

Fundamental Studies of Nanoparticle Formation in Air Pollution

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One of the major sources of atmospheric particulate matter is soot that has been emitted from mobile and stationary sources. To better understand the dynamics of soot formation and growth, we conducted the first small-angle neutron scattering (SANS) experiments from an ethylene flame. By fitting the scattering spectra – $I(q)$ vs. q – we can follow changes in the soot particle size distribution as a function of position H above the burner. Direct size distribution measurements using a nano scanning mobility particle sizer complement the SANS measurements.

H. Wang, B. Zhao, B. Wyslouzil, K. Streletzky, in *Proceedings of the Combustion Institute*, 29, 2749 – 2757, part 2, 2003.

