Supplementary information of

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

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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.

\[ y = 0.6194x + 79.263 \]
\[ R^2 = 0.898 \]
Figure S4. Coating thickness of rBC particles with MED = 200 ± 10 nm and MED = 250 ± 10 nm.