SUPPLEMENTARY INFORMATION FOR

Organic Composition, Chemistry, and Photochemistry of Urban Film in Leipzig, Germany

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Figure S1
Selected meteorological and air quality data at the Leipzig-Mitte air quality monitoring station for the duration of the sampling campaign (September 16–October 25, 2014).

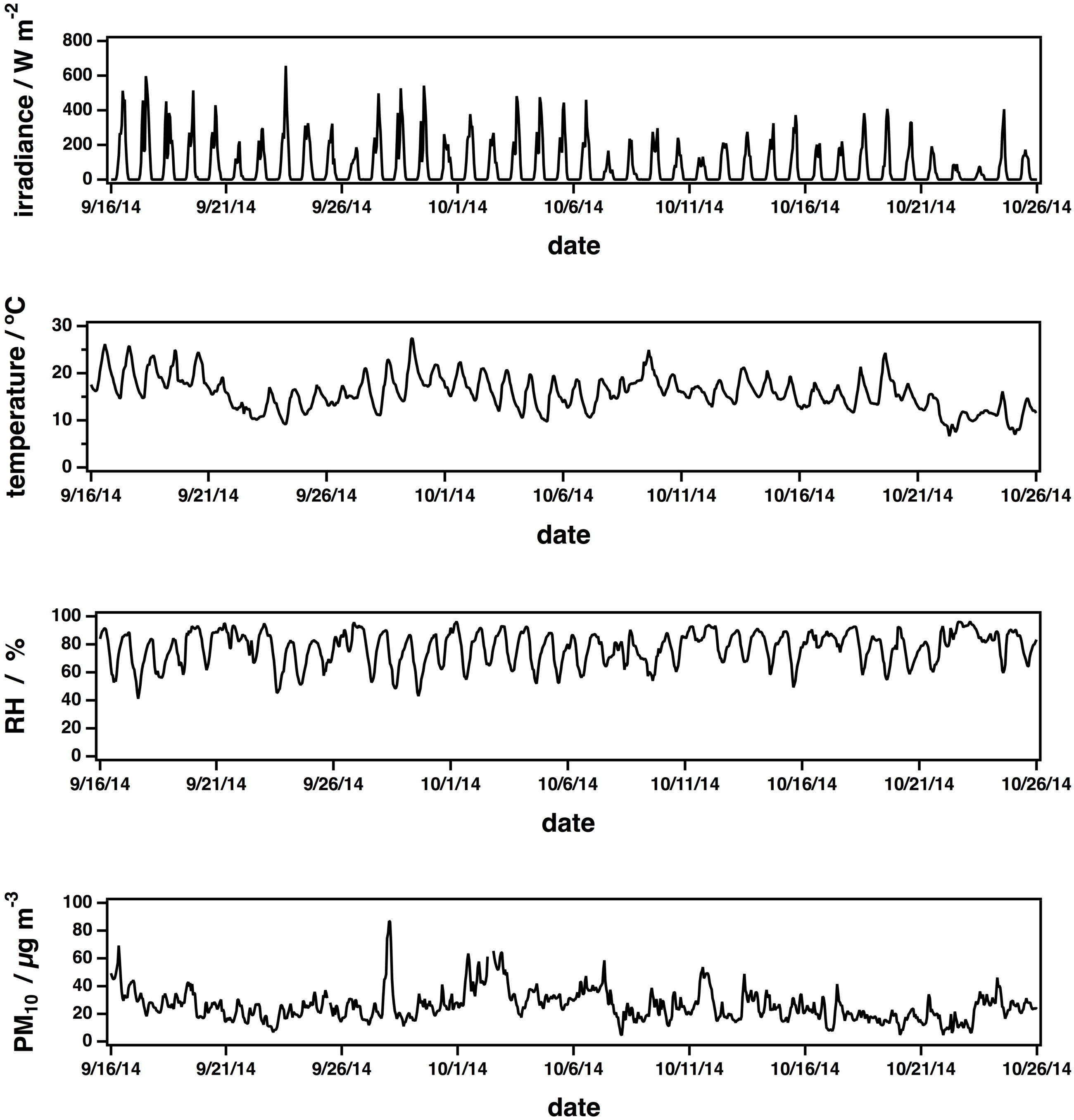


Figure S1 (continued)
Selected meteorological and air quality data at the Leipzig-Mitte air quality monitoring station for the duration of the sampling campaign (September 16–October 25, 2014).

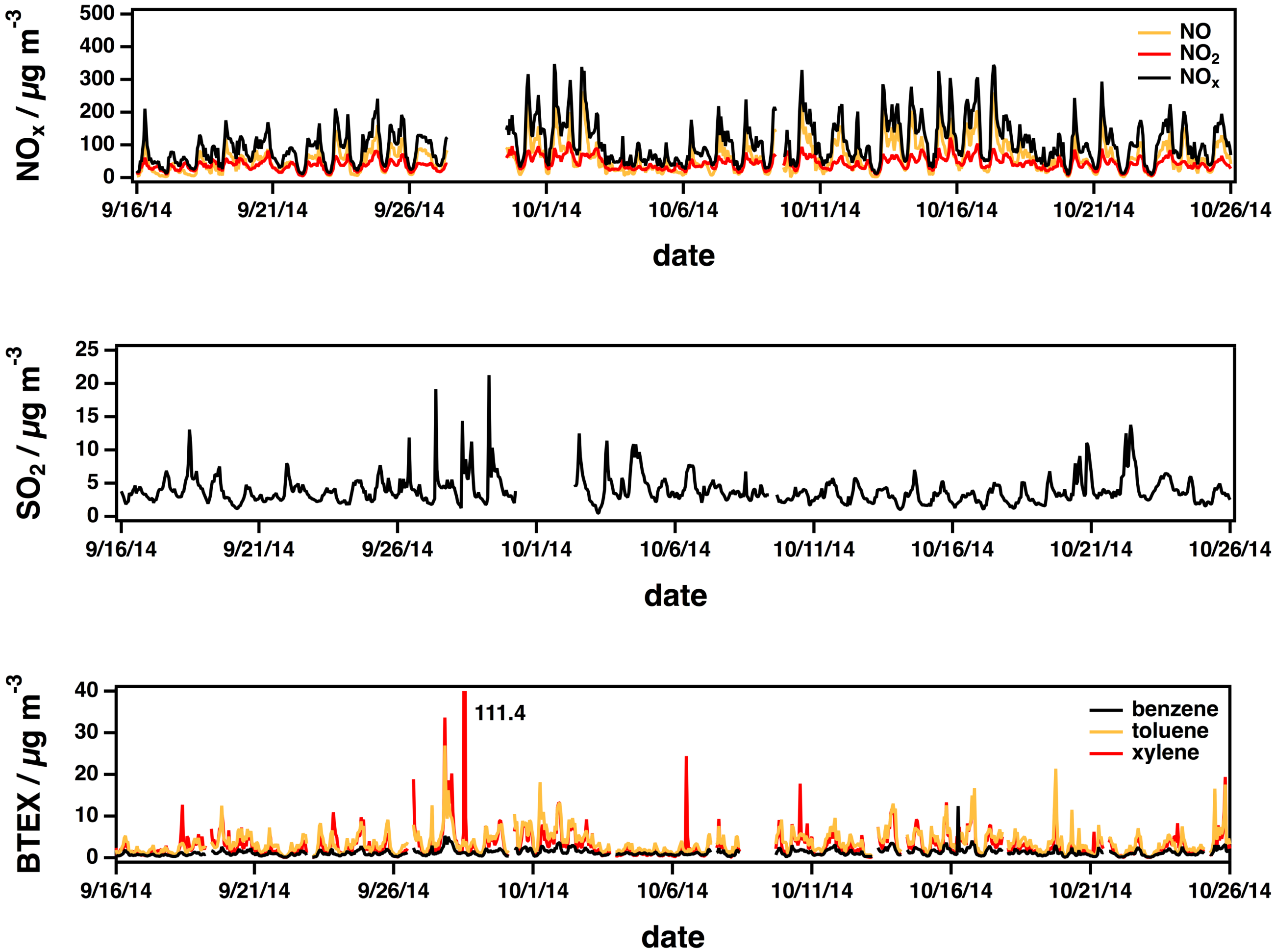
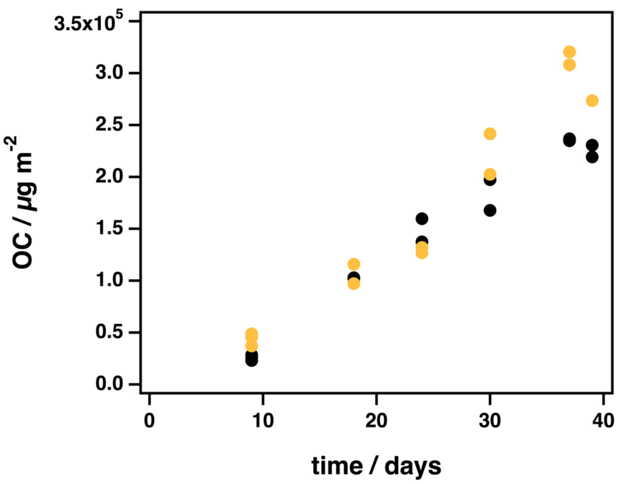


Figure S2

Photographs of the urban film sampler (prior to installation of the stainless-steel light shield between the upper two stages), both close-up (top) and from a distance (bottom; red circle shows sampler location).

Figure S3
Organic carbon (OC) and elemental carbon (EC) content of quartz fibre filters as a function of sample exposure time (n = 2 or n = 3 filter punches for each exposure time). OC–EC measurements were made on both light-exposed (yellow circles) filters and filters kept under dark conditions (black circles). In the case of EC, the red hollow circles represent samples for which EC was below the detection limit of the instrument.



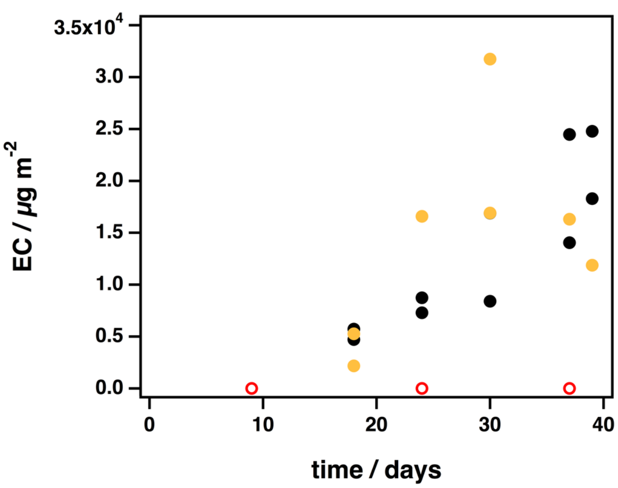


Figure S4
Concentrations of selected individual PAH within urban film as a function of bead exposure time under both light-exposed (yellow circles) and light-shielded (black circles) conditions. In all cases, the hollow red circles represent samples for which the PAH concentration was below the limit of quantification (here, defined as the average blank concentration + 10x the standard deviation of the blank concentration).

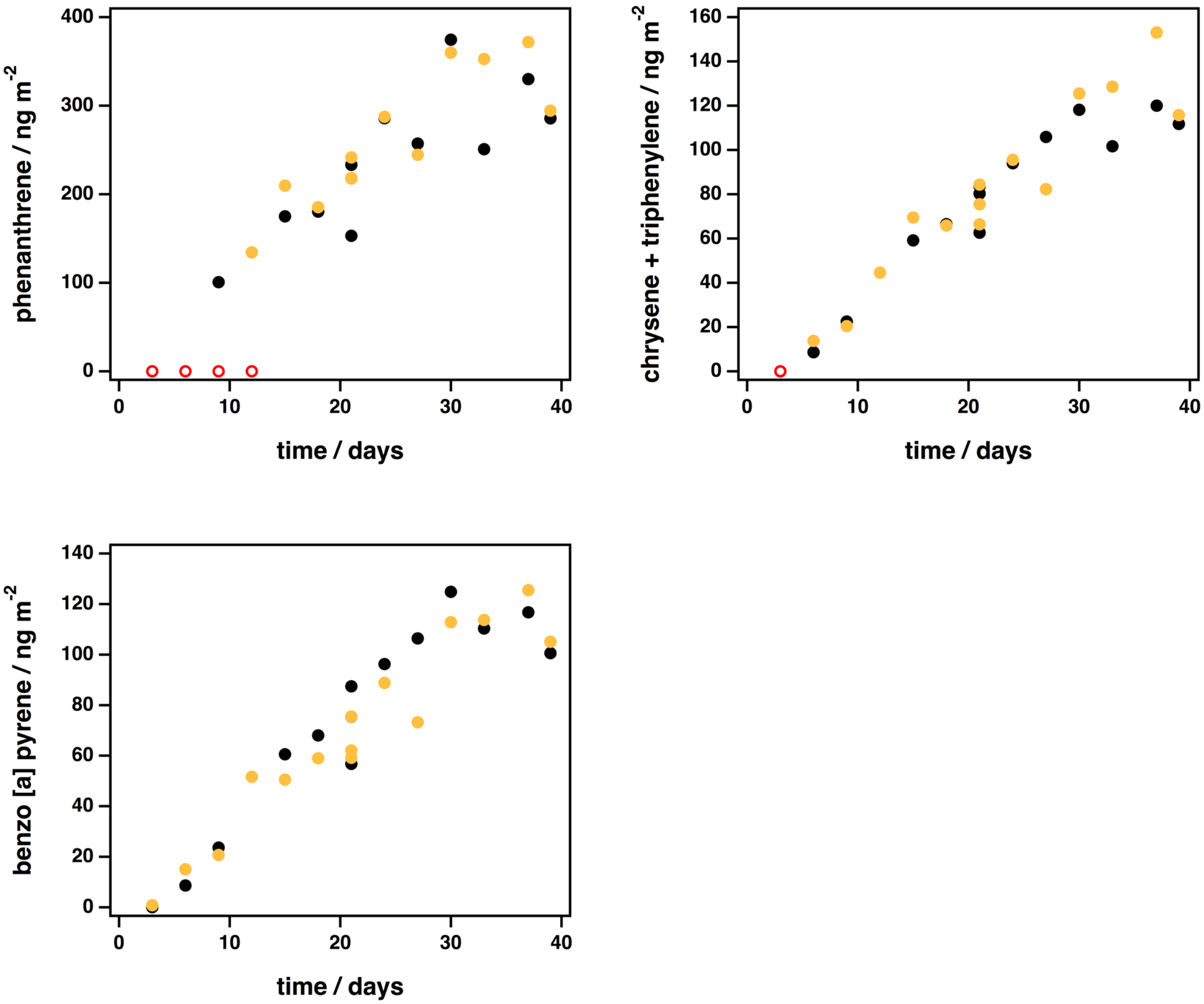


Figure S5

Average (top) and maximum (bottom) daily irradiance at the sampling location, compiled from hourly measurement data. The sampling period is shown in yellow circles.

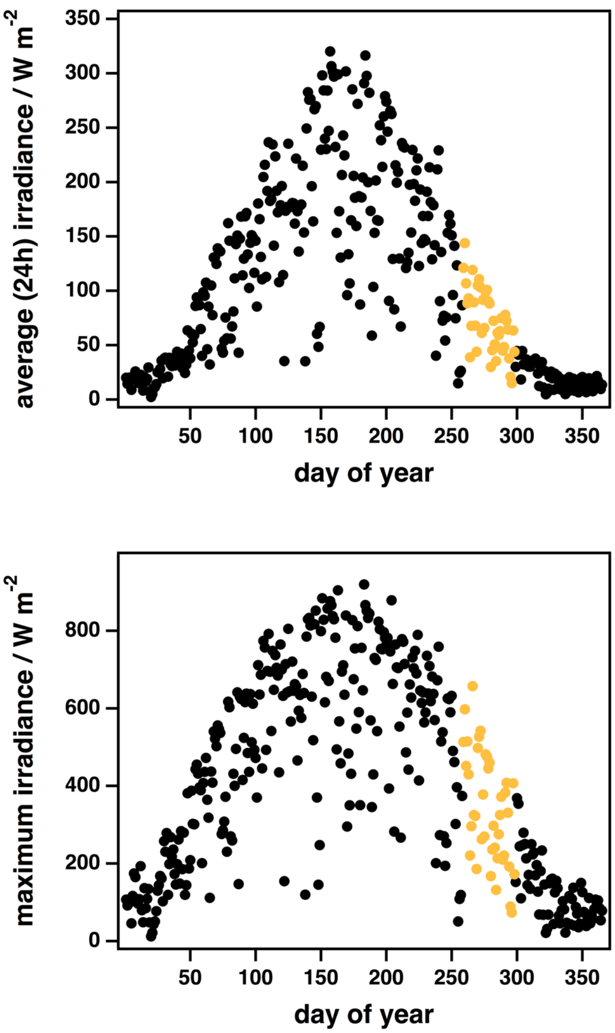


Figure S6
Average mass concentrations of trace organic parameters—ΣPAH and Σalkanes—in 24 h size-segregated particle samples (n = 5) collected using a 5-stage (0.05–0.14 µm, 0.14–0.42 µm, 0.42–1.2 µm, 1.2–3.5 µm, 3.5–10 µm aerodynamic particle diameter) Berner cascade impactor.

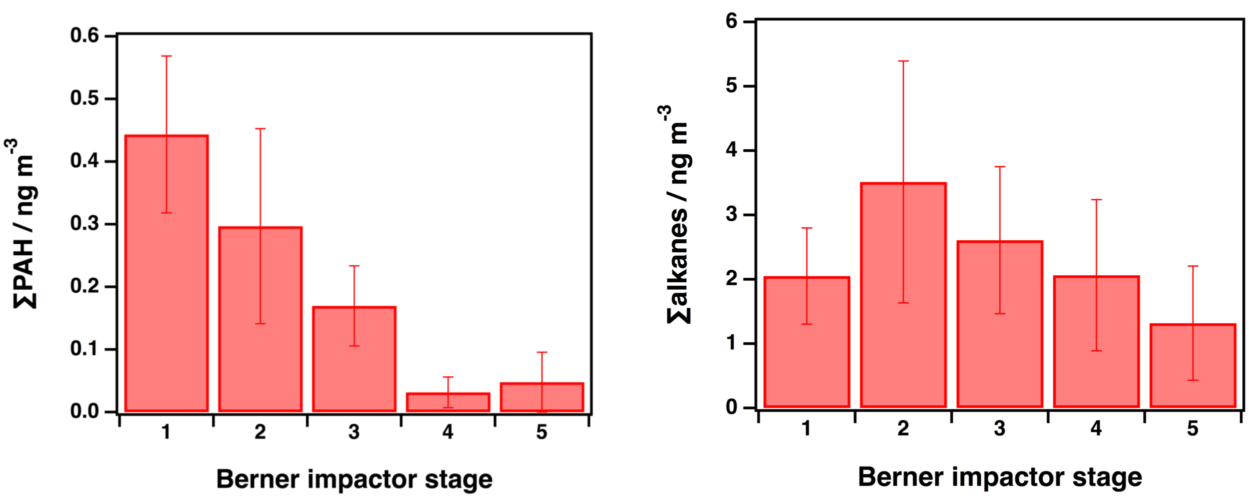


Figure S7

Average mass concentrations of bulk organic parameters—organic carbon (OC), elemental carbon (EC), and water-soluble organic carbon (WSOC)—in 24 h size-segregated particle samples (*n* = 5) collected using a 5-stage (0.05–0.14 µm, 0.14–0.42 µm, 0.42–1.2 µm, 1.2–3.5 µm, 3.5–10 µm aerodynamic particle diameter) Berner cascade impactor.

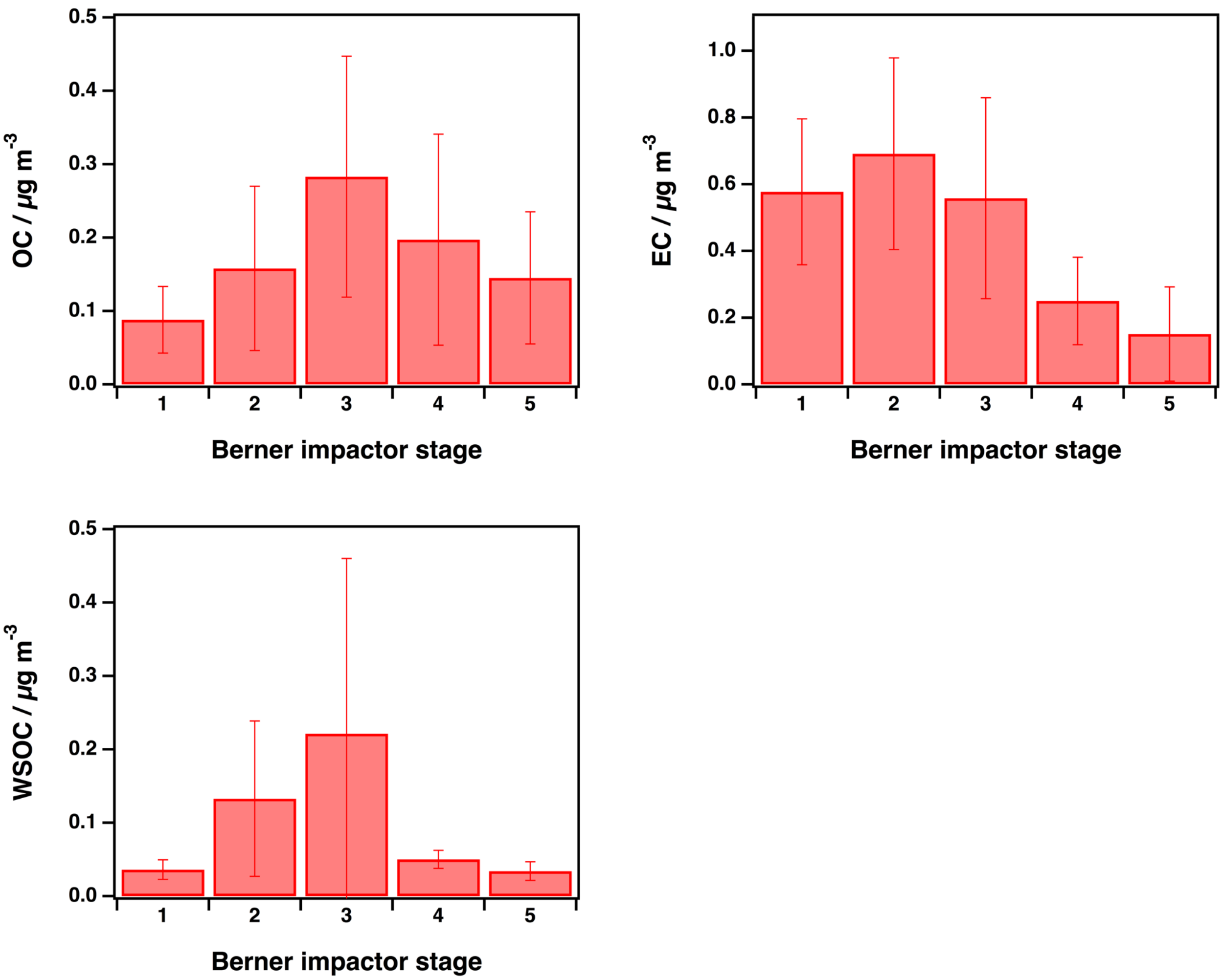


Figure S8
Comparison of area-normalized water-soluble organic carbon (WSOC) concentrations in glass bead samples (circles) and co-located quartz fiber filter samples (triangles). WSOC measurements were made on both light-exposed samples (yellow symbols) and samples collected under dark conditions (black symbols).

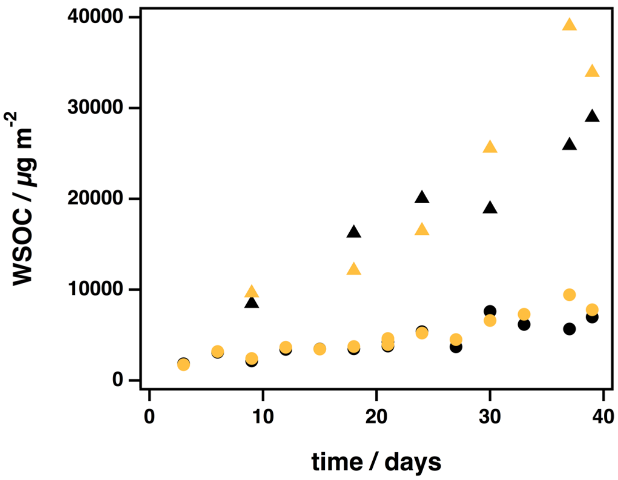


Table S1
Summary of previous measurements of PAH and alkanes in urban film.

Location	Duration	ΣPAH (ng m^{-2})	Σalkanes (ng m^{-2})	Reference
Baltimore	unknown	1593–9453	—	Liu et al.[1]
Brisbane	unknown	BDL–620 (fluoranthene)	—	Duigu et al.[2]
Guangzhou Guangzhou Hong Kong	> 3 months since cleaning 40 days > 3 months since cleaning	1000–1400 ~ 200–300 210–630	— — —	Pan et al.[3]
Leipzig	39 days	~ 1800	~ 100000	this study
New York (Brooklyn; additional samples collected near World Trade Center site)	unknown	7710	—	Butt et al.[4]
Shanghai	unknown	1160–7042	—	Yu et al.[5]
Shanghai	> 6 months since cleaning	2250–11795	—	Yu et al.[6]
Stockholm	several months	129–267 (winter) 35–155 (summer)	—	Unger et al.[7]
Toronto	unknown	900–62100	1010–22500	Diamond et al.[8]
Toronto	3–5 months	—	1230–7890	Liu et al.[9]
Toronto	weeks to months	900–62000	1000–34000	Gingrich et al.[10]
Toronto	> several weeks	2600 (pooled sample)	8400 (pooled sample)	Hodge et al.[11]

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