**SIMION® 8.1.2**

**New Release**

The industry standard for charge particle optics simulation.

- Design and improve instruments, mass spectrometers and other ion optics lens systems.
- Calculate electric and magnetic fields from 2D & 3D models, static or RF (quasistatic)
- Calculate charged particle trajectories.
- Visualize, optimize, and analyze results.
- Extensible user programming for crazy flexibility.
- Free basic tech support–phone/e-mail/forum.
- Widely used for 35 years both commercially and in academia, including by most MS manufacturers.

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Free 8.1.x updates included with 8.1 purchase

Scientific Instrument Services, Inc.
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Phone: 908-788-5550       FAX: 908-806-6631          Web: http://www.simion.com
New Features in SIMION 8.1.2 (and 8.2EA/beta)
Now faster, more accurate, and more versatile.

More Accurate

- Improved curved surface handling (**“surface enhancement”**) gives order of magnitude accuracy improvement
- Large 64-bit array sizes up to 20 billion points / 190 GB
  Example: 56 GB PA running in Amazon EC2
- Oblong, non-square grid cells.
- Nested refining techniques

More Versatile

- Poisson solver (Refine), fully programmable
  Example: charged sphere in grounded tube
- Dielectric materials (Refine)
  Example: dielectric sphere in E-field
- Permeability and magnetic vector potential (Refine) [8.2EA]
  Example: C-magnet
- Particle creation API (8.2EA)
  `add_particles {mass=m,charge=q,...}`

Platforms and Performance

- High quality 3D (OpenGL) graphics on View screen [8.2EA]
  Programmable plotting capabilities for B-fields, gas flow, and wire coils.
- Integration with Lua/C, Excel, gnuplot, Origin, VirtualDevice, MATLAB® (8.2EA), Fluent/COMSOL (8.2EA), Poisson Superfish (8.2EA), QuickField™ (8.2EA), and other programs.
- Multicore Refines (8.1)
  Multicore Fly’m (8.2EA)
  Native Linux batch mode binary (8.2EA)
  Additional parallelization [8.2EA]

More examples

- Nested refining techniques
- Permeability and magnetic vector potential
- Particle creation API

Supplemental Documentation expanded

- New GUI dialog library (8.2EA)
- Third-party add-on package: Virtual Device Hydrodynamics 21.2
  Gas flow solver for supersonic compressible conditions.
- New API’s and new programming segments for run automation (initialize_run, terminate_run, flym) [8.1.1], updating and refining geometries within the View screen, manipulating the model from Lua, and more.
  Example: voltage/geometry optimization

Early Access

- Trial versions of features being developed for the next major version (8.2EA) can be previewed by 8.1 users via the “Check for Updates” button
- New APIs and new programming segments for run automation (initialize_run, terminate_run, flym) [8.1.1], updating and refining geometries within the View screen, manipulating the model from Lua, and more.
  Example: voltage/geometry optimization

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For more details, see http://simion.com/advances