Supporting Information

Characteristics of Fine Particulate Matter and Polycyclic Aromatic Hydrocarbons Emitted from Coal Combustion Processes

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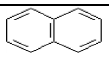
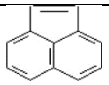
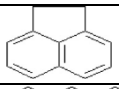
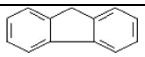
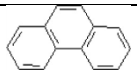
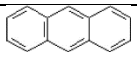
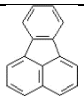
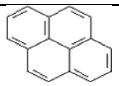
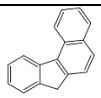
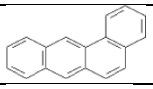
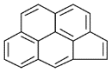
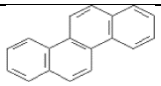
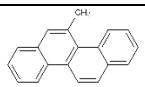
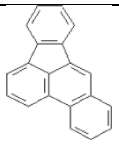
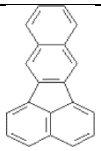
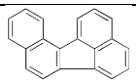
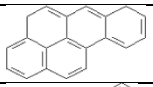
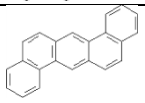
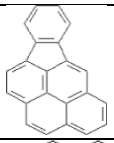
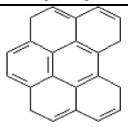
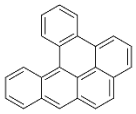
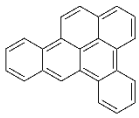
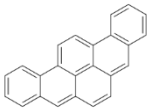
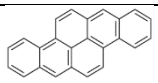
Table S1. 24 PAHs investigated and relevant information

Table S2. Standard deviations of PAH concentrations measured in two plants.

Fig. S1. Schematic diagram of the sampling train (modified from Yang et al. 2014).

Table S1. 24 PAHs investigated and relevant information

PAH compound	Abbre.	No. of rings	TEF	Structure	16 US EPA PAHs	15+1 EU PAHs
Naphthalene	NAP	2	0.001[a]		✓	
Acenaphthylene	ACY	3	0.001[a]		✓	
Acenaphthene	ACE	3	0.001[a]		✓	
Fluorene	FLU	3	0.001 [a]		✓	
Phenanthrene	PHE	3	0.001 [a]		✓	
Anthracene	ANT	3	0.01 [a]		✓	
Fluoranthene	FLT	4	0.001 [a]		✓	
Pyrene	PYR	4	0.001 [a]		✓	
Benzo[c]fluorene	BcFE	4	20[c,d]			✓
Benzo[a]anthracene	BaA	4	0.1 [a]		✓	✓
Cyclopenta[c,d]pyrene	CyC	4	0.01[b]			✓
Chrysene	CHR	4	0.01 [a]		✓	✓
5-Methylchrysene	5-MC	4	1[e]			✓
Benzo[b]fluoranthene	BbF	5	0.1 [a]		✓	✓
Benzo[k]fluoranthene	BkF	5	0.1 [a]		✓	✓

Benzo[j]fluoranthene	BjF	5	0.1[e]			✓
Benzo[a]pyrene	BaP	5	1 [a]		✓	✓
Dibenzo[ah]anthracene	DahA	5	1 [a,b]		✓	✓
Indeno[123-cd]pyrene	IcdP	6	0.1 [a]		✓	✓
Benzo[ghi]perylene	BghiP	6	0.01 [a]		✓	✓
Dibenzo[a,l]pyrene	Da,lP	6	10[e]			✓
Dibenzo[a,e]pyrene	Da,eP	6	1[e]			✓
Dibenzo[a,i]pyrene	Da,iP	6	10[e]			✓
Dibenzo[a,h]pyrene	Da,hP	6	10[e]			✓

[a]Nisbet and LaGoy (1992), [b]Richter-Brockmann and Achten (2018), [c]U.S.EPA, (2010), [d]Andersson et al. (2015), [e]OEHHA (1994).

Table S2. Standard deviations of PAH concentrations measured in two plants.

μg/Nm^3	Plant A-BH inlet (n=2)		Plant A-Stack (n=4)		Plant B-Stack (n=4)	
	G-phase	P-phase	G-phase	P-phase ×10^{-3}	G-phase	P-phase ×10^{-3}
Nap	2.29	0.0502	0.818	1.37	0.982	3.36
AcPy	2.43	0.0235	1.38	0.140	1.34	0.536
Acp	6.73	0.0413	0.461	0.230	0.709	0.0838
Flu	7.77	0.103	0.518	0.468	0.784	0.278
PA	2.94	0.232	1.12	0.514	0.904	2.52
Ant	0.738	0.0555	0.627	0.201	0.812	1.20
FL	2.21	0.475	0.674	1.02	0.707	2.75
Pyr	1.84	0.447	0.463	0.695	0.505	3.66
BcFE	0.105	0.280	0.0384	0.635	0.0375	5.20
BaA	0.191	0.140	0.0439	0.464	0.0353	1.22
CyC	0.311	0.0957	0.0640	0.513	0.0967	1.14
CHR	0.584	0.534	0.0751	2.66	0.0375	2.51
5-MC	0.748	0.402	0.0554	2.07	0.108	0.541
BbF	0.071	0.548	0.0403	1.32	0.0161	1.94
BkF	0.170	0.501	0.0487	2.51	0.0531	1.17
BjF	0.143	0.462	0.0446	2.76	0.0499	0.937
BaP	0.0125	0.297	0.00794	1.44	0.00765	3.71
I1,2,3-cd	0.0119	0.193	0.0121	2.40	0.00490	1.81
Da,h	0.0456	0.0390	0.00405	0.449	0.00397	0.273
Bg,h,iH	0.00561	0.239	0.0138	2.98	0.00863	3.73
Da,lA	0.0434	0.298	0.00511	1.32	0.00367	3.52
Da,eA	0.0460	0.472	0.00533	0.810	0.00376	3.84
Da,iA	0.0296	0.630	0.00435	1.06	0.00288	7.03
Da,hA	0.0372	0.455	0.00418	0.634	0.00385	3.80

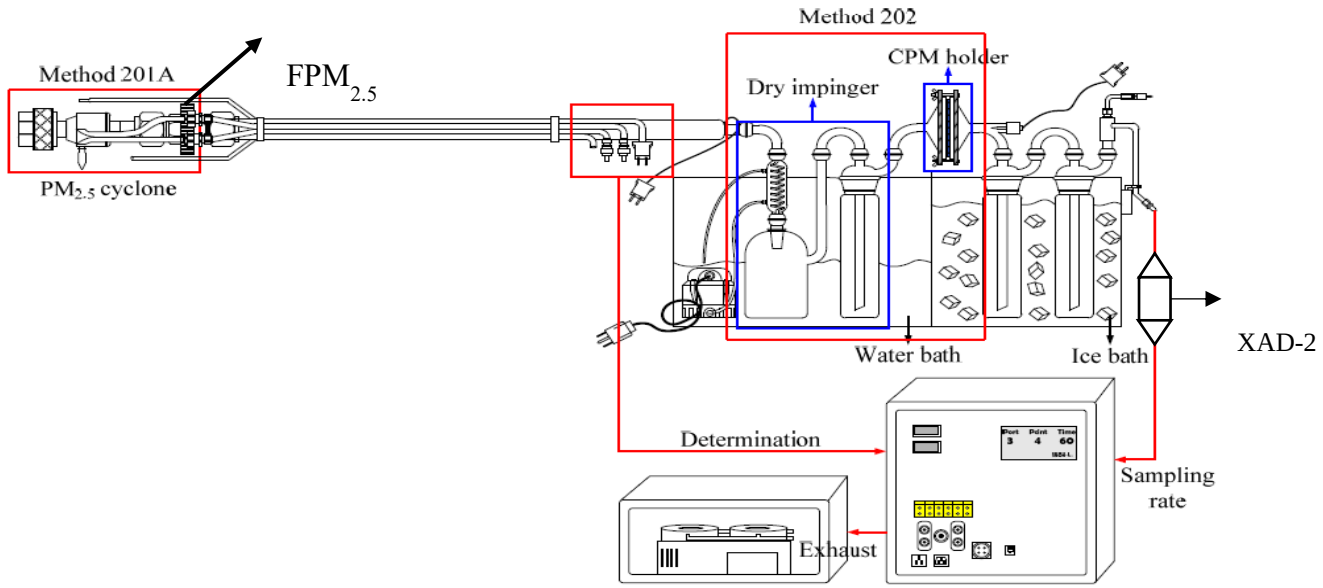


Fig. S1. Schematic diagram of the sampling train (modified from Yang et al. 2014).