

Supplementary Materials: Nanostructure and Oxidation Reactivity of Nascent Soot Particles in Ethylene/Pentanol Flames

Yaoyao Ying, Chenxuan Xu, Dong Liu, Bo Jiang, Pengfei Wang and Wei Wang

To investigate whether the collection time by the quartz plate would influence the soot morphology, samples were also collected by reducing the deposition time. The soot particles were collect at the same position (HAB = 30 mm) by the same method for 60 s, and the samples were analyzed by a Tecnai G2 F30 S-TWIN field emission scanning transmission electron microscopy operated at 300 kV.

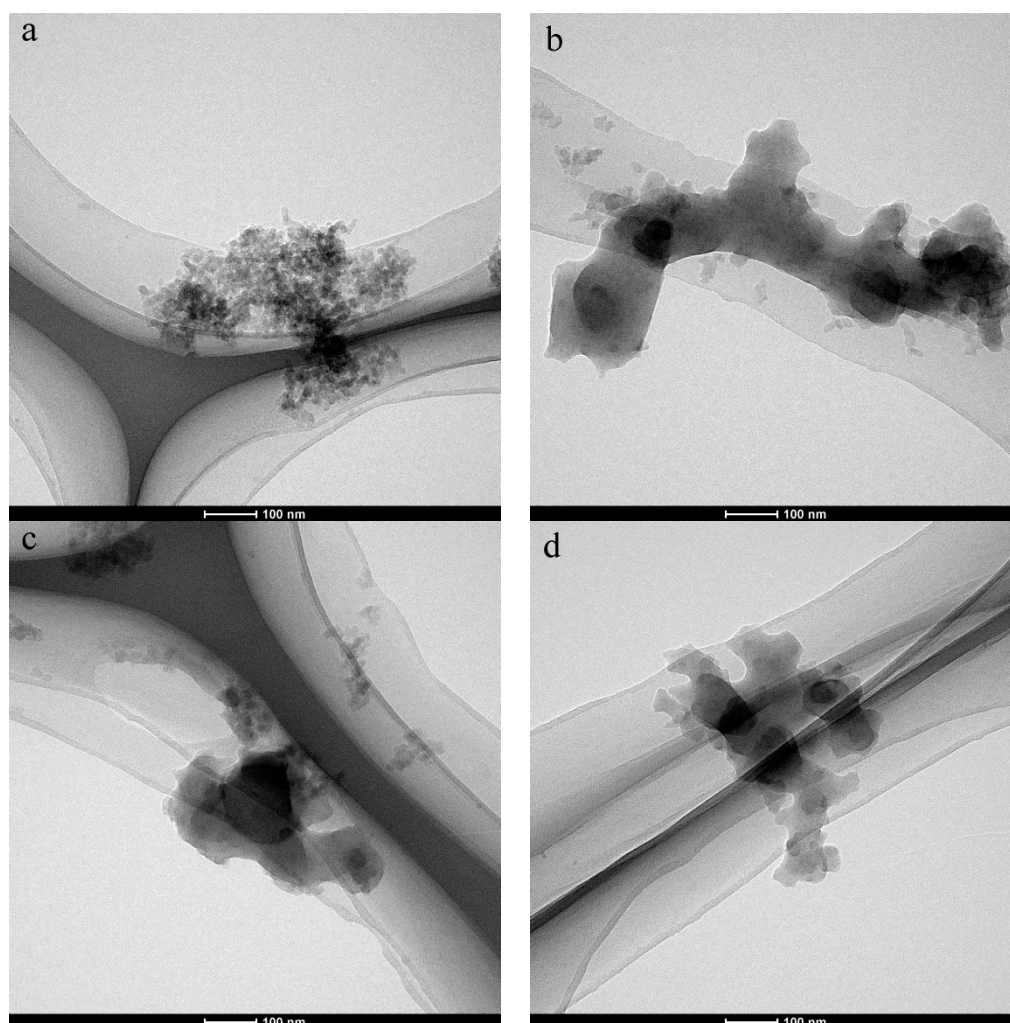


Figure S1. Aggregation morphology of nascent soot particles under four different conditions with collection time of 60 s: (a) pure ethylene; (b) 1-pentanol/ethylene; (c) 3-methyl-1-butanol/ethylene; (d) 2-methyl-1-butanol/ethylene.

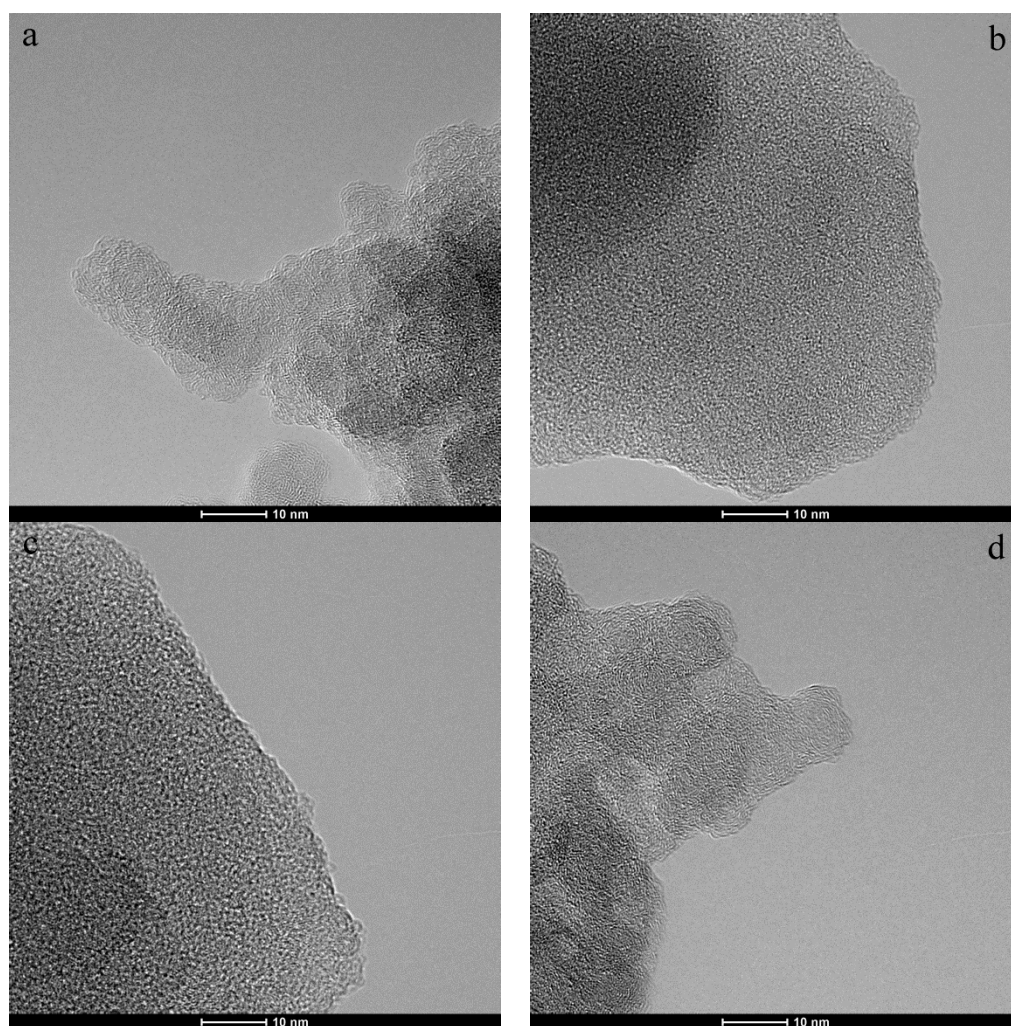


Figure S2. HRTEM images at higher magnification of nascent soot particles under four different flame conditions: (a) pure ethylene; (b) 1-pentanol/ethylene; (c) 3-methyl-1-butanol/ethylene; (d) 2-methyl-1-butanol/ethylene.