Optical Characterization of End-Member Mixtures Found in Urban Indoor Air

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Figure 1. Fitting curve of NYC indoor air filter sample. Plot of optical density vs. wavelength (nm).

Figure 2. Combustion chamber where kerosene soot and sidestream tobacco smoke were collected.

- Ammonium sulfate can change the absorption pattern of BC substantially when the mass loading of ammonium sulfate is high.
- Mixtures of BC and ETS show a flattening of the absorption curve.
- This suggests that optical density (OD) of mixtures is not a straightforward addition of the OD of its various components, and that further investigation is needed for better understanding the dependence of a mixture’s optical density on the wavelength of light emitted.

Figure 3. Comparison of the optical absorption by a mixture of ETS on BC vs. pure BC and ETS.