

Supplement of Atmos. Chem. Phys., 17, 13001–13016, 2017
<https://doi.org/10.5194/acp-17-13001-2017-supplement>
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Supplement of

Emission characteristics of refractory black carbon aerosols from fresh biomass burning: a perspective from laboratory experiments

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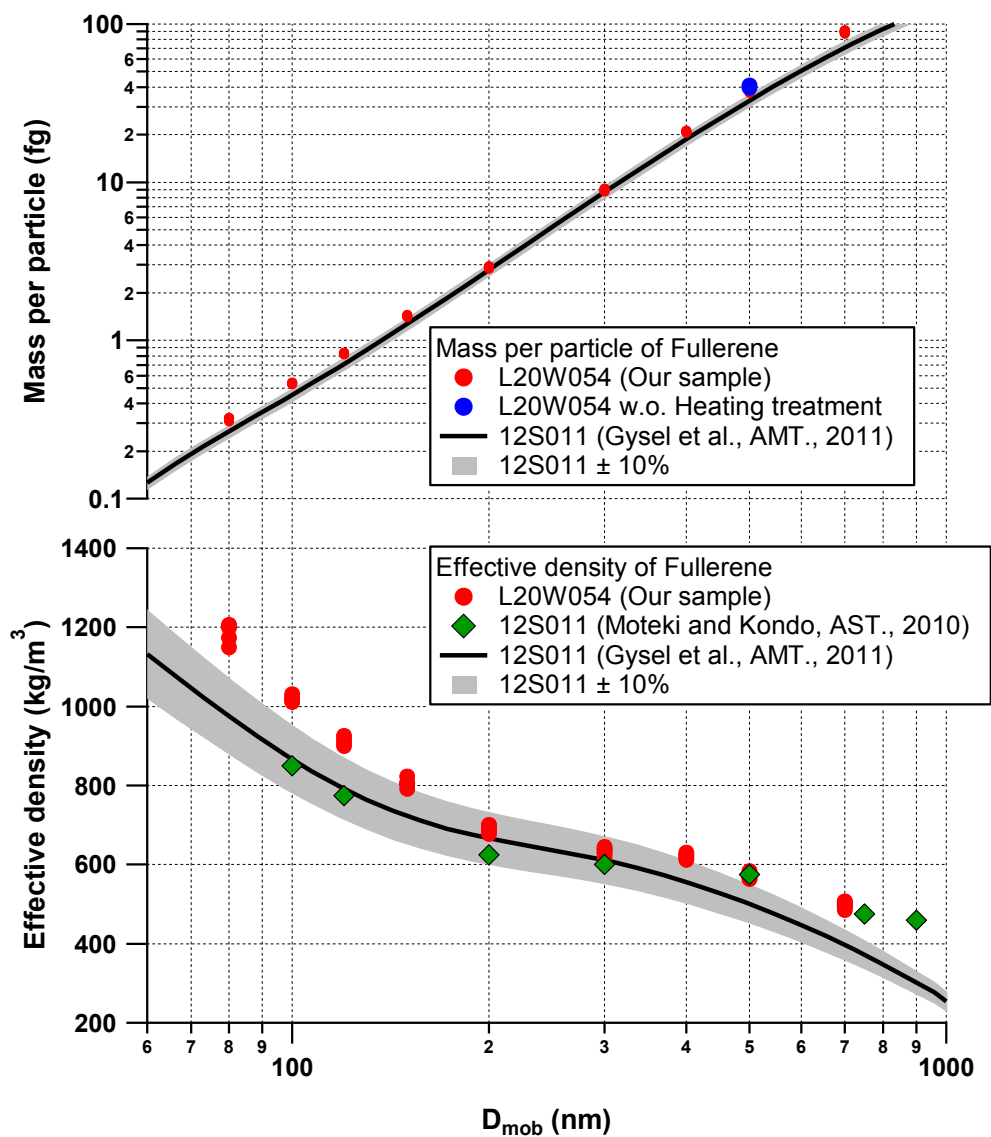


Figure. S1 The mass of FS particles and effective density as a function of is mobility diameter. The Effective density of FS particles was measured using a DMA-APM-CPC system.

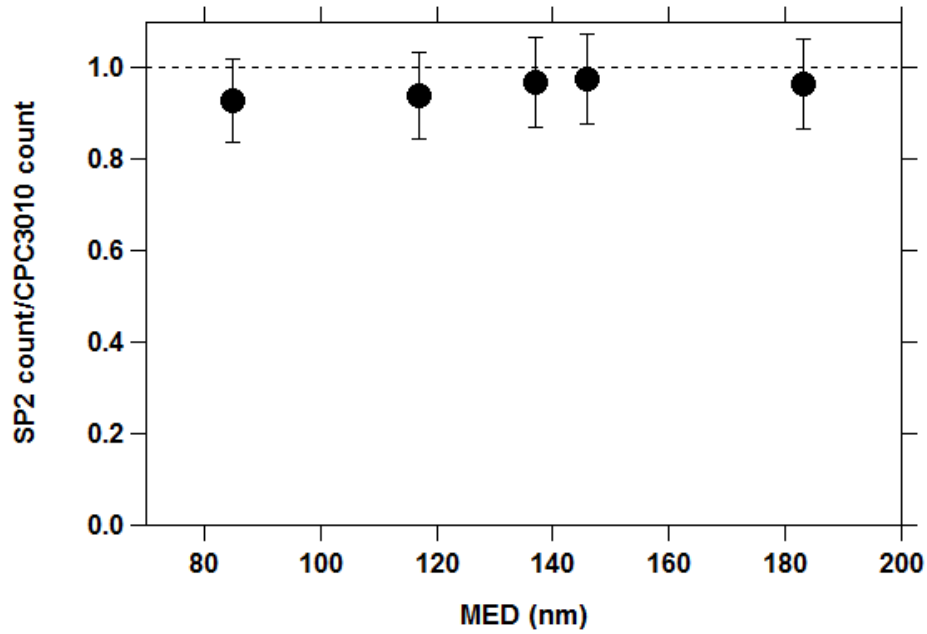


Figure S2. Detection efficiency of SP2 as a function of mass equivalent diameter of rBC particle at 80 nm ~ 190 nm. The y-axis represents the count ratio between SP2 and CPC3010 measurements

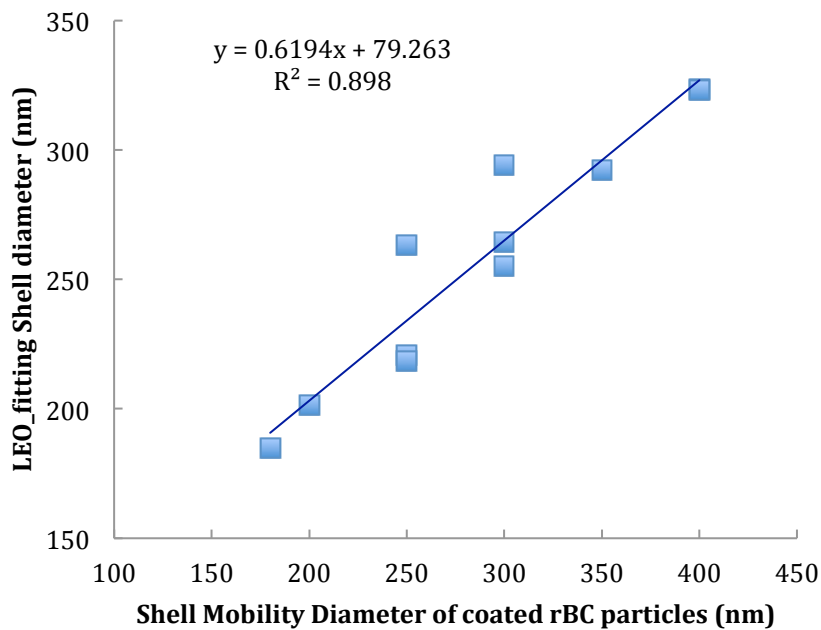


Figure S3. Scatter plot and linear regression of LEO_fitting Shell diameter of coated rBC and its Mobility diameter determined by Tandem DMA-SP2 system.

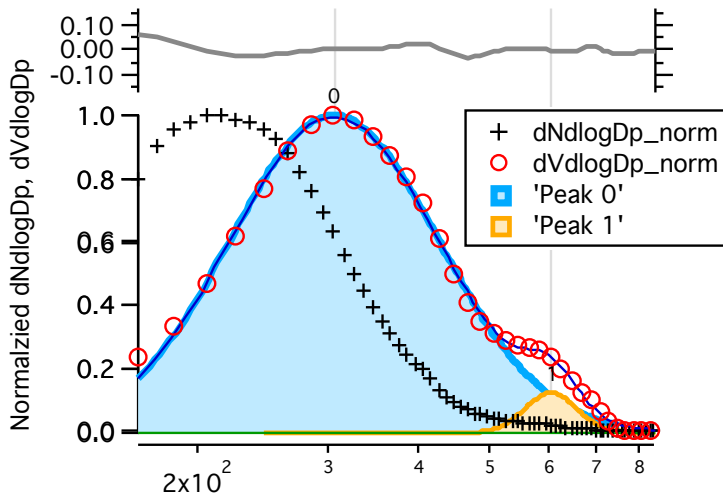


Figure S4. Normalized number size distribution and volume size distribution (presuming refractive index of $m = 1.5 - 0i$ and spherical configuration of non-rBC particles) for all the data of burning experiments. For better view, the distributions were normalized to maximum value = 1. A lognormal function fitting was applied to the volume size distribution.

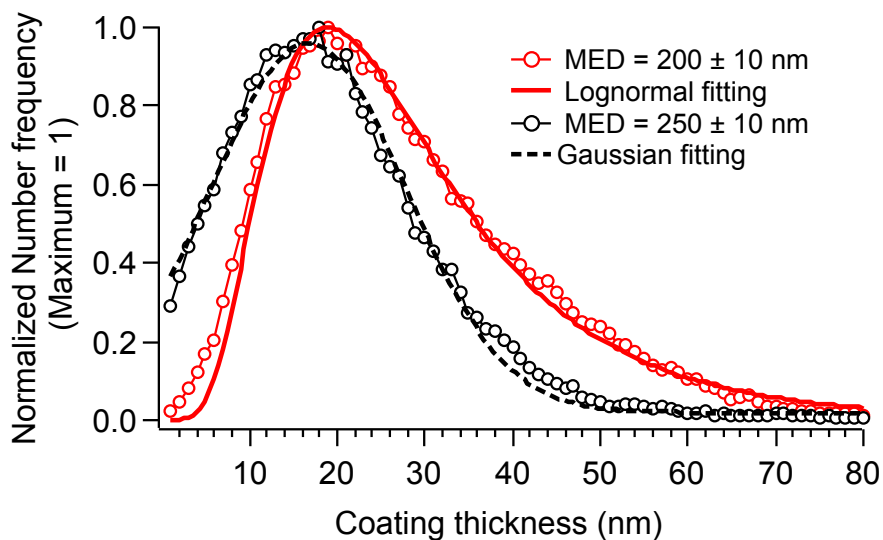


Figure S5. Histogram of coating thickness of rBC particles with MED = 200 ± 10 nm and MED = 250 ± 10 nm. A lognormal fitting was applied to the rBC particles with MED = 200 ± 10 nm, and a Gaussian fitting was applied to the rBC particles with 250 ± 10 nm.