

## Ivan R. Piletic, Physical Scientist, in EPA's National Exposure Research Laboratory

Exposure Methods and Measurements Division

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**Area of Expertise:** Ivan's current research involves the computational study of the atmospheric chemistry of gas and particle phase compounds affecting air quality and climate change. Quantum chemistry and master equation models are being used to determine reaction kinetics, branching ratios and yields of important atmospheric reactions. A particular focus is being placed on investigating novel mechanisms affecting the concentrations of several criteria air pollutants: ozone, nitrogen oxides and particulate matter. The results of this work are being used to develop more accurate atmospheric models that are used by the states for regulatory purposes.

### Select Publications:

- Piletic I.R., Offenberg J.H., Olson D.A., Jaoui M., Krug J., Lewandowski M., Turlington J.M., Kleindienst T.E. 2013. Constraining Carbonaceous Aerosol Sources in a Receptor Model by Including C-14 Data with Redox Species, Organic Tracers, and Elemental/Organic Carbon Measurements. *Atm. Env.*, 80, pp. 216-225 (DOI: 10.1016/j.atmosenv.2013.07.062).
- Pye H.O.T., Pinder R.W., Piletic I.R., Xie Y., Capps S.L., Lin Y.H., Surratt J.D., Zhang Z.F., Gold A., Luecken D.J., Hutzell W.T., Jaoui M., Offenberg J.H., Kleindienst T.E., Lewandowski M., Edney E.O. 2013. Epoxide Pathways Improve Model Predictions of Isoprene Markers and Reveal Key Role of Acidity in Aerosol Formation. *Env. Sci. Tech.*, 47(19), pp. 11056-11064 (DOI: 10.1021/es402106h).
- Lewandowski M., Piletic I.R., Kleindienst T.E., Offenberg J.H., Beaver M.R., Jaoui M., Docherty K.S., Edney E.O. 2013. Secondary Organic Aerosol Characterization at Field Sites Across the United States During the Spring-Summer Period. *Int. J. Env. An. Chem.*, 93(10), pp. 1084-1103 (DOI: 10.1080/03067319.2013.803545).
- Lin Y.H., Zhang H.F., Pye H.O.T., Zhang Z.F., Marth W.J., Park S., Arashiro M., Cui T.Q., Budisulistiorini H., Sexton K.G., Vizuete W., Xie Y., Luecken D.J., Piletic I.R., Edney E.O., Bartolotti L.J., Gold A., Surratt J.D. 2013. Epoxide as a Precursor to Secondary Organic Aerosol Formation from Isoprene Photooxidation in the Presence of Nitrogen Oxides. *Proc. Nat. Acad. Sci.*, 110(17), pp. 6718-6723 (DOI: 10.1073/pnas.1221150110).
- Piletic I.R., Edney E.O., Bartolotti L.J. 2013. A Computational Study of Acid Catalyzed Aerosol Reactions of Atmospherically Relevant Epoxides. *Phys. Chem. Chem. Phys.*, 15(41), pp. 18065-18076 (DOI: 10.1039/c3cp52851k).

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**Education:**

- Ph.D., Chemistry, Stanford University, Stanford, CA, 2006
- B.S., Chemistry and Mathematics, McMaster University, Hamilton, ON, Canada, 2000

**Professional Experience:**

- Physical Scientist, US EPA, Research Triangle Park, 2014-present
- Postdoctoral Physical Scientist, US EPA, Research Triangle Park, NC 2010-2014
- Postdoctoral Chemist, Duke University, Durham, NC 2006-2010