup>	2.3×10 <sup>-2</sup>	1.0×10 <sup>-2</sup>	1.0×10 <sup>-2</sup>	8.8×10 <sup>-3</sup>	1.3×10 <sup>-2</sup>	1.6×10 <sup>-2</sup>	3.9×10 <sup>-3</sup>	3.9×10 <sup>-3</sup>	2.5×10 <sup>-2</sup>	7.4×10 <sup>-3</sup>

<b>DaeP</b>	9.4×10 <sup>-3</sup>	8.3×10 <sup>-3</sup>	7.5×10 <sup>-3</sup>	8.9×10 <sup>-3</sup>	1.6×10 <sup>-3</sup>	4.4×10 <sup>-3</sup>	2.9×10 <sup>-3</sup>	5.3×10 <sup>-3</sup>	7.6×10 <sup>-3</sup>	1.5×10 <sup>-3</sup>	8.8×10 <sup>-4</sup>	9.3×10 <sup>-3</sup>	2.9×10 <sup>-3</sup>
<b>DaiP</b>	9.7×10 <sup>-3</sup>	4.7×10 <sup>-3</sup>	1.1×10 <sup>-3</sup>	1.4×10 <sup>-2</sup>	7.9×10 <sup>-4</sup>	1.9×10 <sup>-3</sup>	2.3×10 <sup>-3</sup>	4.9×10 <sup>-3</sup>	5.6×10 <sup>-3</sup>	3.9×10 <sup>-4</sup>	2.4×10 <sup>-4</sup>	6.7×10 <sup>-3</sup>	1.1×10 <sup>-3</sup>
<b>DahP</b>	2.1×10 <sup>-3</sup>	7.1×10 <sup>-4</sup>	2.8×10 <sup>-4</sup>	2.1×10 <sup>-3</sup>	7.4×10 <sup>-5</sup>	3.5×10 <sup>-4</sup>	2.2×10 <sup>-4</sup>	1.1×10 <sup>-3</sup>	6.7×10 <sup>-4</sup>	4.3×10 <sup>-4</sup>	0.0×10 <sup>0</sup>	1.3×10 <sup>-3</sup>	6.0×10 <sup>-4</sup>

**Table S1** (continue). **Average** emission factors (mg/kg, dry basis) of **parent PAHs** for residential wood combustions of different fuel types. For each fuel, combustion experiments were done in triplicate.

	<i>White Birch</i>	<i>Ribbed Birch</i>	<i>Paulownia elongata</i>	<i>Black Poplar</i>	<i>China Aspen</i>	<i>Chinaberry</i>	<i>Jujube</i>	<i>Persimmon</i>	<i>Mulberry</i>	<i>Peach</i>	<i>Lespedeza</i>	<i>Buxus sinica</i>	<i>Holly</i>	<i>Bamboo</i>
<b>NAP</b>	6.5×10 <sup>0</sup>	7.0×10 <sup>0</sup>	1.4×10 <sup>1</sup>	4.5×10 <sup>0</sup>	6.0×10 <sup>0</sup>	1.3×10 <sup>1</sup>	6.4×10 <sup>0</sup>	6.6×10 <sup>0</sup>	6.6×10 <sup>0</sup>	6.2×10 <sup>0</sup>	5.9×10 <sup>1</sup>	2.5×10 <sup>1</sup>	1.2×10 <sup>1</sup>	1.4×10 <sup>1</sup>
<b>ACY</b>	1.6×10 <sup>0</sup>	1.5×10 <sup>0</sup>	3.3×10 <sup>0</sup>	1.2×10 <sup>0</sup>	1.2×10 <sup>0</sup>	2.4×10 <sup>0</sup>	2.3×10 <sup>0</sup>	2.2×10 <sup>0</sup>	1.7×10 <sup>0</sup>	1.6×10 <sup>0</sup>	1.3×10 <sup>1</sup>	6.2×10 <sup>0</sup>	2.4×10 <sup>0</sup>	3.4×10 <sup>0</sup>
<b>ACE</b>	1.2×10 <sup>-1</sup>	8.9×10 <sup>-2</sup>	3.8×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	8.7×10 <sup>-2</sup>	2.6×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	1.2×10 <sup>-1</sup>	3.4×10 <sup>-1</sup>	1.8×10 <sup>-1</sup>	7.1×10 <sup>-2</sup>	9.4×10 <sup>-2</sup>
<b>FLO</b>	4.0×10 <sup>-1</sup>	3.6×10 <sup>-1</sup>	8.8×10 <sup>-1</sup>	5.0×10 <sup>-1</sup>	3.4×10 <sup>-1</sup>	6.2×10 <sup>-1</sup>	5.8×10 <sup>-1</sup>	5.5×10 <sup>-1</sup>	5.2×10 <sup>-1</sup>	4.6×10 <sup>-1</sup>	2.6×10 <sup>0</sup>	1.3×10 <sup>0</sup>	5.4×10 <sup>-1</sup>	6.7×10 <sup>-1</sup>
<b>PHE</b>	2.0×10 <sup>0</sup>	1.8×10 <sup>0</sup>	5.6×10 <sup>0</sup>	5.1×10 <sup>0</sup>	2.4×10 <sup>0</sup>	3.1×10 <sup>0</sup>	2.7×10 <sup>0</sup>	2.4×10 <sup>0</sup>	2.3×10 <sup>0</sup>	2.1×10 <sup>0</sup>	1.2×10 <sup>1</sup>	7.7×10 <sup>0</sup>	3.7×10 <sup>0</sup>	3.5×10 <sup>0</sup>
<b>ANT</b>	2.7×10 <sup>-1</sup>	2.2×10 <sup>-1</sup>	1.0×10 <sup>0</sup>	8.8×10 <sup>-1</sup>	3.4×10 <sup>-1</sup>	4.9×10 <sup>-1</sup>	3.9×10 <sup>-1</sup>	3.4×10 <sup>-1</sup>	3.4×10 <sup>-1</sup>	2.6×10 <sup>-1</sup>	2.3×10 <sup>0</sup>	1.2×10 <sup>0</sup>	4.9×10 <sup>-1</sup>	5.3×10 <sup>-1</sup>
<b>FLU</b>	1.1×10 <sup>0</sup>	1.0×10 <sup>0</sup>	2.2×10 <sup>0</sup>	2.3×10 <sup>0</sup>	1.4×10 <sup>0</sup>	1.3×10 <sup>0</sup>	1.6×10 <sup>0</sup>	1.1×10 <sup>0</sup>	8.9×10 <sup>-1</sup>	8.4×10 <sup>-1</sup>	1.5×10 <sup>1</sup>	7.2×10 <sup>0</sup>	2.3×10 <sup>0</sup>	2.8×10 <sup>0</sup>
<b>PYR</b>	1.0×10 <sup>0</sup>	9.3×10 <sup>-1</sup>	1.9×10 <sup>0</sup>	1.9×10 <sup>0</sup>	1.2×10 <sup>0</sup>	1.1×10 <sup>0</sup>	1.5×10 <sup>0</sup>	9.7×10 <sup>-1</sup>	7.4×10 <sup>-1</sup>	7.5×10 <sup>-1</sup>	1.4×10 <sup>1</sup>	7.0×10 <sup>0</sup>	1.9×10 <sup>0</sup>	2.6×10 <sup>0</sup>
<b>RET</b>	8.1×10 <sup>-2</sup>	6.3×10 <sup>-2</sup>	5.4×10 <sup>-2</sup>	1.5×10 <sup>-1</sup>	7.7×10 <sup>-2</sup>	1.5×10 <sup>-1</sup>	3.9×10 <sup>-2</sup>	7.7×10 <sup>-2</sup>	5.7×10 <sup>-2</sup>	5.7×10 <sup>-2</sup>	3.9×10 <sup>-2</sup>	9.5×10 <sup>-2</sup>	4.2×10 <sup>-2</sup>	8.1×10 <sup>-2</sup>
<b>BcP</b>	7.5×10 <sup>-2</sup>	6.8×10 <sup>-2</sup>	1.5×10 <sup>-1</sup>	1.6×10 <sup>-1</sup>	7.9×10 <sup>-2</sup>	8.1×10 <sup>-2</sup>	1.4×10 <sup>-1</sup>	7.5×10 <sup>-2</sup>	4.5×10 <sup>-2</sup>	5.1×10 <sup>-2</sup>	1.1×10 <sup>0</sup>	5.7×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	1.9×10 <sup>-1</sup>
<b>CPP</b>	3.5×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	7.0×10 <sup>-1</sup>	6.8×10 <sup>-1</sup>	3.2×10 <sup>-1</sup>	3.7×10 <sup>-1</sup>	5.2×10 <sup>-1</sup>	2.9×10 <sup>-1</sup>	1.6×10 <sup>-1</sup>	2.4×10 <sup>-1</sup>	6.5×10 <sup>0</sup>	1.3×10 <sup>0</sup>	1.7×10 <sup>-1</sup>	6.7×10 <sup>-1</sup>
<b>BaA</b>	3.0×10 <sup>-1</sup>	2.3×10 <sup>-1</sup>	6.0×10 <sup>-1</sup>	7.5×10 <sup>-1</sup>	3.7×10 <sup>-1</sup>	3.6×10 <sup>-1</sup>	4.7×10 <sup>-1</sup>	2.9×10 <sup>-1</sup>	1.8×10 <sup>-1</sup>	2.3×10 <sup>-1</sup>	4.9×10 <sup>0</sup>	2.2×10 <sup>0</sup>	5.2×10 <sup>-1</sup>	6.6×10 <sup>-1</sup>
<b>CHR</b>	3.0×10 <sup>-1</sup>	2.1×10 <sup>-1</sup>	5.5×10 <sup>-1</sup>	7.3×10 <sup>-1</sup>	3.1×10 <sup>-1</sup>	4.3×10 <sup>-1</sup>	4.2×10 <sup>-1</sup>	2.6×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	2.0×10 <sup>-1</sup>	3.5×10 <sup>0</sup>	1.6×10 <sup>0</sup>	5.0×10 <sup>-1</sup>	5.7×10 <sup>-1</sup>
<b>BbF</b>	1.8×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	2.5×10 <sup>-1</sup>	3.3×10 <sup>-1</sup>	2.3×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	3.2×10 <sup>-1</sup>	1.6×10 <sup>-1</sup>	9.2×10 <sup>-2</sup>	1.2×10 <sup>-1</sup>	3.6×10 <sup>0</sup>	1.6×10 <sup>0</sup>	3.9×10 <sup>-1</sup>	4.6×10 <sup>-1</sup>
<b>BkF</b>	1.9×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	2.1×10 <sup>-1</sup>	2.4×10 <sup>-1</sup>	2.0×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	3.8×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	8.0×10 <sup>-2</sup>	1.2×10 <sup>-1</sup>	3.4×10 <sup>0</sup>	1.6×10 <sup>0</sup>	4.0×10 <sup>-1</sup>	5.9×10 <sup>-1</sup>
<b>BeP</b>	1.0×10 <sup>-1</sup>	7.9×10 <sup>-2</sup>	1.4×10 <sup>-1</sup>	1.8×10 <sup>-1</sup>	1.2×10 <sup>-1</sup>	8.3×10 <sup>-2</sup>	1.9×10 <sup>-1</sup>	1.0×10 <sup>-1</sup>	5.3×10 <sup>-2</sup>	7.3×10 <sup>-2</sup>	1.9×10 <sup>0</sup>	8.7×10 <sup>-1</sup>	2.4×10 <sup>-1</sup>	3.1×10 <sup>-1</sup>
<b>BaP</b>	1.9×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	2.7×10 <sup>-1</sup>	3.5×10 <sup>-1</sup>	2.0×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	3.5×10 <sup>-1</sup>	1.9×10 <sup>-1</sup>	7.6×10 <sup>-2</sup>	1.3×10 <sup>-1</sup>	4.4×10 <sup>0</sup>	1.7×10 <sup>0</sup>	3.5×10 <sup>-1</sup>	6.2×10 <sup>-1</sup>
<b>PER</b>	3.2×10 <sup>-2</sup>	2.1×10 <sup>-2</sup>	4.2×10 <sup>-2</sup>	5.0×10 <sup>-2</sup>	3.3×10 <sup>-2</sup>	2.4×10 <sup>-2</sup>	5.8×10 <sup>-2</sup>	3.2×10 <sup>-2</sup>	1.3×10 <sup>-2</sup>	2.6×10 <sup>-2</sup>	6.7×10 <sup>-1</sup>	2.7×10 <sup>-1</sup>	6.3×10 <sup>-2</sup>	1.0×10 <sup>-1</sup>
<b>IcdP</b>	1.4×10 <sup>-1</sup>	1.0×10 <sup>-1</sup>	1.8×10 <sup>-1</sup>	2.6×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	9.3×10 <sup>-2</sup>	2.7×10 <sup>-1</sup>	1.2×10 <sup>-1</sup>	4.9×10 <sup>-2</sup>	9.7×10 <sup>-2</sup>	4.0×10 <sup>0</sup>	1.6×10 <sup>0</sup>	3.1×10 <sup>-1</sup>	5.2×10 <sup>-1</sup>
<b>DahA</b>	1.3×10 <sup>-2</sup>	9.0×10 <sup>-3</sup>	2.4×10 <sup>-2</sup>	4.4×10 <sup>-2</sup>	2.0×10 <sup>-2</sup>	1.5×10 <sup>-2</sup>	2.8×10 <sup>-2</sup>	1.3×10 <sup>-2</sup>	7.5×10 <sup>-3</sup>	9.0×10 <sup>-3</sup>	3.2×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	2.6×10 <sup>-2</sup>	3.9×10 <sup>-2</sup>
<b>BghiP</b>	1.1×10 <sup>-1</sup>	8.3×10 <sup>-2</sup>	1.1×10 <sup>-1</sup>	1.6×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	6.5×10 <sup>-2</sup>	2.1×10 <sup>-1</sup>	9.7×10 <sup>-2</sup>	4.0×10 <sup>-2</sup>	7.7×10 <sup>-2</sup>	3.2×10 <sup>0</sup>	1.4×10 <sup>0</sup>	2.8×10 <sup>-1</sup>	4.7×10 <sup>-1</sup>

<b>DacP</b>	$3.3 \times 10^{-2}$	$1.7 \times 10^{-2}$	$6.7 \times 10^{-2}$	$6.1 \times 10^{-2}$	$3.6 \times 10^{-2}$	$2.8 \times 10^{-2}$	$6.3 \times 10^{-2}$	$2.8 \times 10^{-2}$	$1.1 \times 10^{-2}$	$2.2 \times 10^{-2}$	$9.5 \times 10^{-1}$	$2.2 \times 10^{-1}$	$4.4 \times 10^{-2}$	$1.1 \times 10^{-1}$
<b>DalP</b>	$2.2 \times 10^{-2}$	$1.3 \times 10^{-2}$	$3.4 \times 10^{-2}$	$4.8 \times 10^{-2}$	$2.6 \times 10^{-2}$	$1.6 \times 10^{-2}$	$4.6 \times 10^{-2}$	$2.4 \times 10^{-2}$	$7.8 \times 10^{-3}$	$1.3 \times 10^{-2}$	$4.2 \times 10^{-1}$	$1.9 \times 10^{-1}$	$3.9 \times 10^{-2}$	$5.6 \times 10^{-2}$
<b>DaeF</b>	$1.5 \times 10^{-2}$	$1.1 \times 10^{-2}$	$2.7 \times 10^{-2}$	$3.4 \times 10^{-2}$	$2.0 \times 10^{-2}$	$1.3 \times 10^{-2}$	$3.3 \times 10^{-2}$	$1.5 \times 10^{-2}$	$7.6 \times 10^{-3}$	$8.9 \times 10^{-3}$	$3.6 \times 10^{-1}$	$1.6 \times 10^{-1}$	$2.8 \times 10^{-2}$	$5.4 \times 10^{-2}$
<b>COR</b>	$6.8 \times 10^{-2}$	$4.5 \times 10^{-2}$	$7.6 \times 10^{-2}$	$8.7 \times 10^{-2}$	$5.1 \times 10^{-2}$	$3.4 \times 10^{-2}$	$1.4 \times 10^{-1}$	$6.1 \times 10^{-2}$	$1.9 \times 10^{-2}$	$4.3 \times 10^{-2}$	$2.2 \times 10^0$	$8.3 \times 10^{-1}$	$1.5 \times 10^{-1}$	$3.6 \times 10^{-1}$
<b>DaeP</b>	$1.7 \times 10^{-2}$	$1.0 \times 10^{-2}$	$2.9 \times 10^{-2}$	$3.8 \times 10^{-2}$	$2.6 \times 10^{-2}$	$1.3 \times 10^{-2}$	$3.3 \times 10^{-2}$	$1.5 \times 10^{-2}$	$9.3 \times 10^{-3}$	$9.8 \times 10^{-3}$	$3.8 \times 10^{-1}$	$1.9 \times 10^{-1}$	$3.8 \times 10^{-2}$	$1.1 \times 10^{-1}$
<b>DaiP</b>	$2.1 \times 10^{-2}$	$1.3 \times 10^{-2}$	$2.6 \times 10^{-2}$	$3.0 \times 10^{-2}$	$1.9 \times 10^{-2}$	$1.2 \times 10^{-2}$	$3.5 \times 10^{-2}$	$1.3 \times 10^{-2}$	$6.0 \times 10^{-3}$	$1.0 \times 10^{-2}$	$3.7 \times 10^{-1}$	$1.2 \times 10^{-1}$	$2.9 \times 10^{-2}$	$7.3 \times 10^{-2}$
<b>DahP</b>	$2.6 \times 10^{-3}$	$2.0 \times 10^{-3}$	$5.9 \times 10^{-3}$	$1.1 \times 10^{-2}$	$3.1 \times 10^{-3}$	$1.4 \times 10^{-3}$	$3.7 \times 10^{-3}$	$2.6 \times 10^{-3}$	$8.2 \times 10^{-4}$	$2.0 \times 10^{-3}$	$4.9 \times 10^{-2}$	$1.5 \times 10^{-2}$	$4.1 \times 10^{-3}$	$8.8 \times 10^{-3}$

**Table S2.** Standard derivations of measured emission factors (mg/kg, dry basis) of **parent PAHs** for residential wood combustions of different fuel types. For each fuel, combustion experiments were done in triplicate.

	<i>White Poplar</i>	<i>Elm</i>	<i>Locust</i>	<i>Maple</i>	<i>Fir</i>	<i>Larch</i>	<i>Water Chinese fir</i>	<i>Cypress</i>	<i>Oak</i>	<i>Chinese Pine</i>	<i>Willow</i>	<i>Paulownia tomentosa</i>	<i>Toon</i>
<b>NAP</b>	$2.8 \times 10^0$	$2.2 \times 10^0$	$1.3 \times 10^0$	$1.0 \times 10^0$	$3.4 \times 10^0$	$1.4 \times 10^0$	$7.6 \times 10^{-1}$	$8.6 \times 10^{-1}$	$1.3 \times 10^0$	$1.6 \times 10^0$	$1.3 \times 10^0$	$2.0 \times 10^0$	$1.9 \times 10^0$
<b>ACY</b>	$7.2 \times 10^{-1}$	$7.7 \times 10^{-1}$	$2.4 \times 10^{-1}$	$2.8 \times 10^{-1}$	$8.4 \times 10^{-1}$	$3.8 \times 10^{-1}$	$2.7 \times 10^{-1}$	$1.1 \times 10^{-1}$	$1.6 \times 10^{-1}$	$3.0 \times 10^{-1}$	$2.4 \times 10^{-1}$	$1.7 \times 10^{-1}$	$2.7 \times 10^{-1}$
<b>ACE</b>	$3.6 \times 10^{-2}$	$4.5 \times 10^{-2}$	$3.2 \times 10^{-2}$	$4.2 \times 10^{-2}$	$3.4 \times 10^{-2}$	$1.9 \times 10^{-2}$	$1.4 \times 10^{-2}$	$1.1 \times 10^{-2}$	$2.3 \times 10^{-2}$	$2.1 \times 10^{-2}$	$2.0 \times 10^{-2}$	$2.2 \times 10^{-2}$	$2.0 \times 10^{-2}$
<b>FLO</b>	$1.6 \times 10^{-1}$	$2.2 \times 10^{-1}$	$4.7 \times 10^{-2}$	$1.3 \times 10^{-1}$	$1.6 \times 10^{-1}$	$1.1 \times 10^{-1}$	$8.8 \times 10^{-2}$	$2.1 \times 10^{-2}$	$7.9 \times 10^{-2}$	$8.9 \times 10^{-2}$	$8.5 \times 10^{-2}$	$4.1 \times 10^{-2}$	$5.9 \times 10^{-2}$
<b>PHE</b>	$5.3 \times 10^{-1}$	$1.1 \times 10^0$	$1.3 \times 10^{-1}$	$6.6 \times 10^{-1}$	$5.6 \times 10^{-1}$	$3.4 \times 10^{-1}$	$5.9 \times 10^{-1}$	$1.1 \times 10^{-2}$	$5.4 \times 10^{-1}$	$4.1 \times 10^{-1}$	$4.8 \times 10^{-1}$	$2.0 \times 10^{-1}$	$1.8 \times 10^{-1}$
<b>ANT</b>	$9.5 \times 10^{-2}$	$1.6 \times 10^{-1}$	$2.8 \times 10^{-2}$	$7.3 \times 10^{-2}$	$1.1 \times 10^{-1}$	$4.2 \times 10^{-2}$	$7.9 \times 10^{-2}$	$1.1 \times 10^{-2}$	$7.8 \times 10^{-2}$	$4.6 \times 10^{-2}$	$4.3 \times 10^{-2}$	$2.4 \times 10^{-2}$	$2.1 \times 10^{-2}$
<b>FLU</b>	$4.4 \times 10^{-1}$	$5.2 \times 10^{-1}$	$1.9 \times 10^{-2}$	$2.8 \times 10^{-1}$	$3.6 \times 10^{-1}$	$7.1 \times 10^{-2}$	$1.9 \times 10^{-1}$	$5.6 \times 10^{-2}$	$2.1 \times 10^{-1}$	$2.0 \times 10^{-1}$	$1.9 \times 10^{-1}$	$6.1 \times 10^{-2}$	$4.5 \times 10^{-2}$
<b>PYR</b>	$3.6 \times 10^{-1}$	$3.7 \times 10^{-1}$	$3.2 \times 10^{-2}$	$2.3 \times 10^{-1}$	$3.3 \times 10^{-1}$	$5.8 \times 10^{-2}$	$2.0 \times 10^{-1}$	$9.7 \times 10^{-2}$	$1.6 \times 10^{-1}$	$1.1 \times 10^{-1}$	$1.4 \times 10^{-1}$	$7.3 \times 10^{-2}$	$8.3 \times 10^{-2}$
<b>RET</b>	$1.4 \times 10^{-2}$	$1.3 \times 10^{-2}$	$7.1 \times 10^{-2}$	$4.3 \times 10^{-2}$	$2.6 \times 10^{-2}$	$2.1 \times 10^{-1}$	$8.8 \times 10^{-2}$	$4.9 \times 10^{-2}$	$1.0 \times 10^{-1}$	$8.1 \times 10^{-2}$	$1.7 \times 10^{-2}$	$2.1 \times 10^{-2}$	$2.2 \times 10^{-2}$
<b>BcP</b>	$4.1 \times 10^{-2}$	$9.9 \times 10^{-3}$	$3.2 \times 10^{-3}$	$1.8 \times 10^{-2}$	$1.8 \times 10^{-3}$	$1.7 \times 10^{-3}$	$7.4 \times 10^{-3}$	$6.0 \times 10^{-3}$	$9.1 \times 10^{-3}$	$1.5 \times 10^{-2}$	$1.2 \times 10^{-2}$	$1.3 \times 10^{-2}$	$3.7 \times 10^{-3}$
<b>CPP</b>	$2.8 \times 10^{-1}$	$8.0 \times 10^{-3}$	$3.2 \times 10^{-2}$	$5.3 \times 10^{-2}$	$7.3 \times 10^{-3}$	$4.9 \times 10^{-3}$	$3.2 \times 10^{-3}$	$3.0 \times 10^{-2}$	$6.1 \times 10^{-3}$	$3.5 \times 10^{-3}$	$8.7 \times 10^{-3}$	$6.6 \times 10^{-2}$	$6.6 \times 10^{-3}$
<b>BaA</b>	$1.7 \times 10^{-1}$	$4.5 \times 10^{-2}$	$2.1 \times 10^{-2}$	$1.1 \times 10^{-1}$	$1.6 \times 10^{-2}$	$1.7 \times 10^{-3}$	$2.9 \times 10^{-2}$	$2.7 \times 10^{-2}$	$3.0 \times 10^{-2}$	$6.2 \times 10^{-2}$	$2.9 \times 10^{-2}$	$5.8 \times 10^{-2}$	$8.1 \times 10^{-3}$
<b>CHR</b>	$1.3 \times 10^{-1}$	$4.3 \times 10^{-2}$	$2.2 \times 10^{-2}$	$9.1 \times 10^{-2}$	$5.6 \times 10^{-3}$	$3.4 \times 10^{-3}$	$2.7 \times 10^{-2}$	$2.4 \times 10^{-2}$	$2.6 \times 10^{-2}$	$7.5 \times 10^{-2}$	$4.1 \times 10^{-2}$	$5.0 \times 10^{-2}$	$6.0 \times 10^{-3}$
<b>BbF</b>	$6.1 \times 10^{-2}$	$1.3 \times 10^{-2}$	$1.2 \times 10^{-2}$	$6.8 \times 10^{-2}$	$6.8 \times 10^{-3}$	$4.5 \times 10^{-3}$	$2.3 \times 10^{-2}$	$1.1 \times 10^{-2}$	$1.4 \times 10^{-2}$	$5.3 \times 10^{-2}$	$1.0 \times 10^{-2}$	$2.2 \times 10^{-2}$	$2.5 \times 10^{-3}$
<b>BkF</b>	$7.5 \times 10^{-2}$	$1.6 \times 10^{-2}$	$7.8 \times 10^{-3}$	$6.8 \times 10^{-2}$	$2.5 \times 10^{-3}$	$8.7 \times 10^{-3}$	$1.5 \times 10^{-2}$	$8.2 \times 10^{-3}$	$1.3 \times 10^{-2}$	$5.3 \times 10^{-2}$	$1.3 \times 10^{-2}$	$2.1 \times 10^{-2}$	$5.7 \times 10^{-3}$
<b>BeP</b>	$3.7 \times 10^{-2}$	$1.0 \times 10^{-2}$	$6.4 \times 10^{-3}$	$4.2 \times 10^{-2}$	$1.2 \times 10^{-3}$	$2.3 \times 10^{-3}$	$1.5 \times 10^{-2}$	$6.4 \times 10^{-3}$	$7.8 \times 10^{-3}$	$2.6 \times 10^{-2}$	$9.6 \times 10^{-3}$	$1.3 \times 10^{-2}$	$4.0 \times 10^{-3}$

<b>BaP</b>	9.6×10 <sup>-2</sup>	8.3×10 <sup>-3</sup>	1.1×10 <sup>-2</sup>	6.6×10 <sup>-2</sup>	5.2×10 <sup>-3</sup>	3.7×10 <sup>-3</sup>	2.6×10 <sup>-2</sup>	1.0×10 <sup>-2</sup>	1.6×10 <sup>-2</sup>	2.6×10 <sup>-2</sup>	1.1×10 <sup>-2</sup>	3.0×10 <sup>-2</sup>	4.0×10 <sup>-3</sup>
<b>PER</b>	1.7×10 <sup>-2</sup>	2.5×10 <sup>-3</sup>	1.7×10 <sup>-3</sup>	1.7×10 <sup>-2</sup>	1.8×10 <sup>-3</sup>	2.1×10 <sup>-3</sup>	3.0×10 <sup>-3</sup>	1.9×10 <sup>-3</sup>	1.2×10 <sup>-4</sup>	3.6×10 <sup>-3</sup>	2.7×10 <sup>-3</sup>	4.4×10 <sup>-3</sup>	7.7×10 <sup>-4</sup>
<b>IcdP</b>	6.4×10 <sup>-2</sup>	2.8×10 <sup>-3</sup>	8.6×10 <sup>-3</sup>	4.4×10 <sup>-2</sup>	4.3×10 <sup>-3</sup>	5.4×10 <sup>-3</sup>	1.7×10 <sup>-2</sup>	6.8×10 <sup>-3</sup>	7.7×10 <sup>-3</sup>	1.6×10 <sup>-2</sup>	5.4×10 <sup>-3</sup>	2.3×10 <sup>-2</sup>	2.8×10 <sup>-3</sup>
<b>DahA</b>	1.0×10 <sup>-2</sup>	1.5×10 <sup>-3</sup>	1.7×10 <sup>-3</sup>	6.3×10 <sup>-3</sup>	1.3×10 <sup>-3</sup>	6.8×10 <sup>-4</sup>	1.5×10 <sup>-3</sup>	1.7×10 <sup>-3</sup>	1.4×10 <sup>-3</sup>	1.9×10 <sup>-3</sup>	2.1×10 <sup>-3</sup>	5.1×10 <sup>-3</sup>	1.3×10 <sup>-3</sup>
<b>BghiP</b>	4.0×10 <sup>-2</sup>	5.3×10 <sup>-3</sup>	6.5×10 <sup>-3</sup>	3.6×10 <sup>-2</sup>	1.4×10 <sup>-3</sup>	5.0×10 <sup>-3</sup>	1.4×10 <sup>-2</sup>	5.3×10 <sup>-3</sup>	4.9×10 <sup>-3</sup>	1.5×10 <sup>-2</sup>	5.3×10 <sup>-3</sup>	1.7×10 <sup>-2</sup>	2.6×10 <sup>-3</sup>
<b>DacP</b>	2.3×10 <sup>-2</sup>	1.8×10 <sup>-3</sup>	2.5×10 <sup>-3</sup>	8.6×10 <sup>-3</sup>	3.4×10 <sup>-3</sup>	3.7×10 <sup>-3</sup>	3.3×10 <sup>-3</sup>	1.2×10 <sup>-3</sup>	3.1×10 <sup>-3</sup>	6.3×10 <sup>-4</sup>	4.4×10 <sup>-4</sup>	5.3×10 <sup>-3</sup>	6.4×10 <sup>-4</sup>
<b>DalP</b>	1.1×10 <sup>-2</sup>	7.8×10 <sup>-4</sup>	2.2×10 <sup>-3</sup>	8.2×10 <sup>-3</sup>	4.9×10 <sup>-3</sup>	9.6×10 <sup>-4</sup>	3.7×10 <sup>-3</sup>	1.2×10 <sup>-3</sup>	2.7×10 <sup>-3</sup>	1.8×10 <sup>-3</sup>	3.9×10 <sup>-4</sup>	6.1×10 <sup>-4</sup>	5.5×10 <sup>-4</sup>
<b>DaeF</b>	8.1×10 <sup>-3</sup>	1.1×10 <sup>-3</sup>	1.6×10 <sup>-3</sup>	7.1×10 <sup>-3</sup>	2.8×10 <sup>-3</sup>	4.5×10 <sup>-4</sup>	2.0×10 <sup>-3</sup>	1.1×10 <sup>-3</sup>	1.1×10 <sup>-3</sup>	2.2×10 <sup>-3</sup>	3.4×10 <sup>-4</sup>	2.2×10 <sup>-3</sup>	8.6×10 <sup>-4</sup>
<b>COR</b>	3.0×10 <sup>-2</sup>	4.3×10 <sup>-3</sup>	3.9×10 <sup>-3</sup>	1.2×10 <sup>-2</sup>	6.3×10 <sup>-3</sup>	3.5×10 <sup>-3</sup>	8.2×10 <sup>-3</sup>	3.4×10 <sup>-3</sup>	2.0×10 <sup>-3</sup>	2.9×10 <sup>-3</sup>	2.5×10 <sup>-3</sup>	8.2×10 <sup>-3</sup>	2.8×10 <sup>-3</sup>
<b>DaeP</b>	7.5×10 <sup>-3</sup>	5.6×10 <sup>-4</sup>	9.1×10 <sup>-3</sup>	4.7×10 <sup>-3</sup>	1.0×10 <sup>-3</sup>	2.2×10 <sup>-3</sup>	1.8×10 <sup>-3</sup>	2.2×10 <sup>-3</sup>	5.9×10 <sup>-4</sup>	2.3×10 <sup>-3</sup>	7.5×10 <sup>-4</sup>	3.5×10 <sup>-3</sup>	1.0×10 <sup>-3</sup>
<b>DaiP</b>	1.0×10 <sup>-2</sup>	3.2×10 <sup>-4</sup>	1.8×10 <sup>-3</sup>	1.1×10 <sup>-2</sup>	6.9×10 <sup>-4</sup>	2.0×10 <sup>-3</sup>	2.7×10 <sup>-3</sup>	1.5×10 <sup>-3</sup>	1.6×10 <sup>-3</sup>	3.4×10 <sup>-4</sup>	3.5×10 <sup>-4</sup>	4.3×10 <sup>-3</sup>	5.4×10 <sup>-4</sup>
<b>DahP</b>	2.8×10 <sup>-3</sup>	1.7×10 <sup>-4</sup>	4.8×10 <sup>-4</sup>	1.9×10 <sup>-3</sup>	1.3×10 <sup>-4</sup>	2.1×10 <sup>-4</sup>	1.4×10 <sup>-4</sup>	7.1×10 <sup>-4</sup>	7.9×10 <sup>-4</sup>	4.2×10 <sup>-4</sup>	0.0×10 <sup>0</sup>	5.6×10 <sup>-4</sup>	5.2×10 <sup>-4</sup>

**Table S2 (continue). Standard derivations** of measured emission factors (mg/kg, dry basis) of **parent PAHs** for residential wood combustions of different fuel types. For each fuel, combustion experiments were done in triplicate.

	<i>White Birch</i>	<i>Ribbed Birch</i>	<i>Paulownia elongata</i>	<i>Black Poplar</i>	<i>China Aspen</i>	<i>Chinaberry</i>	<i>Jujube</i>	<i>Persimmon</i>	<i>Mulberry</i>	<i>Peach</i>	<i>Lespedeza</i>	<i>Buxus sinica</i>	<i>Holly</i>	<i>Bamboo</i>
<b>NAP</b>	5.3×10 <sup>0</sup>	9.5×10 <sup>-1</sup>	1.5×10 <sup>0</sup>	5.4×10 <sup>0</sup>	1.6×10 <sup>0</sup>	4.5×10 <sup>0</sup>	4.3×10 <sup>0</sup>	1.9×10 <sup>0</sup>	2.0×10 <sup>0</sup>	3.8×10 <sup>0</sup>	4.4×10 <sup>1</sup>	2.2×10 <sup>1</sup>	4.4×10 <sup>0</sup>	8.1×10 <sup>0</sup>
<b>ACY</b>	1.1×10 <sup>0</sup>	1.9×10 <sup>-1</sup>	1.8×10 <sup>0</sup>	4.5×10 <sup>-1</sup>	4.2×10 <sup>-1</sup>	8.6×10 <sup>-1</sup>	1.2×10 <sup>0</sup>	8.2×10 <sup>-1</sup>	8.8×10 <sup>-1</sup>	8.9×10 <sup>-1</sup>	9.0×10 <sup>0</sup>	3.8×10 <sup>0</sup>	4.8×10 <sup>-1</sup>	5.0×10 <sup>-1</sup>
<b>ACE</b>	8.4×10 <sup>-2</sup>	1.3×10 <sup>-2</sup>	1.8×10 <sup>-1</sup>	2.9×10 <sup>-2</sup>	2.2×10 <sup>-2</sup>	6.6×10 <sup>-2</sup>	4.9×10 <sup>-2</sup>	5.1×10 <sup>-2</sup>	3.4×10 <sup>-2</sup>	5.9×10 <sup>-2</sup>	2.2×10 <sup>-1</sup>	1.0×10 <sup>-1</sup>	6.9×10 <sup>-3</sup>	2.4×10 <sup>-2</sup>
<b>FLO</b>	2.6×10 <sup>-1</sup>	5.7×10 <sup>-2</sup>	7.4×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	1.0×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	2.6×10 <sup>-1</sup>	2.0×10 <sup>-1</sup>	1.8×10 <sup>-1</sup>	2.3×10 <sup>-1</sup>	1.8×10 <sup>0</sup>	7.4×10 <sup>-1</sup>	9.3×10 <sup>-2</sup>	6.5×10 <sup>-2</sup>
<b>PHE</b>	7.9×10 <sup>-1</sup>	3.2×10 <sup>-1</sup>	6.4×10 <sup>0</sup>	3.5×10 <sup>0</sup>	7.5×10 <sup>-1</sup>	8.7×10 <sup>-1</sup>	1.0×10 <sup>0</sup>	8.6×10 <sup>-1</sup>	5.4×10 <sup>-1</sup>	8.4×10 <sup>-1</sup>	7.8×10 <sup>0</sup>	2.6×10 <sup>0</sup>	7.2×10 <sup>-1</sup>	3.3×10 <sup>-1</sup>
<b>ANT</b>	9.3×10 <sup>-2</sup>	4.7×10 <sup>-2</sup>	1.2×10 <sup>0</sup>	7.1×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	2.3×10 <sup>-1</sup>	1.8×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	1.7×10 <sup>0</sup>	4.9×10 <sup>-1</sup>	8.8×10 <sup>-2</sup>	1.1×10 <sup>-1</sup>
<b>FLU</b>	6.7×10 <sup>-2</sup>	3.1×10 <sup>-1</sup>	2.3×10 <sup>0</sup>	9.4×10 <sup>-1</sup>	5.2×10 <sup>-1</sup>	4.3×10 <sup>-1</sup>	6.3×10 <sup>-1</sup>	3.9×10 <sup>-1</sup>	5.6×10 <sup>-2</sup>	1.6×10 <sup>-1</sup>	1.3×10 <sup>1</sup>	3.6×10 <sup>0</sup>	4.0×10 <sup>-1</sup>	1.5×10 <sup>0</sup>
<b>PYR</b>	8.4×10 <sup>-2</sup>	2.1×10 <sup>-1</sup>	2.0×10 <sup>0</sup>	8.2×10 <sup>-1</sup>	4.4×10 <sup>-1</sup>	4.1×10 <sup>-1</sup>	6.0×10 <sup>-1</sup>	3.7×10 <sup>-1</sup>	3.0×10 <sup>-2</sup>	1.8×10 <sup>-1</sup>	1.1×10 <sup>0</sup>	3.7×10 <sup>0</sup>	2.3×10 <sup>-1</sup>	1.9×10 <sup>0</sup>
<b>RET</b>	2.3×10 <sup>-2</sup>	6.9×10 <sup>-2</sup>	1.9×10 <sup>-2</sup>	3.3×10 <sup>-2</sup>	1.0×10 <sup>-1</sup>	8.9×10 <sup>-2</sup>	9.7×10 <sup>-3</sup>	4.0×10 <sup>-2</sup>	1.9×10 <sup>-2</sup>	4.1×10 <sup>-2</sup>	1.2×10 <sup>-3</sup>	7.3×10 <sup>-2</sup>	1.6×10 <sup>-2</sup>	8.1×10 <sup>-2</sup>
<b>BcP</b>	3.2×10 <sup>-3</sup>	1.6×10 <sup>-2</sup>	1.7×10 <sup>-1</sup>	9.6×10 <sup>-2</sup>	3.9×10 <sup>-2</sup>	3.8×10 <sup>-2</sup>	5.3×10 <sup>-2</sup>	2.6×10 <sup>-2</sup>	2.8×10 <sup>-3</sup>	1.2×10 <sup>-2</sup>	8.3×10 <sup>-1</sup>	3.4×10 <sup>-1</sup>	2.1×10 <sup>-2</sup>	1.9×10 <sup>-1</sup>
<b>CPP</b>	1.1×10 <sup>-1</sup>	4.8×10 <sup>-2</sup>	8.2×10 <sup>-1</sup>	2.8×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	3.1×10 <sup>-1</sup>	3.7×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	1.4×10 <sup>-2</sup>	5.5×10 <sup>-2</sup>	6.9×10 <sup>0</sup>	8.8×10 <sup>-1</sup>	1.0×10 <sup>-1</sup>	1.0×10 <sup>0</sup>
<b>BaA</b>	1.8×10 <sup>-2</sup>	9.3×10 <sup>-2</sup>	6.7×10 <sup>-1</sup>	4.4×10 <sup>-1</sup>	2.2×10 <sup>-1</sup>	1.6×10 <sup>-1</sup>	2.0×10 <sup>-1</sup>	1.0×10 <sup>-1</sup>	2.3×10 <sup>-2</sup>	5.7×10 <sup>-2</sup>	4.1×10 <sup>0</sup>	1.3×10 <sup>0</sup>	9.3×10 <sup>-2</sup>	7.1×10 <sup>-1</sup>

<b>CHR</b>	$9.5 \times 10^{-3}$	$7.9 \times 10^{-2}$	$5.8 \times 10^{-1}$	$4.8 \times 10^{-1}$	$1.8 \times 10^{-1}$	$1.6 \times 10^{-1}$	$1.3 \times 10^{-1}$	$7.9 \times 10^{-2}$	$2.3 \times 10^{-2}$	$4.4 \times 10^{-2}$	$2.7 \times 10^0$	$8.5 \times 10^{-1}$	$8.5 \times 10^{-2}$	$5.6 \times 10^{-1}$
<b>BbF</b>	$1.6 \times 10^{-2}$	$5.7 \times 10^{-2}$	$2.5 \times 10^{-1}$	$7.6 \times 10^{-2}$	$1.7 \times 10^{-1}$	$6.0 \times 10^{-2}$	$1.4 \times 10^{-1}$	$4.0 \times 10^{-2}$	$1.5 \times 10^{-2}$	$3.0 \times 10^{-2}$	$2.6 \times 10^0$	$1.1 \times 10^0$	$6.5 \times 10^{-2}$	$5.7 \times 10^{-1}$
<b>BkF</b>	$2.8 \times 10^{-2}$	$4.6 \times 10^{-2}$	$1.9 \times 10^{-1}$	$4.4 \times 10^{-2}$	$1.3 \times 10^{-1}$	$6.4 \times 10^{-2}$	$1.5 \times 10^{-1}$	$5.2 \times 10^{-2}$	$9.9 \times 10^{-3}$	$3.4 \times 10^{-2}$	$2.7 \times 10^0$	$1.0 \times 10^0$	$6.8 \times 10^{-3}$	$7.6 \times 10^{-1}$
<b>BeP</b>	$9.7 \times 10^{-3}$	$3.6 \times 10^{-2}$	$1.3 \times 10^{-1}$	$6.6 \times 10^{-2}$	$8.5 \times 10^{-2}$	$3.5 \times 10^{-2}$	$6.1 \times 10^{-2}$	$3.0 \times 10^{-2}$	$5.2 \times 10^{-3}$	$1.9 \times 10^{-2}$	$1.4 \times 10^0$	$5.0 \times 10^{-1}$	$2.8 \times 10^{-2}$	$3.9 \times 10^{-1}$
<b>BaP</b>	$1.6 \times 10^{-2}$	$5.3 \times 10^{-2}$	$2.9 \times 10^{-1}$	$1.4 \times 10^{-1}$	$1.4 \times 10^{-1}$	$8.6 \times 10^{-2}$	$1.6 \times 10^{-1}$	$6.5 \times 10^{-2}$	$1.1 \times 10^{-2}$	$4.7 \times 10^{-2}$	$3.6 \times 10^0$	$1.1 \times 10^0$	$3.7 \times 10^{-2}$	$8.3 \times 10^{-1}$
<b>PER</b>	$1.7 \times 10^{-3}$	$1.0 \times 10^{-2}$	$3.7 \times 10^{-2}$	$1.5 \times 10^{-2}$	$2.3 \times 10^{-2}$	$1.2 \times 10^{-2}$	$2.7 \times 10^{-2}$	$1.1 \times 10^{-2}$	$3.2 \times 10^{-3}$	$8.7 \times 10^{-3}$	$5.9 \times 10^{-1}$	$1.5 \times 10^{-1}$	$8.6 \times 10^{-3}$	$1.4 \times 10^{-1}$
<b>IcdP</b>	$5.3 \times 10^{-3}$	$4.0 \times 10^{-2}$	$1.9 \times 10^{-1}$	$9.1 \times 10^{-2}$	$1.0 \times 10^{-1}$	$5.4 \times 10^{-2}$	$1.1 \times 10^{-1}$	$4.0 \times 10^{-2}$	$6.1 \times 10^{-3}$	$3.1 \times 10^{-2}$	$3.3 \times 10^0$	$1.1 \times 10^0$	$4.1 \times 10^{-2}$	$7.6 \times 10^{-1}$
<b>DahA</b>	$2.7 \times 10^{-3}$	$4.4 \times 10^{-3}$	$2.8 \times 10^{-2}$	$3.6 \times 10^{-2}$	$1.6 \times 10^{-2}$	$2.3 \times 10^{-3}$	$1.8 \times 10^{-2}$	$4.9 \times 10^{-3}$	$1.2 \times 10^{-3}$	$4.4 \times 10^{-3}$	$2.7 \times 10^{-1}$	$6.0 \times 10^{-2}$	$5.1 \times 10^{-3}$	$5.7 \times 10^{-2}$
<b>BghiP</b>	$1.5 \times 10^{-2}$	$3.3 \times 10^{-2}$	$1.0 \times 10^{-1}$	$3.6 \times 10^{-2}$	$7.2 \times 10^{-2}$	$2.9 \times 10^{-2}$	$7.1 \times 10^{-2}$	$2.7 \times 10^{-2}$	$2.1 \times 10^{-3}$	$2.7 \times 10^{-2}$	$2.6 \times 10^0$	$8.8 \times 10^{-1}$	$4.3 \times 10^{-2}$	$6.7 \times 10^{-1}$
<b>DacP</b>	$4.1 \times 10^{-3}$	$5.0 \times 10^{-3}$	$7.5 \times 10^{-2}$	$2.7 \times 10^{-2}$	$2.3 \times 10^{-2}$	$2.1 \times 10^{-2}$	$4.9 \times 10^{-2}$	$1.2 \times 10^{-2}$	$9.8 \times 10^{-4}$	$4.2 \times 10^{-3}$	$9.2 \times 10^{-1}$	$1.4 \times 10^{-1}$	$1.6 \times 10^{-2}$	$1.8 \times 10^{-1}$
<b>DalP</b>	$3.9 \times 10^{-3}$	$5.1 \times 10^{-3}$	$3.4 \times 10^{-2}$	$2.8 \times 10^{-2}$	$2.0 \times 10^{-2}$	$1.0 \times 10^{-2}$	$2.3 \times 10^{-2}$	$1.2 \times 10^{-2}$	$2.0 \times 10^{-3}$	$3.8 \times 10^{-3}$	$3.1 \times 10^{-1}$	$9.5 \times 10^{-2}$	$1.1 \times 10^{-2}$	$8.7 \times 10^{-2}$
<b>DaeF</b>	$3.2 \times 10^{-3}$	$4.4 \times 10^{-3}$	$2.6 \times 10^{-2}$	$2.1 \times 10^{-2}$	$1.4 \times 10^{-2}$	$7.1 \times 10^{-3}$	$1.1 \times 10^{-2}$	$1.8 \times 10^{-3}$	$3.6 \times 10^{-4}$	$9.2 \times 10^{-4}$	$2.8 \times 10^{-1}$	$1.1 \times 10^{-1}$	$4.6 \times 10^{-3}$	$8.5 \times 10^{-2}$
<b>COR</b>	$5.6 \times 10^{-3}$	$1.5 \times 10^{-2}$	$8.2 \times 10^{-2}$	$1.2 \times 10^{-2}$	$3.0 \times 10^{-2}$	$2.8 \times 10^{-2}$	$6.5 \times 10^{-2}$	$2.3 \times 10^{-2}$	$1.8 \times 10^{-3}$	$1.4 \times 10^{-2}$	$1.7 \times 10^0$	$5.6 \times 10^{-1}$	$6.3 \times 10^{-2}$	$5.9 \times 10^{-1}$
<b>DaeP</b>	$1.2 \times 10^{-3}$	$2.1 \times 10^{-3}$	$3.1 \times 10^{-2}$	$2.2 \times 10^{-2}$	$2.5 \times 10^{-2}$	$2.1 \times 10^{-3}$	$1.2 \times 10^{-2}$	$5.4 \times 10^{-3}$	$1.7 \times 10^{-3}$	$1.4 \times 10^{-3}$	$4.1 \times 10^{-1}$	$1.3 \times 10^{-1}$	$4.6 \times 10^{-3}$	$1.8 \times 10^{-1}$
<b>DaiP</b>	$4.4 \times 10^{-3}$	$4.2 \times 10^{-3}$	$1.9 \times 10^{-2}$	$1.3 \times 10^{-2}$	$1.7 \times 10^{-2}$	$3.0 \times 10^{-3}$	$1.9 \times 10^{-2}$	$4.7 \times 10^{-3}$	$2.4 \times 10^{-3}$	$2.7 \times 10^{-3}$	$2.5 \times 10^{-1}$	$6.9 \times 10^{-2}$	$4.5 \times 10^{-4}$	$1.2 \times 10^{-1}$
<b>DahP</b>	$2.2 \times 10^{-3}$	$1.2 \times 10^{-3}$	$1.5 \times 10^{-3}$	$1.3 \times 10^{-2}$	$3.6 \times 10^{-3}$	$2.2 \times 10^{-4}$	$1.7 \times 10^{-3}$	$1.8 \times 10^{-3}$	$5.7 \times 10^{-4}$	$1.4 \times 10^{-3}$	$1.5 \times 10^{-2}$	$7.7 \times 10^{-3}$	$1.1 \times 10^{-3}$	$1.3 \times 10^{-2}$

**Table S3.** EFs of total parent, nitro-, and oxygenated PAHs from residential wood combustions. Data shown are means and standard derivations of triplicate combustion experiments. EFs are given in the unit of PAH mass per combusted C mass.

		<i>White Poplar</i>	<i>Elm</i>	<i>Locust</i>	<i>Maple</i>	<i>Fir</i>	<i>Larch</i>	<i>Water Fir</i>	<i>Cypress</i>	<i>Oak</i>	<i>Chinese Pine</i>	<i>Willow</i>	<i>Paulownia T.</i>	<i>Toon</i>
<b>28 pPAHs</b>	<b>μg/gC</b>	27.7±10.3	29.4±11.8	12.1±4.1	19.8±4.12	21.6±11.4	15.6±4.3	18.3±4.9	15.7±1.5	16.8±5.7	13.6±6.0	6.79±5.73	14.8±4.4	11.2±5.4
<b>9 nPAHs</b>	<b>μg/kgC</b>	11.0±4.5	21.9±5.1	7.88±1.01	13.7±5.9	9.75±1.72	9.34±2.57	12.9±4.8	14.3±5.5	12.7±3.6	10.7±6.0	5.83±4.69	7.89±0.70	5.79±0.34
<b>4 oPAHs</b>	<b>μg/gC</b>	1.10±0.91	2.59±1.11	1.24±0.33	1.52±0.78	1.29±0.15	0.728±0.245	1.32±0.38	1.42±0.36	1.34±0.32	0.782±0.563	0.782±0.607	1.31±0.61	1.30±0.93
		<i>White Birch</i>	<i>Ribbed Birch</i>	<i>Paulownia E.</i>	<i>Black Poplar</i>	<i>China Aspen</i>	<i>Chinaberry</i>	<i>Jujube</i>	<i>Persimmon</i>	<i>Mulberry</i>	<i>Peach</i>	<i>Lespedeza</i>	<i>Buxus sinica</i>	<i>Holly</i>
<b>28 pPAHs</b>	<b>μg/gC</b>	31.9±15.8	30.8±0.9	67.3±40.9	44.2±4.4	33.5±8.3	51.2±17.4	41.2±17.7	35.5±8.1	30.0±6.7	30.5±13.2	343±262	155±96	60.5±13.4
<b>9 nPAHs</b>	<b>μg/kgC</b>	25.0±8.3	17.4±2.9	32.8±37.4	37.2±24.8	16.3±3.8	28.8±0.6	29.7±6.1	36.5±14.9	20.0±2.3	24.3±3.9	82.7±46.2	86.3±41.3	33.1±5.0
<b>4 oPAHs</b>	<b>μg/gC</b>	1.72±0.50	1.93±0.55	8.50±10.5	16.9±18.5	3.41±1.51	4.17±1.60	2.80±0.50	2.79±0.94	2.97±0.25	2.14±0.98	19.2±10.3	12.3±8.1	4.13±0.55

**Table S4.** Average emission factors (mg/kg, dry basis) of **PAH derivatives** for residential wood combustions of different fuel types. For each fuel, combustion experiments were done in triplicate.

	1N-NAP	2N-NAP	5N-ACE	2N-FLO	9N-ANT	9N-PHE	3N-PHE	3N-FLA	1N-PYR	9FO	ATQ	BZO	BaAQ
<i>White Poplar</i>	1.7×10 <sup>-3</sup>	1.5×10 <sup>-3</sup>	n.d.	n.d.	1.2×10 <sup>-3</sup>	3.6×10 <sup>-4</sup>	1.2×10 <sup>-3</sup>	4.3×10 <sup>-4</sup>	n.d.	4.0×10 <sup>-1</sup>	6.7×10 <sup>-2</sup>	4.5×10 <sup>-2</sup>	1.4×10 <sup>-3</sup>
<i>Elm</i>	3.0×10 <sup>-3</sup>	3.4×10 <sup>-3</sup>	n.d.	n.d.	1.1×10 <sup>-3</sup>	3.1×10 <sup>-4</sup>	2.1×10 <sup>-4</sup>	2.1×10 <sup>-3</sup>	n.d.	9.2×10 <sup>-1</sup>	2.1×10 <sup>-1</sup>	7.0×10 <sup>-2</sup>	6.0×10 <sup>-3</sup>
<i>Locust</i>	1.1×10 <sup>-3</sup>	1.3×10 <sup>-3</sup>	n.d.	n.d.	7.2×10 <sup>-4</sup>	1.8×10 <sup>-4</sup>	1.1×10 <sup>-4</sup>	2.3×10 <sup>-4</sup>	n.d.	3.9×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	3.8×10 <sup>-2</sup>	2.8×10 <sup>-3</sup>
<i>Maple</i>	1.9×10 <sup>-3</sup>	2.1×10 <sup>-3</sup>	n.d.	n.d.	8.3×10 <sup>-4</sup>	2.6×10 <sup>-4</sup>	2.9×10 <sup>-4</sup>	7.8×10 <sup>-4</sup>	3.6×10 <sup>-4</sup>	4.5×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	8.8×10 <sup>-2</sup>	7.5×10 <sup>-3</sup>
<i>Fir</i>	1.8×10 <sup>-3</sup>	1.7×10 <sup>-3</sup>	n.d.	n.d.	7.2×10 <sup>-4</sup>	n.d.	n.d.	4.5×10 <sup>-4</sup>	3.6×10 <sup>-4</sup>	4.0×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	7.2×10 <sup>-2</sup>	4.7×10 <sup>-3</sup>
<i>Larch</i>	1.7×10 <sup>-3</sup>	1.6×10 <sup>-3</sup>	n.d.	n.d.	7.7×10 <sup>-4</sup>	1.8×10 <sup>-4</sup>	n.d.	n.d.	n.d.	2.4×10 <sup>-1</sup>	6.9×10 <sup>-2</sup>	2.8×10 <sup>-2</sup>	2.6×10 <sup>-3</sup>
<i>Water fir</i>	2.2×10 <sup>-3</sup>	2.4×10 <sup>-3</sup>	n.d.	n.d.	8.6×10 <sup>-4</sup>	2.4×10 <sup>-4</sup>	1.9×10 <sup>-4</sup>	5.2×10 <sup>-4</sup>	n.d.	4.3×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	5.5×10 <sup>-2</sup>	5.3×10 <sup>-3</sup>
<i>Cypress</i>	2.3×10 <sup>-3</sup>	2.4×10 <sup>-3</sup>	6.8×10 <sup>-4</sup>	n.d.	1.2×10 <sup>-3</sup>	2.9×10 <sup>-4</sup>	1.6×10 <sup>-4</sup>	4.0×10 <sup>-4</sup>	2.3×10 <sup>-4</sup>	3.5×10 <sup>-1</sup>	1.4×10 <sup>-1</sup>	5.1×10 <sup>-2</sup>	1.6×10 <sup>-1</sup>
<i>Oak</i>	1.9×10 <sup>-3</sup>	1.9×10 <sup>-3</sup>	n.d.	n.d.	1.1×10 <sup>-3</sup>	4.9×10 <sup>-4</sup>	2.7×10 <sup>-4</sup>	5.5×10 <sup>-4</sup>	n.d.	3.9×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	6.1×10 <sup>-2</sup>	9.9×10 <sup>-3</sup>
<i>Chinese Pine</i>	1.4×10 <sup>-3</sup>	1.4×10 <sup>-3</sup>	9.2×10 <sup>-4</sup>	n.d.	6.3×10 <sup>-4</sup>	1.7×10 <sup>-4</sup>	1.9×10 <sup>-4</sup>	4.2×10 <sup>-4</sup>	3.5×10 <sup>-4</sup>	2.2×10 <sup>-1</sup>	8.7×10 <sup>-2</sup>	6.2×10 <sup>-2</sup>	5.5×10 <sup>-3</sup>
<i>Willow</i>	8.2×10 <sup>-4</sup>	1.1×10 <sup>-3</sup>	n.d.	n.d.	7.4×10 <sup>-4</sup>	2.0×10 <sup>-4</sup>	n.d.	n.d.	n.d.	2.4×10 <sup>-1</sup>	8.3×10 <sup>-2</sup>	2.6×10 <sup>-2</sup>	1.5×10 <sup>-2</sup>
<i>Paulownia T</i>	1.3×10 <sup>-3</sup>	1.2×10 <sup>-3</sup>	n.d.	n.d.	1.0×10 <sup>-3</sup>	3.1×10 <sup>-4</sup>	n.d.	3.9×10 <sup>-4</sup>	n.d.	3.7×10 <sup>-1</sup>	1.5×10 <sup>-1</sup>	9.2×10 <sup>-2</sup>	3.0×10 <sup>-2</sup>
<i>Toon</i>	1.0×10 <sup>-3</sup>	1.1×10 <sup>-3</sup>	n.d.	n.d.	5.1×10 <sup>-4</sup>	4.0×10 <sup>-4</sup>	n.d.	n.d.	n.d.	2.4×10 <sup>-1</sup>	6.2×10 <sup>-2</sup>	3.4×10 <sup>-2</sup>	2.7×10 <sup>-1</sup>
<i>White Birch</i>	2.9×10 <sup>-3</sup>	3.3×10 <sup>-3</sup>	3.0×10 <sup>-3</sup>	n.d.	1.3×10 <sup>-3</sup>	3.5×10 <sup>-4</sup>	2.8×10 <sup>-4</sup>	8.0×10 <sup>-4</sup>	n.d.	5.3×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	1.1×10 <sup>-1</sup>	7.0×10 <sup>-3</sup>
<i>Ribbed Birch</i>	2.5×10 <sup>-3</sup>	2.8×10 <sup>-3</sup>	5.4×10 <sup>-4</sup>	6.3×10 <sup>-5</sup>	8.4×10 <sup>-4</sup>	4.2×10 <sup>-4</sup>	3.0×10 <sup>-4</sup>	5.6×10 <sup>-4</sup>	3.6×10 <sup>-4</sup>	5.8×10 <sup>-1</sup>	1.9×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	9.5×10 <sup>-3</sup>
<i>Paulownia E.</i>	5.1×10 <sup>-3</sup>	6.8×10 <sup>-3</sup>	1.0×10 <sup>-3</sup>	3.9×10 <sup>-4</sup>	2.2×10 <sup>-3</sup>	7.3×10 <sup>-4</sup>	4.5×10 <sup>-4</sup>	9.0×10 <sup>-4</sup>	2.7×10 <sup>-4</sup>	3.3×10 <sup>0</sup>	6.8×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	1.3×10 <sup>-2</sup>
<i>Black Poplar</i>	5.5×10 <sup>-3</sup>	6.2×10 <sup>-3</sup>	5.2×10 <sup>-4</sup>	4.5×10 <sup>-4</sup>	2.7×10 <sup>-3</sup>	6.1×10 <sup>-4</sup>	5.2×10 <sup>-4</sup>	7.1×10 <sup>-4</sup>	1.3×10 <sup>-3</sup>	6.1×10 <sup>0</sup>	1.3×10 <sup>0</sup>	5.0×10 <sup>-1</sup>	2.5×10 <sup>-2</sup>
<i>China Aspen</i>	2.7×10 <sup>-3</sup>	2.3×10 <sup>-3</sup>	n.d.	1.7×10 <sup>-4</sup>	1.0×10 <sup>-3</sup>	4.2×10 <sup>-4</sup>	3.2×10 <sup>-4</sup>	7.9×10 <sup>-4</sup>	2.5×10 <sup>-4</sup>	1.2×10 <sup>0</sup>	1.9×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	5.1×10 <sup>-3</sup>
<i>Chinaberry</i>	3.7×10 <sup>-3</sup>	4.4×10 <sup>-3</sup>	3.2×10 <sup>-3</sup>	2.7×10 <sup>-4</sup>	1.4×10 <sup>-3</sup>	6.8×10 <sup>-4</sup>	2.9×10 <sup>-4</sup>	5.4×10 <sup>-4</sup>	6.0×10 <sup>-4</sup>	1.5×10 <sup>0</sup>	3.6×10 <sup>-1</sup>	1.3×10 <sup>-1</sup>	9.9×10 <sup>-3</sup>
<i>Jujube</i>	3.9×10 <sup>-3</sup>	4.4×10 <sup>-3</sup>	1.7×10 <sup>-3</sup>	1.4×10 <sup>-4</sup>	1.4×10 <sup>-3</sup>	7.4×10 <sup>-4</sup>	4.1×10 <sup>-4</sup>	9.2×10 <sup>-4</sup>	5.0×10 <sup>-4</sup>	7.5×10 <sup>-1</sup>	2.0×10 <sup>-1</sup>	3.2×10 <sup>-1</sup>	3.4×10 <sup>-2</sup>
<i>Persimmon</i>	4.0×10 <sup>-3</sup>	4.6×10 <sup>-3</sup>	5.2×10 <sup>-3</sup>	n.d.	1.2×10 <sup>-3</sup>	8.2×10 <sup>-4</sup>	4.8×10 <sup>-4</sup>	4.0×10 <sup>-4</sup>	3.0×10 <sup>-4</sup>	8.9×10 <sup>-1</sup>	2.2×10 <sup>-1</sup>	1.7×10 <sup>-1</sup>	9.2×10 <sup>-3</sup>
<i>Mulberry</i>	3.2×10 <sup>-3</sup>	3.6×10 <sup>-3</sup>	n.d.	n.d.	1.1×10 <sup>-3</sup>	5.2×10 <sup>-4</sup>	1.5×10 <sup>-4</sup>	1.0×10 <sup>-3</sup>	n.d.	1.0×10 <sup>0</sup>	2.5×10 <sup>-1</sup>	7.5×10 <sup>-2</sup>	6.5×10 <sup>-2</sup>



<i>Peach</i>	$3.0 \times 10^{-3}$	$3.3 \times 10^{-3}$	n.d.	n.d.	$1.2 \times 10^{-3}$	$3.0 \times 10^{-4}$	$1.8 \times 10^{-4}$	$4.4 \times 10^{-3}$	$3.7 \times 10^{-4}$	$7.0 \times 10^{-1}$	$1.6 \times 10^{-1}$	$1.0 \times 10^{-1}$	$7.0 \times 10^{-3}$
<i>Lespedeza</i>	$1.2 \times 10^{-2}$	$1.3 \times 10^{-2}$	$3.4 \times 10^{-3}$	$4.9 \times 10^{-4}$	$1.8 \times 10^{-3}$	$2.8 \times 10^{-3}$	$2.4 \times 10^{-3}$	$7.8 \times 10^{-4}$	$2.9 \times 10^{-3}$	$3.5 \times 10^0$	$1.7 \times 10^0$	$3.7 \times 10^0$	$1.3 \times 10^{-1}$
<i>Buxus sinica</i>	$1.1 \times 10^{-2}$	$1.2 \times 10^{-2}$	$6.2 \times 10^{-3}$	$3.9 \times 10^{-4}$	$3.0 \times 10^{-3}$	$2.3 \times 10^{-3}$	$1.9 \times 10^{-3}$	$1.7 \times 10^{-3}$	$2.1 \times 10^{-3}$	$2.2 \times 10^0$	$1.2 \times 10^0$	$2.2 \times 10^0$	$9.6 \times 10^{-2}$
<i>Holly</i>	$4.4 \times 10^{-3}$	$5.5 \times 10^{-3}$	$2.6 \times 10^{-3}$	$8.7 \times 10^{-5}$	$1.2 \times 10^{-3}$	$6.5 \times 10^{-4}$	$5.5 \times 10^{-4}$	$1.2 \times 10^{-3}$	$5.1 \times 10^{-4}$	$1.1 \times 10^0$	$3.8 \times 10^{-1}$	$3.1 \times 10^{-1}$	$2.6 \times 10^{-2}$
<i>Bamboo</i>	$3.3 \times 10^{-3}$	$3.5 \times 10^{-3}$	$3.4 \times 10^{-3}$	n.d.	$1.5 \times 10^{-3}$	$1.2 \times 10^{-3}$	$5.6 \times 10^{-4}$	$9.3 \times 10^{-4}$	$1.1 \times 10^{-3}$	$1.0 \times 10^0$	$4.1 \times 10^{-1}$	$7.0 \times 10^{-1}$	$5.1 \times 10^{-2}$

**Table S5.** Correlation coefficient and *p* values between EFs of measured PAH derivatives.

		1N-NAP	2N-NAP	5N-ACE	2N-FLO	9N-ANT	9N-PHE	9N-PHE	3N-FLA	1N-PYR	9FO	ATQ	BZO	BaAQ
1N-NAP	<i>r</i>	1.000												
	<i>p</i>													
	n	27												
2N-NAP	<i>r</i>	0.991	1.000											
	<i>p</i>	8.5E-24												
	n	27	27											
5N-ACE	<i>r</i>	0.501	0.518	1.000										
	<i>p</i>	4.0E-02	3.5E-02											
	n	13	13	13										
2N-FLO	<i>r</i>	0.579	0.560	0.239	1.000									
	<i>p</i>	5.1E-02	5.8E-02	2.8E-01										
	n	9	9	8	9									
9N-ANT	<i>r</i>	0.824	0.844	0.254	0.819	1.000								
	<i>p</i>	6.4E-08	1.6E-08	2.0E-01	3.4E-03									
	n	27	27	13	9	27								
9N-PHE	<i>r</i>	0.846	0.849	0.573	0.655	0.737	1.000							
	<i>p</i>	2.7E-08	2.1E-08	2.0E-02	2.8E-02	8.6E-06								
	n	26	26	13	9	26	26							

9N-PHE	<i>r</i>	0.707	0.667	0.530	0.557	0.493	0.833	1.000					
	<i>p</i>	1.2E-04	3.5E-04	3.1E-02	6.0E-02	9.8E-03	7.6E-07						
	<i>n</i>	22	22	13	9	22	22	22					
3N-FLA	<i>r</i>	0.463	0.472	0.488	0.061	0.426	0.365	0.304	1.000				
	<i>p</i>	1.1E-02	9.9E-03	4.5E-02	4.4E-01	1.9E-02	4.3E-02	8.5E-02					
	<i>n</i>	24	24	13	9	24	23	22	24				
1N-PYR	<i>r</i>	0.802	0.795	0.395	0.587	0.642	0.776	0.820	0.332	1.000			
	<i>p</i>	9.3E-05	1.2E-04	1.0E-01	4.8E-02	3.7E-03	3.3E-04	9.1E-05	1.0E-01				
	<i>n</i>	16	16	12	9	16	15	15	16	16			
9FO	<i>r</i>									1.000	0.940	0.821	0.637
	<i>p</i>										1.6E-13	7.8E-08	1.8E-04
	<i>n</i>									27	27	27	27
ATQ	<i>r</i>										1.000	0.901	0.793
	<i>p</i>											7.1E-11	4.0E-07
	<i>n</i>										27	27	27
BZO	<i>r</i>											1.000	0.816
	<i>p</i>												1.1E-07
	<i>n</i>											27	27
BaAQ	<i>r</i>												1.000
	<i>p</i>												
	<i>n</i>												27

**Table S6.** Correlation coefficient and *p* values between measured EFs of PAH derivatives and their parent PAHs.

Derivative	1N-NAP	2N-NAP	5N-ACE	2N-FLO	9N-ANT	9N-PHE	3N-PHE	3N-FLA	1N-PYR	9FO	ATQ	BaAQ
parent	NAP	NAP	ACE	FLO	ANT	PHE	PHE	FLA	PYR	FLO	ANT	BaA
<i>r</i>	0.843	0.829	0.375	0.684	0.810	0.858	0.771	0.465	0.890	0.838	0.916	0.588

<i>p</i>	$3.4 \times 10^{-8}$	$9.2 \times 10^{-8}$	$2.1 \times 10^{-1}$	$4.2 \times 10^{-2}$	$3.1 \times 10^{-7}$	$2.1 \times 10^{-8}$	$2.7 \times 10^{-5}$	$2.2 \times 10^{-2}$	$3.9 \times 10^{-6}$	$4.8 \times 10^{-8}$	$2.1 \times 10^{-11}$	$1.3 \times 10^{-3}$
N	27	27	13	9	27	26	22	24	16	27	27	27

**Table S7.** Correlation coefficient and *p* values between EFs of measured individual PAHs.

		NAP	ACY	ACE	FLO	PHE	ANT	FLA	PYR	RET	BcP	CPP	BaA	CHR	BbF
NAP	<i>r</i>	1.000	0.957	0.866	0.922	0.850	0.843	0.826	0.828	<b>-0.426</b>	0.837	0.787	0.842	0.835	0.834
	<i>p</i>		<b>6.9E-15</b>	<b>5.6E-09</b>	<b>8.6E-12</b>	<b>2E-08</b>	<b>3.5E-08</b>	<b>1.1E-07</b>	<b>9.9E-08</b>	<b>2.7E-02</b>	<b>5.1E-08</b>	<b>1.1E-06</b>	<b>3.7E-08</b>	<b>6E-08</b>	<b>6.7E-08</b>
	n		27	27	27	27	27	27	27	<b>27</b>	27	27	27	27	27
ACY	<i>r</i>		1.000	0.896	0.982	0.918	0.912	0.872	0.879	<b>-0.385</b>	0.885	0.821	0.883	0.871	0.873
	<i>p</i>			<b>2.7E-10</b>	<b>1.7E-19</b>	<b>1.6E-11</b>	<b>3.7E-11</b>	<b>3.1E-09</b>	<b>1.6E-09</b>	<b>4.8E-02</b>	<b>8.9E-10</b>	<b>1.5E-07</b>	<b>1E-09</b>	<b>3.4E-09</b>	<b>3E-09</b>
	n			27	27	27	27	27	27	<b>27</b>	27	27	27	27	27
ACE	<i>r</i>			1.000	0.913	0.804	0.821	0.698	0.698	<b>-0.307</b>	0.734	0.810	0.772	0.764	0.719
	<i>p</i>				<b>3.2E-11</b>	<b>4.5E-07</b>	<b>1.6E-07</b>	<b>5.2E-05</b>	<b>5.1E-05</b>	<b>1.2E-01</b>	<b>1.3E-05</b>	<b>3.2E-07</b>	<b>2.4E-06</b>	<b>3.5E-06</b>	<b>2.3E-05</b>
	n				27	27	27	27	27	<b>27</b>	27	27	27	27	27
FLO	<i>r</i>				1.000	0.947	0.948	0.887	0.890	<b>-0.352</b>	0.887	0.846	0.899	0.886	0.874
	<i>p</i>					<b>8.1E-14</b>	<b>6.9E-14</b>	<b>7.5E-10</b>	<b>5.2E-10</b>	<b>7.2E-02</b>	<b>7.1E-10</b>	<b>2.8E-08</b>	<b>1.9E-10</b>	<b>8.3E-10</b>	<b>2.6E-09</b>
	n					27	27	27	27	<b>27</b>	27	27	27	27	27
PHE	<i>r</i>					1.000	0.994	0.967	0.962	<b>-0.296</b>	0.945	0.848	0.949	0.943	0.929
	<i>p</i>						<b>1.1E-25</b>	<b>1.9E-16</b>	<b>1.2E-15</b>	<b>1.3E-01</b>	<b>1.1E-13</b>	<b>2.4E-08</b>	<b>5E-14</b>	<b>1.7E-13</b>	<b>2.8E-12</b>
	n						27	27	27	<b>27</b>	27	27	27	27	27
ANT	<i>r</i>						1.000	0.958	0.953	<b>-0.308</b>	0.931	0.865	0.940	0.934	0.911
	<i>p</i>							<b>4.3E-15</b>	<b>2E-14</b>	<b>1.2E-01</b>	<b>1.8E-12</b>	<b>6E-09</b>	<b>3.5E-13</b>	<b>1.2E-12</b>	<b>3.9E-11</b>
	n							27	27	<b>27</b>	27	27	27	27	27
FLA	<i>r</i>							1.000	0.998	<b>-0.305</b>	0.978	0.836	0.964	0.960	0.957
	<i>p</i>								<b>7.1E-31</b>	<b>1.2E-01</b>	<b>2E-18</b>	<b>5.5E-08</b>	<b>6.4E-16</b>	<b>2.8E-15</b>	<b>5.4E-15</b>

	n													
PYR	<i>r</i>	1.000	<b>27</b>	0.983	0.844	0.966	0.960	0.962						
	<i>p</i>		<b>1.1E-01</b>	<b>8.5E-20</b>	<b>3.2E-08</b>	<b>3.1E-16</b>	<b>2.6E-15</b>	<b>1.3E-15</b>						
	n		<b>27</b>	27	27	27	27	27						
RET	<i>r</i>		<b>1.000</b>	<b>-0.298</b>	<b>-0.364</b>	<b>-0.321</b>	<b>-0.266</b>	<b>-0.359</b>						
	<i>p</i>			<b>1.3E-01</b>	<b>6.2E-02</b>	<b>1.0E-01</b>	<b>1.8E-01</b>	<b>6.6E-02</b>						
	n			<b>27</b>	<b>27</b>	<b>27</b>	<b>27</b>	<b>27</b>						
BcP	<i>r</i>			1.000	0.885	0.990	0.987	0.987						
	<i>p</i>				<b>8.5E-10</b>	<b>1.1E-22</b>	<b>1.7E-21</b>	<b>1.4E-21</b>						
	n				27	27	27	27						
CPP	<i>r</i>				1.000	0.923	0.916	0.898						
	<i>p</i>					<b>7.1E-12</b>	<b>2E-11</b>	<b>2.2E-10</b>						
	n					27	27	27						
BaA	<i>r</i>						1.000	0.995	0.990					
	<i>p</i>							<b>4.9E-27</b>	<b>5.5E-23</b>					
	n							27	27					
CHR	<i>r</i>								1.000	0.984				
	<i>p</i>									<b>4E-20</b>				
	n									27				
BbF	<i>r</i>												1.000	
	<i>p</i>													
	n													

**Table S7 (continue).** Correlation coefficient and *p* values between EFs of measured individual parent PAHs.

		BkF	BeP	BaP	PER	IcdP	DahA	BghiP	DacP	DalP	DaeF	COR	DaeP	DaiP	DahP
NAP	<i>r</i>	0.828	0.828	0.837	0.817	0.832	0.791	0.829	0.841	0.806	0.807	0.828	0.838	0.822	0.774
	<i>p</i>	<b>9.8E-08</b>	<b>1E-07</b>	<b>5.2E-08</b>	<b>2E-07</b>	<b>7.3E-08</b>	<b>9.2E-07</b>	<b>9E-08</b>	<b>3.8E-08</b>	<b>3.8E-07</b>	<b>3.8E-07</b>	<b>1E-07</b>	<b>5E-08</b>	<b>1.46E-07</b>	<b>3.45E-06</b>

	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
ACY	r	0.872	0.866	0.875	0.858	0.872	0.816	0.867	0.876	0.847	0.830	0.864	0.866	0.844	0.789
	p	3.3E-09	5.4E-09	2.4E-09	1.1E-08	3.2E-09	2.1E-07	5.1E-09	2.1E-09	2.5E-08	8.8E-08	6.5E-09	5.6E-09	3.15E-08	1.64E-06
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
ACE	r	0.690	0.696	0.738	0.698	0.723	0.713	0.685	0.803	0.760	0.738	0.723	0.776	0.790	0.737
	p	6.7E-05	5.6E-05	1.1E-05	5.2E-05	2.1E-05	3E-05	8E-05	4.6E-07	4.3E-06	1.1E-05	2.1E-05	2E-06	9.72E-07	1.72E-05
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
FLO	r	0.864	0.863	0.878	0.860	0.873	0.834	0.860	0.886	0.862	0.842	0.860	0.872	0.858	0.795
	p	6.4E-09	7.1E-09	1.8E-09	9E-09	2.9E-09	6.5E-08	8.8E-09	7.9E-10	7.6E-09	3.6E-08	8.7E-09	3.2E-09	1.03E-08	1.24E-06
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
PHE	r	0.917	0.922	0.921	0.913	0.919	0.901	0.909	0.900	0.895	0.884	0.884	0.872	0.865	0.797
	p	1.8E-11	8.8E-12	9.9E-12	3.2E-11	1.4E-11	1.6E-10	5.4E-11	1.8E-10	2.8E-10	9.4E-10	9.9E-10	3.2E-09	5.71E-09	1.08E-06
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
ANT	r	0.899	0.904	0.909	0.903	0.906	0.894	0.892	0.903	0.890	0.881	0.876	0.868	0.857	0.804
	p	1.9E-10	1E-10	5.5E-11	1.2E-10	8.5E-11	3.3E-10	4.3E-10	1.1E-10	5.3E-10	1.3E-09	2.3E-09	4.7E-09	1.16E-08	7.36E-07
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
FLA	r	0.958	0.957	0.946	0.949	0.944	0.931	0.945	0.894	0.907	0.902	0.903	0.855	0.856	0.822
	p	5.2E-15	5.9E-15	9.5E-14	5.2E-14	1.4E-13	1.8E-12	1.2E-13	3.2E-10	7.4E-11	1.3E-10	1.2E-10	1.3E-08	1.3E-08	2.62E-07
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
PYR	r	0.966	0.963	0.951	0.955	0.951	0.933	0.953	0.901	0.914	0.907	0.914	0.865	0.860	0.832
	p	3.6E-16	1.1E-15	2.7E-14	1.2E-14	2.9E-14	1.4E-12	1.9E-14	1.5E-10	2.6E-11	6.9E-11	2.6E-11	6E-09	9.22E-09	1.34E-07
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
RET	r	-0.377	-0.366	-0.383	-0.391	-0.393	-0.353	-0.405	-0.432	-0.374	-0.409	-0.429	-0.396	-0.398	-0.335
	p	5.3E-02	6.1E-02	4.9E-02	4.4E-02	4.3E-02	7.1E-02	3.6E-02	2.5E-02	5.5E-02	3.4E-02	2.6E-02	4.1E-02	4.0E-02	9.4E-02
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
BcP	r	0.986	0.986	0.981	0.973	0.978	0.967	0.974	0.935	0.957	0.946	0.947	0.910	0.910	0.888
	p	4.4E-21	3.8E-21	2.4E-19	1.8E-17	1.6E-18	2.3E-16	1.1E-17	9.1E-13	6.5E-15	1.1E-13	7.9E-14	4.7E-11	4.55E-11	1.45E-09

	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
CPP	r	0.881	0.888	0.926	0.910	0.918	0.931	0.893	0.971	0.947	0.948	0.934	0.925	0.939	0.919
	p	1.3E-09	6.2E-10	4.1E-12	5E-11	1.5E-11	2E-12	3.7E-10	4.9E-17	8.3E-14	5.7E-14	1E-12	5.1E-12	4.68E-13	3.57E-11
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
BaA	r	0.979	0.984	0.989	0.977	0.985	0.985	0.975	0.964	0.976	0.968	0.960	0.940	0.945	0.912
	p	1E-18	2.4E-20	1.8E-22	2.1E-18	1.2E-20	1.6E-20	9.5E-18	7.8E-16	4.7E-18	1.6E-16	2.7E-15	3.8E-13	1.19E-13	8.85E-11
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
CHR	r	0.971	0.978	0.982	0.969	0.975	0.981	0.964	0.952	0.966	0.959	0.947	0.930	0.937	0.903
	p	4.9E-17	1.2E-18	1.5E-19	9.2E-17	6.1E-18	2.2E-19	5.8E-16	2.3E-14	3.4E-16	3.5E-15	7E-14	2.3E-12	6.89E-13	2.82E-10
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
BbF	r	0.994	0.998	0.994	0.986	0.995	0.981	0.992	0.956	0.974	0.971	0.972	0.940	0.947	0.893
	p	1.3E-25	9.8E-31	1.1E-25	8.1E-21	4.6E-26	2.5E-19	5.2E-24	8.6E-15	1.4E-17	5.2E-17	2.8E-17	3.8E-13	8.12E-14	8.83E-10
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
BkF	r	1.000	0.997	0.991	0.988	0.991	0.967	0.994	0.945	0.964	0.959	0.971	0.924	0.926	0.882
	p		9.8E-30	4.4E-23	5.9E-22	1.5E-23	2.5E-16	6.3E-26	1.3E-13	7.7E-16	3.7E-15	5.6E-17	6.5E-12	4.2E-12	2.72E-09
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
BeP	r		1.000	0.993	0.990	0.994	0.977	0.995	0.950	0.969	0.967	0.973	0.933	0.935	0.890
	p			1.3E-24	5.1E-23	3.9E-25	2.8E-18	1.7E-26	3.6E-14	1.2E-16	2.6E-16	2.2E-17	1.3E-12	1.01E-12	1.16E-09
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
BaP	r			1.000	0.990	0.997	0.984	0.992	0.973	0.983	0.982	0.983	0.951	0.960	0.914
	p				5.2E-23	8E-30	2.5E-20	3E-24	2.2E-17	4.7E-20	1.6E-19	5.1E-20	3E-14	2.13E-15	6.58E-11
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
PER	r				1.000	0.991	0.973	0.993	0.966	0.973	0.971	0.980	0.931	0.935	0.906
	p					1.4E-23	2E-17	2.4E-24	3.1E-16	2.3E-17	4.9E-17	4.5E-19	1.9E-12	9.05E-13	1.85E-10
	n	27	27	27	27	27	27	27	27	27	27	27	27	27	26
IcdP	r					1.000	0.980	0.996	0.974	0.983	0.981	0.989	0.956	0.959	0.913
	p						4.8E-19	2.4E-28	1.3E-17	7.8E-20	2E-19	1.6E-22	7.5E-15	3.74E-15	7.7E-11

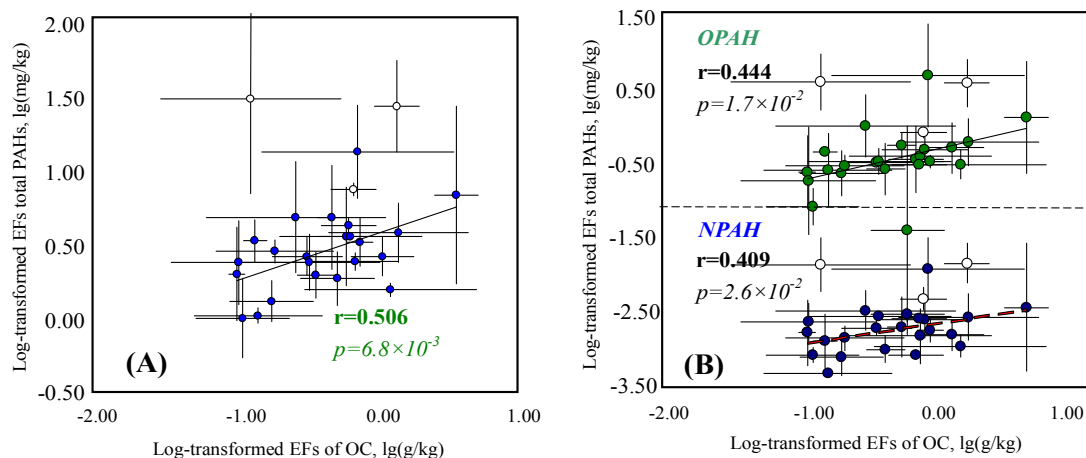
	n	27	27	27	27	27	27	27	27	26
DahA	<i>r</i>	1.000	0.969	0.961	0.980	0.985	0.963	0.940	0.951	0.915
	<i>p</i>		1E-16	1.8E-15	4.8E-19	1.3E-20	1.1E-15	3.8E-13	3.33E-14	5.83E-11
	n		27	27	27	27	27	27	27	26
BghiP	<i>r</i>		1.000	0.959	0.968	0.969	0.986	0.943	0.941	0.889
	<i>p</i>			3.8E-15	1.4E-16	9.4E-17	6.3E-21	1.9E-13	3.08E-13	1.24E-09
	n			27	27	27	27	27	27	26
DacP	<i>r</i>			1.000	0.982	0.980	0.982	0.966	0.971	0.939
	<i>p</i>				1.1E-19	4.3E-19	1.4E-19	3E-16	5.5E-17	1.18E-12
	n				27	27	27	27	27	26
DalP	<i>r</i>				1.000	0.990	0.979	0.956	0.974	0.949
	<i>p</i>					8.4E-23	8.8E-19	7.7E-15	1.44E-17	1.58E-13
	n					27	27	27	27	26
DaeF	<i>r</i>					1.000	0.982	0.959	0.978	0.932
	<i>p</i>						1.8E-19	3.8E-15	1.93E-18	4.31E-12
	n						27	27	27	26
COR	<i>r</i>						1.000	0.969	0.963	0.918
	<i>p</i>							9.1E-17	9.64E-16	4.14E-11
	n							27	27	26
DaeP	<i>r</i>							1.000	0.962	0.921
	<i>p</i>								1.49E-15	2.57E-11
	n								27	26
DaiP	<i>r</i>								1.000	0.909
	<i>p</i>									1.33E-10
	n									26
DahP	<i>r</i>									1.000
	<i>p</i>									

n

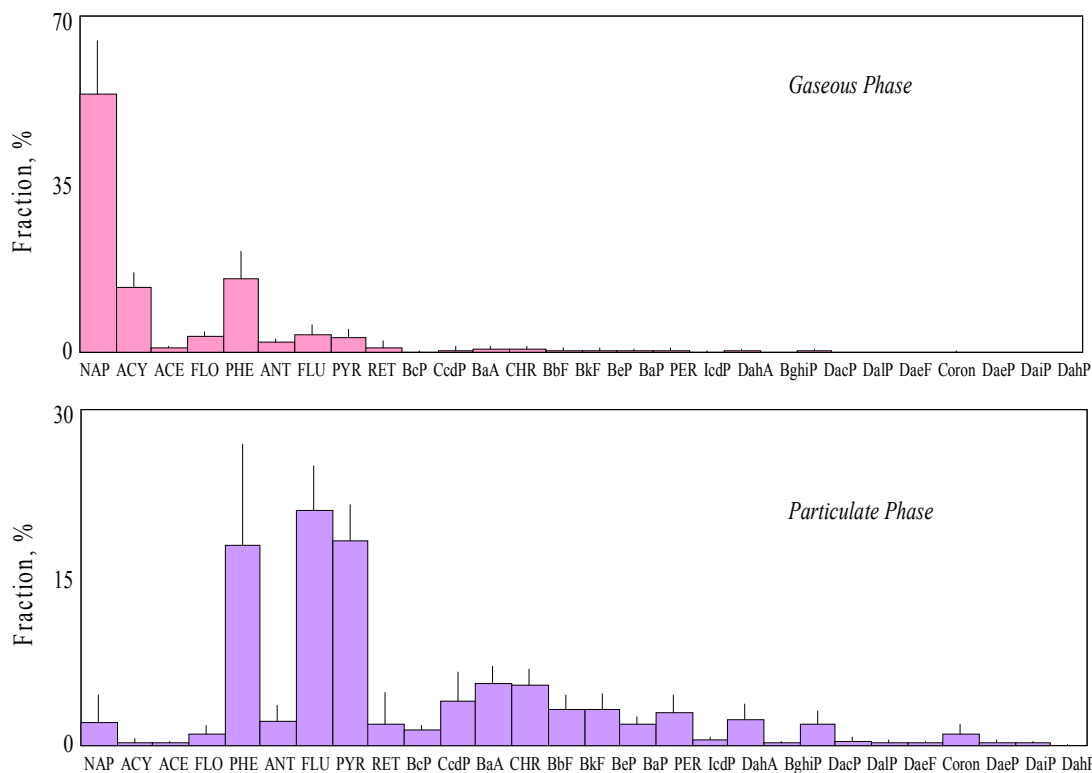
**Table S8.** Correlation coefficient and *p* values between EF ratios of derivatives to parent PAHs ( $EF_{nPAHs}/EF_{pPAHs}$ ), and  $EF_{pPAHs}$ .

Ratio	1N-NAP/NAP	2N-NAP/NAP	9N-ANT/ANT	9N-PHE/PHE	3N-PHE/PHE	3N-FLA/FLA	9FO/FLO	ATQ/ANT	BaAQ/BaA
parent	NAP	NAP	ANT	PHE	PHE	FLA	FLO	ANT	BaA
<i>r</i>	-0.481	-0.379	-0.719	0.107	-0.234	-0.153	-0.213	-0.321	-0.449
<i>p</i>	$2.0 \times 10^{-2}$	$7.4 \times 10^{-2}$	$1.1 \times 10^{-4}$	$6.7 \times 10^{-1}$	$3.5 \times 10^{-1}$	$5.2 \times 10^{-1}$	$3.3 \times 10^{-1}$	$1.4 \times 10^{-1}$	$3.1 \times 10^{-2}$
N	23	23	23	18	18	20	23	23	23

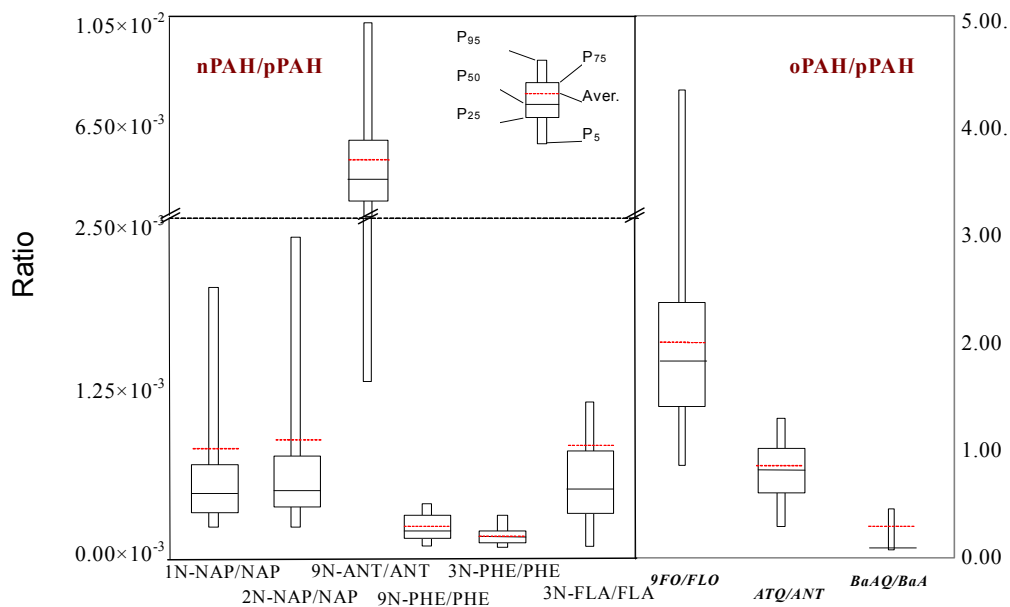




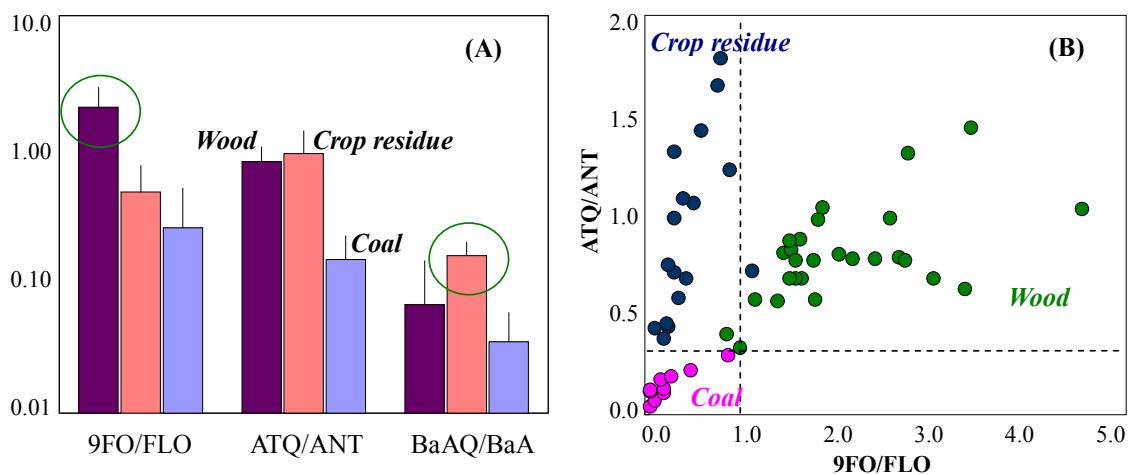
**Figure S1.** Relationship between  $EF_{OC}$  and PAH EFs (A: pPAHs, B: nPAHs and oPAHs). Data are shown as means and standard deviations of triplicate measurements for fuel wood (filled circles) and brushwood (white circles).



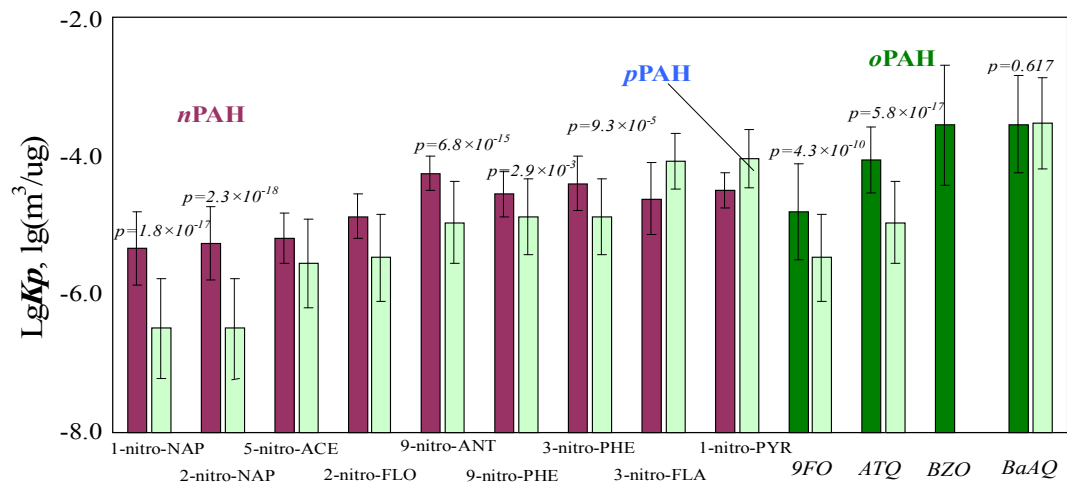
**Figure S2.** Composition profiles of gaseous and particulate phase PAHs from residential wood combustion. Data shown are means and standard deviations of those from all wood combustion experiments.



**Figure S3.** EF ratios of derivatives and pPAHs from tested wood combustion. Data shown are means and 5%, 25%, 75%, and 95% of all results in this study.



**Figure S4.** Comparison of calculated  $R_o$  values of 9FO/FLO, ATQ/ANT, and BaAQ/BaA for residential wood, coal and crop residue burning.



**Figure S5.** Comparison of calculated  $K_p$  of pPAHs and their derivatives from residential wood combustion in this study