

VizGrain

HIGH-FIDELITY PARTICLE-BASED MODELING

Features

VizGrain is modeling tool for rarefied gas flows, macro-particle (e.g. dust) dynamics and hybrid plasma simulations. Features of VizGrain include:

- 1-D, 2-D (planar/axisymmetric) and 3-D problems
- Multiple particle types (e.g. multiple species)
- Particle force models: Electromagnetic Lorentz force, Gravitational force, aerodynamic drag
- Particle chargeup models
- Particle collisions: Direct-Simulation Monte Carlo (DSMC) approach, Monte Carlo Collision (MCC) approach
- Coupling to VizGlow (hybrid plasma simulations, prediction of complex ion energy and angular distribution functions on processing surfaces)
- Hybrid unstructured mixed mesh formulation
- Parallel computing

Applications

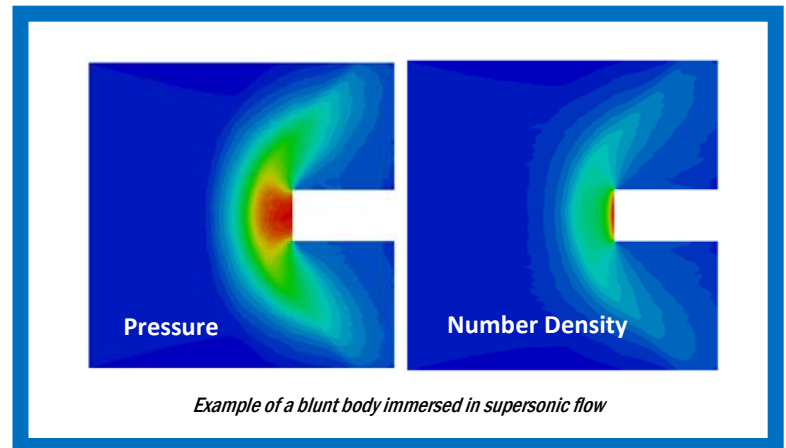
Typical application areas where VizGrain can be used are:

- Thin film etching / deposition
- Gas stream processing
- Low-pressure aerodynamic flows
- Chemical processing

Industries served

The following industry segments are served by VizGrain:

- Semiconductor Equipment Makers
- Semiconductor IC Manufacturers
- Solar Cell Manufacturers
- Flat Panel Display Manufacturers
- Aerospace Industry (e.g. rarefied flows)



SOLUTIONS FOR YOUR MULTI-PHYSICS SIMULATION NEEDS

VizGrain 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

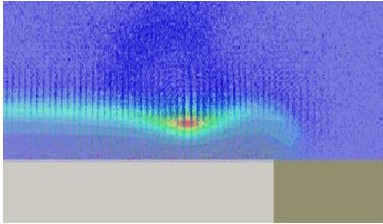
We also provide the following services:

- 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

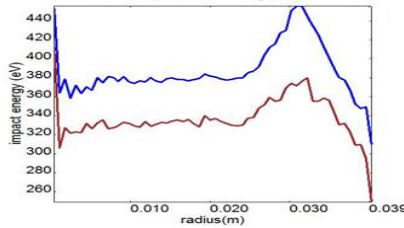
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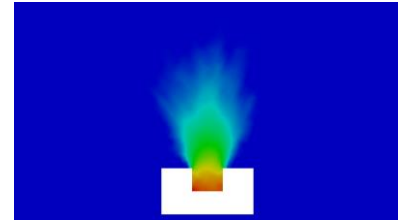
Pure and hybrid plasma-particle simulations with VizGrain



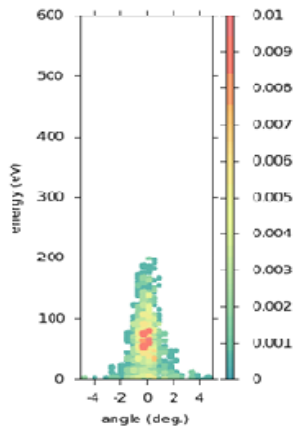
Magnetron plasma with particles



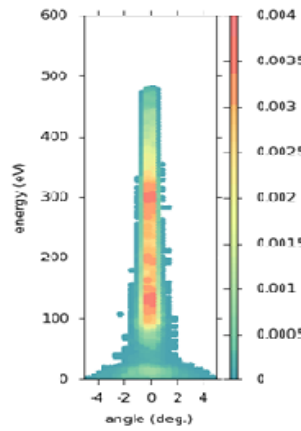
Ion mean impact energy at cathode of magnetron



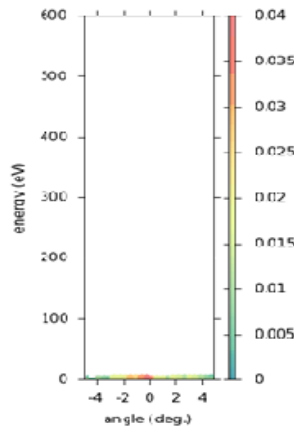
Evaporation surface in vacuum



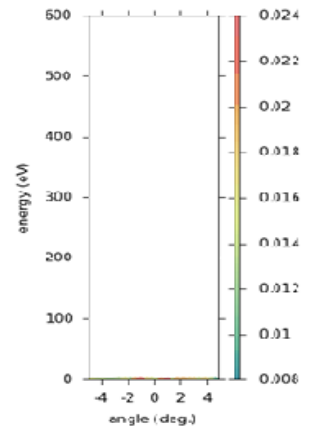
Pulse stage 1



Pulse stage 2

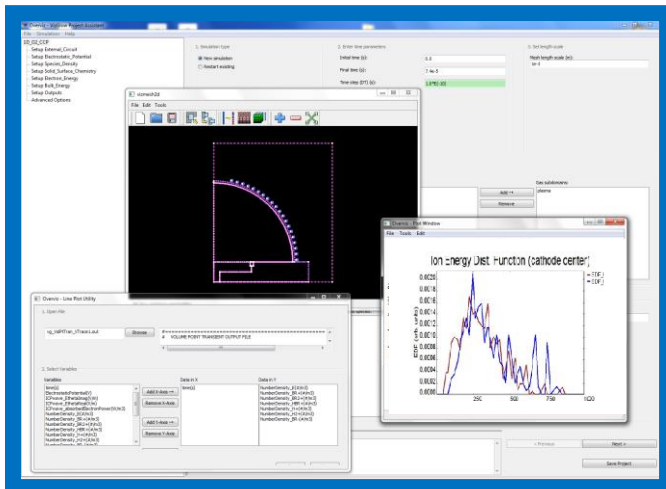


Pulse stage 3



Pulse stage 4

Ion Energy and Angular Distribution Function (IEADF) at a wafer surface for a Pulsed Plasma in Semiconductor Manufacturing



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

For more information, please contact us:



Esgee Technologies, Inc.

1301 South Capital of Texas Hwy.,
Suite B-122
Austin, TX 78746
USA

Email: sales@esgeetech.com

Website: <http://esgeetech.com>