

VizGlow™

FOR HIGH-FIDELITY NON-EQUILIBRIUM PLASMA MODELING

Features

VizGlow software tool is used for high-fidelity multi-dimensional modeling of non-equilibrium plasma discharges. Features of VizGlow include:

- 1-D, 2-D (planar/axisymmetric) and 3-D problems
- Self-consistent (sheath+plasma) and quasi-neutral formulation
- Multi-species, multi-temperature formulation
- Finite-rate gas chemistry (complex gas mixtures) and surface chemistry (etching, deposition, etc.)
- Coupling to electromagnetics, fluid-flow, and particle models
- Photoionization model
- Valid over range of pressures \sim mTorr to \sim atm.
- Unstructured mixed mesh framework
- Parallel computing

Applications

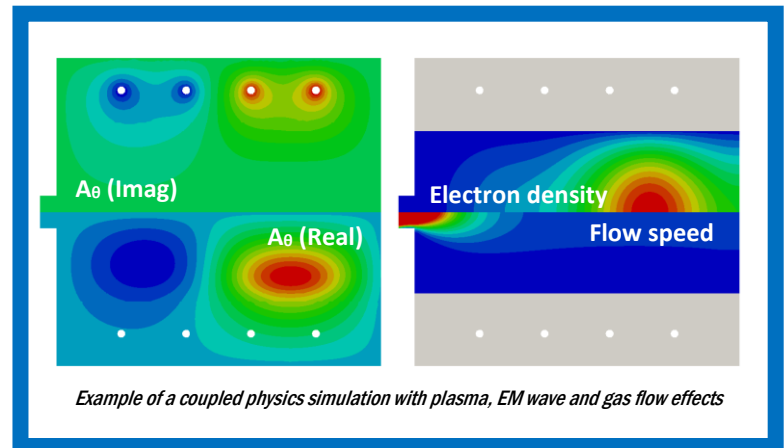
Typical application areas of plasma discharges where VizGlow can be used are:

- Thin film etching / deposition / cleaning
- Lighting and display
- Aerodynamic flow control
- Chemical processing
- Combustion ignition / stabilization
- Biomedical (e.g. sterilization)
- Plasma propulsion
- Plasma metamaterials

Industries served

The following industry segments are served by VizGlow:

- Semiconductor equipment makers
- Semiconductor IC manufacturers
- Solar cell manufacturers
- Flat-panel display manufacturers
- Automotive industry (e.g. next generation combustion ignition)
- Aerospace Industry (e.g. flow control, plasma propulsion)
- Electrical device manufacturers



SOLUTIONS FOR YOUR MULTI-PHYSICS SIMULATION NEEDS

VizGlow 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

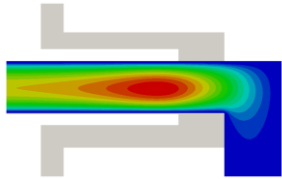
We provide the following services:

- 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

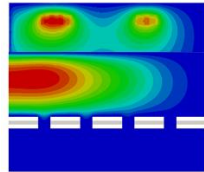
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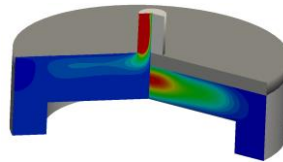
Plasma discharge types that can be simulated with VizGlow



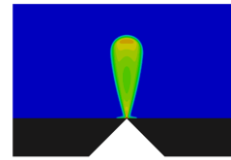
Capacitively Coupled Plasmas



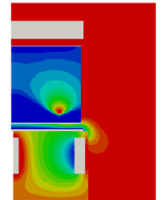
Inductively Coupled Plasmas
with Bias



Microwave Plasmas



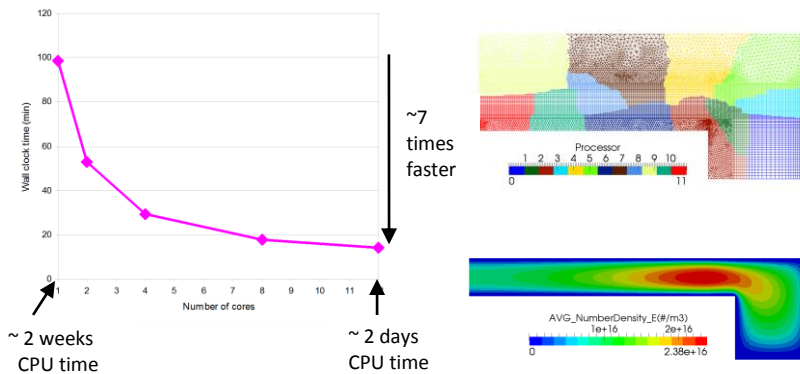
Streamer



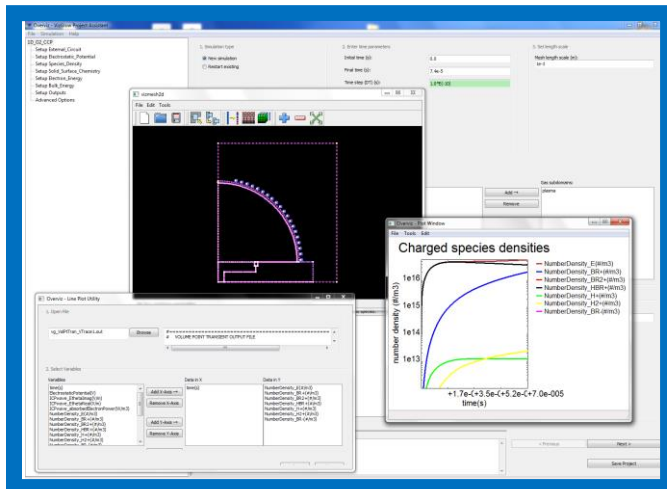
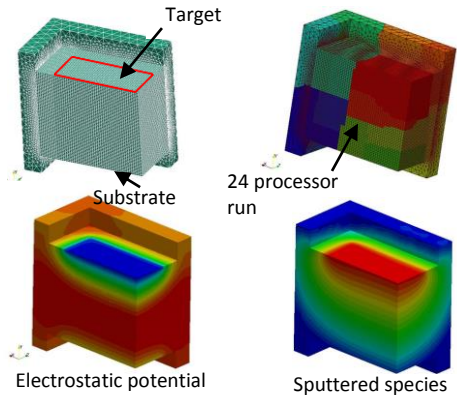
Magnetron CCP

Also: Direct Current (DC) Plasmas, Micro-discharges (MD), Dielectric Barrier Discharges (DBD)

VizGlow Parallel Simulations: Axisymmetric CCP simulation



3-D DC Sputter Simulation



VizGlow is supported by an intuitive Graphical User Interface with Pre- and Post- processing capability

For more information, please contact us:



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