

ChemZone

FOR FAST 0-D (GLOBAL) REACTOR SIMULATIONS AND CHEMICAL MECHANISM DEVELOPMENT

Features

ChemZone simulation tool is a simplified but extremely fast solver for analysis of plasma discharges and neutral reactive flows such as in combustion or chemical vapor deposition. ChemZone also provides comprehensive capabilities for finite-rate chemical reaction mechanism development, analysis and optimization in these systems. Features of ChemZone include:

- Fast 0-D (global) reactor simulations (in seconds of computer time)
- Aids the development of very large chemistries, including coupled gas and multiple surface mechanisms
- Enables detailed view of chemistry parameters, including reaction rate magnitudes, contribution of individual reactions to specific species production, species wall fluxes, etc.
- Support for sensitivity analysis of quantities of interest to reaction mechanism parameters

Applications

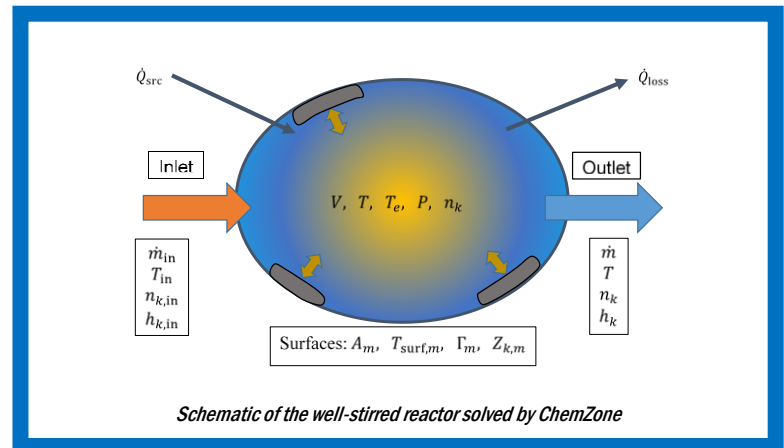
Typical application areas where ChemZone can be used are:

- Thin film etching / deposition
- Gas stream processing
- Chemical processing
- Combustion
- Biomedical

Industries served

The following industry segments are served by ChemZone:

- Semiconductor Equipment Makers
- Semiconductor IC Manufacturers
- Solar Cell Manufacturers
- Flat Panel Display Manufacturers
- Automotive Industry
- Aerospace Industry
- Electrical Device Manufacturers



OVERVIZ

SOLUTIONS FOR YOUR MULTI-PHYSICS SIMULATION NEEDS

ChemZone is one of several simulation packages that are part of the OverViz multiphysics simulation suite. List of simulation packages in OverViz include:

- **VizGlow** Non-equilibrium Plasma simulator
- **VizSpark** Thermal (arc) Plasma simulator
- **VizEM** Electromagnetics simulator
- **VizFlow** Fluid flow simulator
- **VizGrain** Particle simulator
- **VizMesh** Geometry and unstructured meshing
- **ChemZone** Zero-dimensional reactor simulator

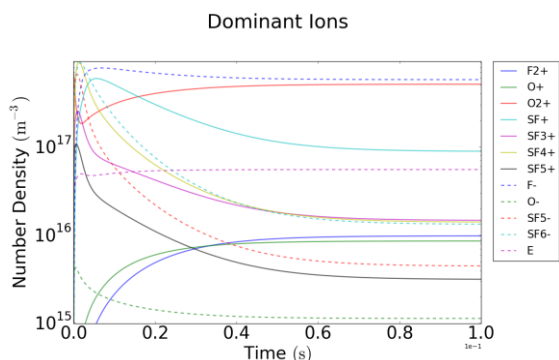
We also provide the following services:

- Modeling and simulation services: work with customers to define problem and setup model
- Calibration of models for customer-specific problems
- Training and support to clients using software tools

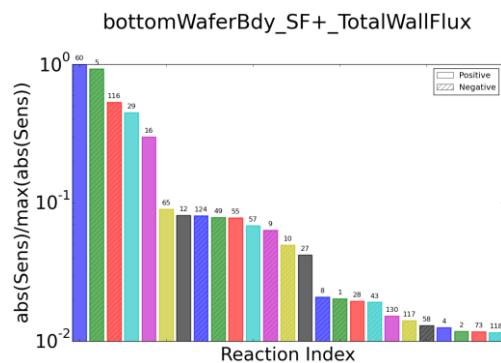
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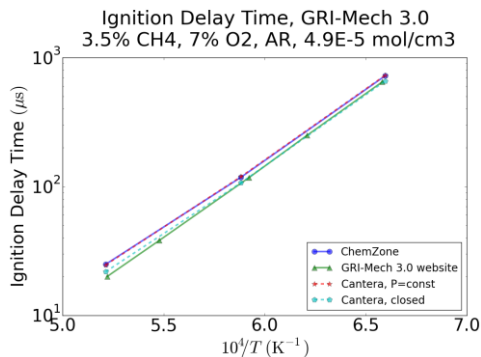
ChemZone Features at a Glance



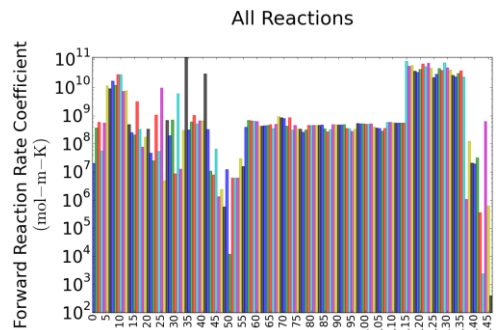
Transient Evolution of Ion Species in a Plasma



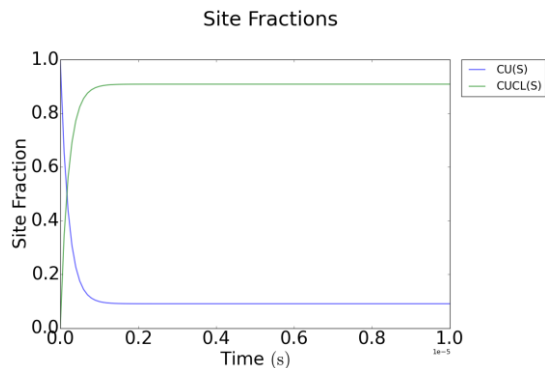
Sensitivity of Quantities-of-Interest to Reaction Rate Coefficients



Solutions for Combustion Chemistries



Reaction Rate Coefficient Magnitudes for a Final Reactor State



Coupled Solution of Surface Chemistry

For more information, please contact us:



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