

Study: Dirty windows aid air pollution

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Canadian scientists have determined dirty windows located in metropolitan urban areas might be hidden contributors to air pollution.

J.D. Donaldson and colleagues at the University of Toronto said the grime that accumulates on windows -- as well as buildings, roads and other surfaces in urban areas -- could be an important source of nitrogen oxide air pollutants that combine with other air pollutants to form smog.

In the study, Donaldson and his team focused on urban surface films, often termed "window grime," as a potential contributor to air pollution. The films contain nitrogen compounds, which disappear at rates that can't be explained by obvious losses due to rain washout. In addition, traditional models of urban air pollution suggest the existence of an unrecognized source for a nitrogen compound involved in smog formation.

The study presents experimental evidence suggesting windows and other surfaces in urban areas may be sites where "inactive" nitrogen oxides might be transformed into "active" forms and be released into the atmosphere. That transformation might occur in a process triggered by sunlight shining on film-covered surfaces, the scientists said.

The research is to be published in the June 15 issue of the journal *Environmental Science & Technology*.

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