

239th ACS National Meeting & Exposition
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Symposium on

Fate and Transport of Pollutants in the Built Environment: Atmospheric Chemistry Moves Indoors.

Indoor air quality is a function of dynamic processes in which chemical reactions play a key role by consuming primary emissions and generating secondary contaminants, including secondary organic aerosols (SOA). While outdoor pollution contributes background levels, the composition of indoor air is strongly determined by indoor sources, including occupant activities such as cooking, smoking or cleaning. In indoor environments, low molecular weight organic compounds and reactive species are found principally in the gas phase, while persistent semivolatile compounds tend to accumulate both in the gas phase and on exposed surfaces, including those of airborne particles and settled dust. To meaningfully alter the composition of indoor air, gas phase reactions must occur at rates that are competitive with air exchange rates. Such constraints do not apply to surface reactions, which are favored by the large surface-to-volume ratios found indoors. Indeed, indoor surfaces may present substrates that favor certain chemical reactions such as base-catalyzed hydrolysis. As practices consistent with environmental sustainability and *zero-energy buildings* are incorporated into building construction and operation, new materials with novel emissions and surfaces will be introduced. Characterizing indoor chemistry, with an eye towards mitigation strategies, becomes even more important in such a setting, since its impact on human exposures will be amplified as a consequence of tighter building envelopes and reduced air exchange rates.

We invite contributions of laboratory, field, and modeling investigations related to indoor chemistry. We particularly encourage contributions from members of the **outdoor** atmospheric chemistry community who have not, to date, brought their expertise **indoors**. Participants are encouraged to submit papers in areas including, but not limited to:

- the description of physical-chemical processes taking place indoors (gas phase, fixed surfaces and aerosols), which affect pollutant fate and transport
- oxidation and hydrolysis reactions that may impact indoor environments
- the development of novel air cleaning approaches
- methodologies for the detection of trace-levels of indoor pollutants, especially highly reactive species such as free radicals or secondary ozonides.

Potential invited speakers include: B. Finlayson-Pitts (UC Irvine); W.W Nazaroff (UC Berkeley); P. Ziemann (UC Riverside); N. Donahue (Carnegie Mellon Univ.); H. Herrmann (Institute for Tropospheric Research, Leipzig, Germany), V. Grassian (U. Iowa), P. Pichat (Ecole Centrale de Lyon, France).

Symposium Organizers:

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