



Micro-morphology of mixed organic/inorganic aerosols studied using X-Ray microscopy

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Aerosols of mixed organic/inorganic composition play a key role in both atmospheric chemistry and climate research. The formation of organic coatings on aerosol surfaces may hamper transport processes of reactants from and to the reactive core of the aerosol, and hence impact the chemical reactivity of aerosols. The inclusion of reactive compounds into viscous organic subphases may protect them from oxidative degradation and therefore extend their atmospheric lifetime. The mixing of various phases in aerosols possibly affect their scattering properties.

We study model aerosols using X-Ray spectro-microscopy. This technique allows a spatial resolution of about 40 nm and spectroscopic analysis of the chemical environment of oxygen and carbon compounds. Using a closed gas cell, we can establish a defined humidity in the cell and observe the deliquescence and efflorescence of micrometersized mixtures of organic and inorganic compounds. First results of two-phase systems, consisting of an inorganic salt and organic acids are presented.