High Time-resolved Source Apportionment of PM$_{2.5}$ and Measurements on Combustion Sources

**Abstract**

High time-resolution source apportionment of PM$_{2.5}$ should be developed to understand the scientific mechanism of heavy haze formation and formulate effective policies and regulations, due to PM$_{2.5}$ mass concentration and composition varied on hourly time scale during heavy pollution processes. Supported by a key project of NSFC, we designed to combine TAG-Tof-MS for online organic speciation at the PKU monitoring station during haze episodes, with source organics profiles for elaborated source apportionment of PM$_{2.5}$, in which residential coal combustion will be differentiated from industrial boiler and diesel engine exhaust from gasoline vehicles. In addition, research progress on the measurement of localized source profiles, formation of black carbon and PAHs in coal and biomass burning, as well as oxidative potential of black carbon particles from various combustion sources will be introduced briefly.

**Biography**

Dr. Yingjun Chen earned his BSc and MSc in Geochemistry at China University of Geosciences, and went on to earn his PhD in Environmental Science from Guangzhou Institute of Geochemistry (GIG), Chinese Academy of Sciences (CAS). He completed post-doctoral training at GIGCAS and Georgia Institute of Technology. He worked in Yantai Institute of Coastal Zone Research, CAS, and Tongji University. Currently, he is a professor at the Department of Environmental Science and Engineering in Fudan University, Shanghai.

Dr. Chen has presided over seven NSFC projects as PI and published more than 40 peer-reviewed papers as the first or corresponding author. His research interest focuses mainly on the measurements of particulate and gaseous pollutants from various combustion emission sources, including emission factor, source profile and source apportionment, formation mechanism of black carbon and PAHs, and health effects of freshly emitted black carbon particles.