

AQRP Monthly Technical Report

PROJECT TITLE	Condensed Chemical Mechanisms for Ozone and Particulate Matter Incorporating the Latest in Isoprene Chemistry	PROJECT #	16-031
PROJECT PARTICIPANTS	William Vizquete Jason Surratt	DATE SUBMITTED	7/5/17
REPORTING PERIOD	From: 6/1/17 To: 6/30/17	REPORT #	6

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 15th of the month following the reporting period shown above.

Detailed Accomplishments by Task

Task 1 Updated SAPRC-07 and Aerosol Module for Isoprene Oxidation

Preliminary Analysis

Produced and have begun our quality assurance of the output files from our box modeling system of the SAPRC16 chemical mechanism.

Data Collected

Produced output files from our box modeling system of the SAPRC16 chemical mechanism.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

N/A

Goals and Anticipated Issues for the Succeeding Reporting Period

We will investigate the SAPRC16 mechanism model performance in simulations of UNC chamber data.

Detailed Analysis of the Progress of the Task Order to Date

The progress on the task is on schedule.

Task 2 Chamber Experiments: Interplay of Particle-Phase Composition, Phase, and Viscosity on IEPOX Multiphase Chemistry

Preliminary Analysis

We are nearly complete in finishing up processing data from online measurements and obtaining γ_{IEPOX} for toluene and naphthalene coating experiments and now quality assuring that data. We have also begun processing data from our nucleation experiments.

Data Collected

We have collected the data from our coatings and nucleation experiments.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

N/A

Goals and Anticipated Issues for the Succeeding Reporting Period

To complete the quality assurance of experimental data and prepare for analysis needed for the draft final report.

Detailed Analysis of the Progress of the Task Order to Date

We are nearly complete in our proposed experimental schedule.

Task 3 Implementation in a regulatory air quality model

Preliminary Analysis

Began modeling runs including sensitivities of key parameters that could affect IEPOX-SOA yield calculations based on experimental data generated by this project.

Data Collected

Produced modeling output as a sensitivity analysis on IEPOX-SOA yield and aerosol phase diffusivity.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

Our first step was to reproduce the modeling data already reported in the literature. Our model's were unable to replicate some of those results. To address this issue we have contacted and in communication with the original publication author and working to resolve our errors.

Goals and Anticipated Issues for the Succeeding Reporting Period

We will visualize and analyze the results of our sensitivity runs ensuring our ability to compare with previous simulations and observational data.

Detailed Analysis of the Progress of the Task Order to Date

We are on schedule.

Do you have any publications related to this project currently under development? If so, please provide a working title, and the journals you plan to submit to.

Yes No

Do you have any publications related to this project currently under review by a journal? If so, what is the working title and the journal name? Have you sent a copy of the article to your AQRP Project Manager and your TCEQ Liaison?

Yes No

Do you have any bibliographic publications related to this project that have been published? If so, please list the reference information. List all items for the lifetime of the project.

Yes No

Do you have any presentations related to this project currently under development? If so, please provide working title, and the conference you plan to present it (this does not include presentations for the AQRP Workshop).

Yes No

Do you have any presentations related to this project that have been published? If so, please list reference information. List all items for the lifetime of the project.

Yes No

Submitted to AQRP by

Principal Investigator

William Vizuete

Jason Surratt