# PM2.5 AND THE ENVIRONMENT IN CHINA

## Chapter one: An Overview of PM2.5

Fine particle: PM2.5

### Atmospheric Particle

* The difference between **aerosol** and **particle**

Aerosol: dust, fume, smoke, fog, mist, haze and smog.

Particle, part of aerosol, has diameter with range 0.003 to 100μm

* **Atmospheric particles** are defined as solid particles dispersed among aerosol.
* Particles with different diameters have different sources and properties:

Particles with small diameters: mainly composed of particles produced by burning effect, particles made up by gases, and matters transformed to particles from gases.

Particles with relatively big diameters are usually formed by mechanical processes like dust from roads, construction, soil dust, ect.

* Different ways of definition for Dp (Particle diameter)
* Dp for common particles in air pollution research:

1. Total suspended particles, TSP, Dp<100μm
2. Inhalable particle or respiratory suspended particle, PM10, Dp<10μm
3. Fine particle, PM2.5, Dp<2.5μm, can be inhaled into lungs.
4. Ultrafine particle, UFP, Dp<0.1μm
5. Nano-particle, Dp below 100nm

### Essential Feature of PM2.5

### Research Significance and Pollution Status