

Supporting Information

Table S1. Average concentrations (in $\mu\text{g}/\text{m}^3$) and percentage contributions for five common sources used to create simulated data set.

Sources	VOC	PM _{2.5}	References
Petroleum Refinery	19.80 (31%)	1.70 (28%)	Alastuey <i>et al.</i> , 2006; Kulkarni <i>et al.</i> , 2007; Song <i>et al.</i> , 2008; Chan <i>et al.</i> , 2011
Vehicle Exhaust	20.08 (32%)	2.04 (33%)	Zheng <i>et al.</i> , 2002; Lee <i>et al.</i> , 2003; Kim <i>et al.</i> , 2005; Marmur <i>et al.</i> , 2005; Alastuey <i>et al.</i> , 2006; Hopke <i>et al.</i> , 2006; Kulkarni <i>et al.</i> , 2007; Song <i>et al.</i> , 2008; Yuan <i>et al.</i> , 2009; Chan <i>et al.</i> , 2011; Guo <i>et al.</i> , 2011
Industrial coating	13.36 (21%)	0.80 (13%)	Kim <i>et al.</i> , 2005; Yuan <i>et al.</i> , 2009; Guo <i>et al.</i> , 2011
Coal combustion	3.69 (6%)	1.29 (21%)	Lee <i>et al.</i> , 2003; Marmur <i>et al.</i> , 2005; Hopke <i>et al.</i> , 2006; Kulkarni <i>et al.</i> , 2007; Yuan <i>et al.</i> , 2009
Natural gas	6.34 (10%)	0.31 (5%)	Zheng <i>et al.</i> , 2002; Song <i>et al.</i> , 2008; Guo <i>et al.</i> , 2011

Table S2. Correlation coefficients between source contributions in data set D^{C2}_{Comb}.

	Petroleum refinery	Vehicle exhaust	Industrial coating	Coal combustion	Natural gas
Petroleum refinery	1	0.014	0.018	0.026	0.001
Vehicle exhaust		1	-0.012	-0.029	-0.042
Industrial coating			1	0.005	0.005
Coal combustion				1	0.679
Natural gas					1

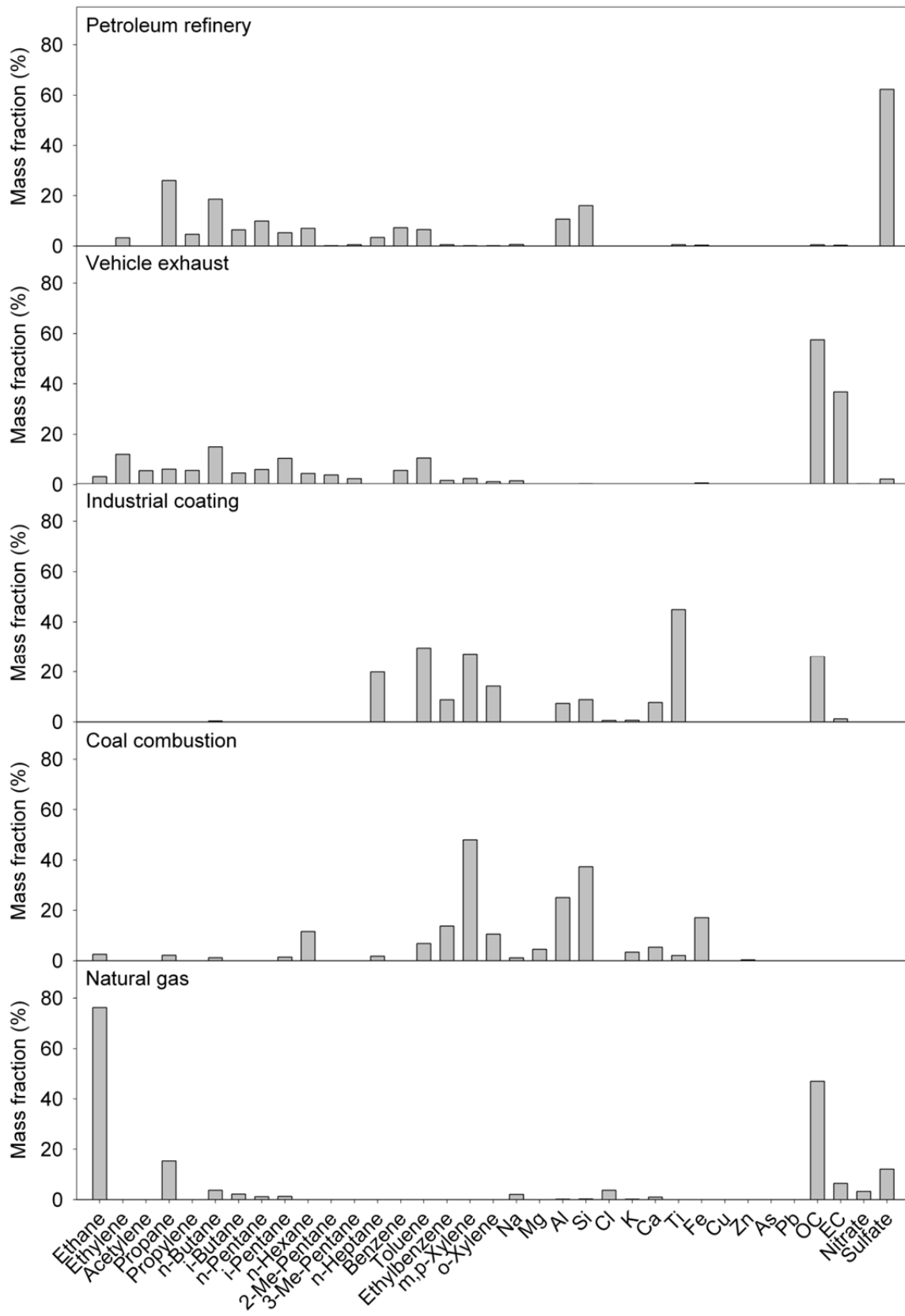


Fig. S1. Mass fractions of VOC and PM_{2.5} species for five sources used to create simulated data.