PLASIMO modules

Plasma

- LTE: Equilibrium Thermodynamics
- Quasi-LTE: Elemental Diffusion
- Non-LTE: Drift-Diffusion-Inertia, Quasi-Neutrality
- Non-thermal: Monte-Carlo/Hybrid

Electromagnetic

- Electrostatic and Magnetostatic
- Inductive: Frequency and Time Domain
- Microwaves

Temperature and Flow Fields

- Subsonic and Supersonic
- Compressible and Incompressible

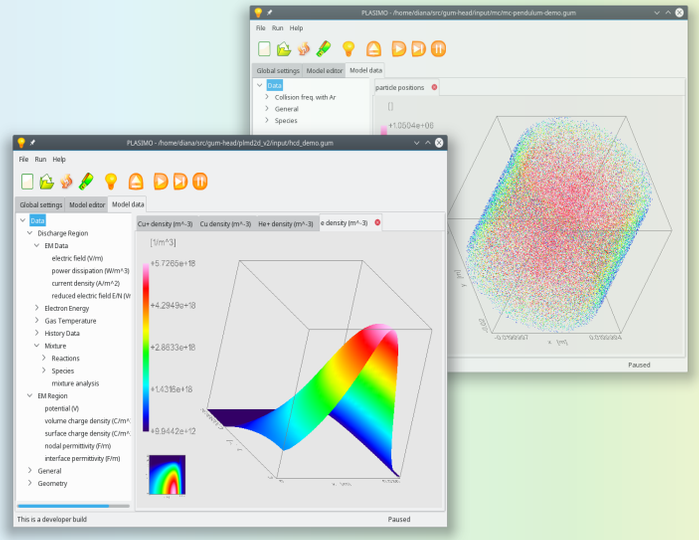
Radiation Transport

Builtin Boltzmann Solvers: BOLSIG+ and LoKI-B

Chemistry

- Global Model, Collisional Radiative Model
- Chemical Reduction Tools: PA, ILDM

- Created for modeling of plasmas with various degrees of equilibrium
- Designed as a flexible and user friendly modeling toolbox
- Available for Windows, macOS and Linux/Unix



The Plasma Simulation Software

PLASIMO

for research, education, industry and innovation

P.O.Box 6336, 5600 HH Eindhoven, The Netherlands
info@plasma-matters.com
www.plasma-matters.com

Plasma Matters

www.plasma-matters.com

Plasma Matters.

TU/e EINDHOVEN UNIVERSITY OF TECHNOLOGY

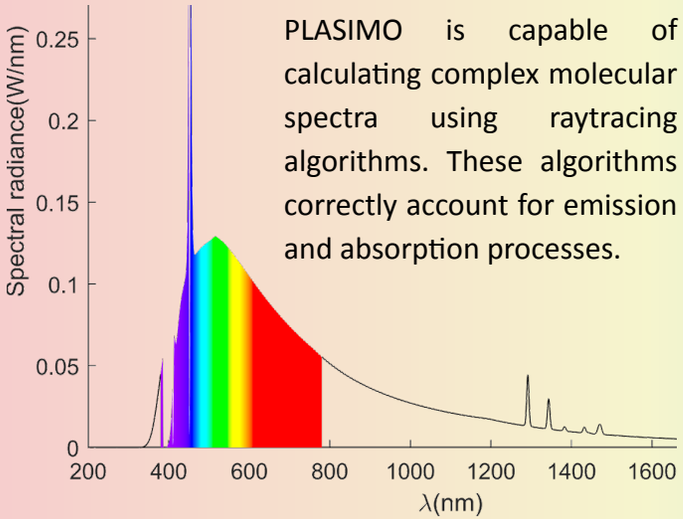
www.plasma-matters.com

Assorted PLASIMO applications

Complex mixtures

PLASIMO has been used to model very complex mixtures, such as CO_2-CH_4, H_2-N_2-O_2, and O_2-$SiCl_4$. PLASIMO provides a number of chemical reduction tools, such as Pathway Analysis and Intrinsic Low Dimensional Manifold.

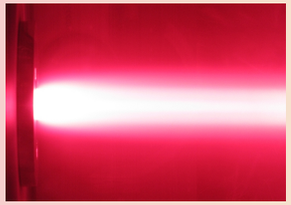
Transport and radiation in complex mixtures

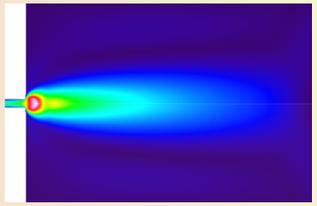


PLASIMO is capable of calculating complex molecular spectra using raytracing algorithms. These algorithms correctly account for emission and absorption processes.

Cascaded arc

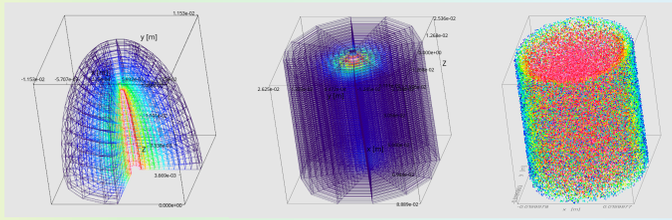
PLASIMO has been used for simulating a plasma source for material research under fusion-relevant conditions (Magnum-PSI). PLASIMO successfully handles the challenging combination of the transonic flow field and magnetic confinement.

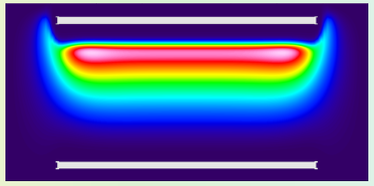


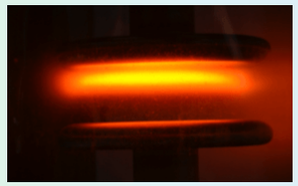


Capacitively coupled plasmas

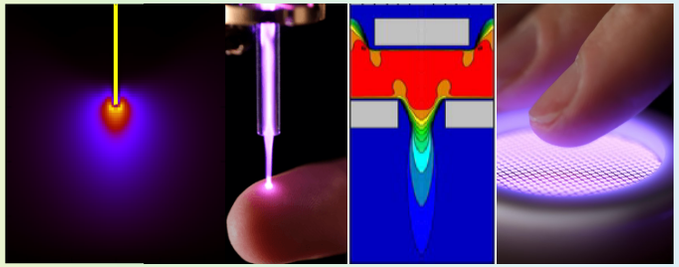
PLASIMO has been widely used for CCP plasmas in various configurations and for a large range of operating parameters.

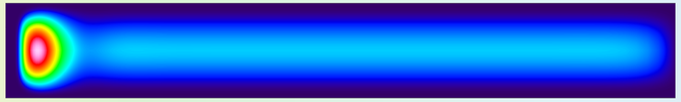


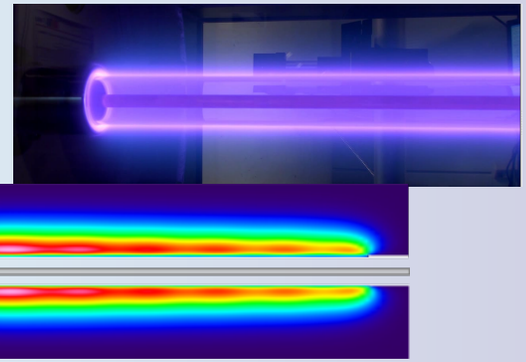




PLASIMO has helped research on micro-plasmas for biomedical applications, on dielectric barrier discharges for air cleaning and surface treatment, sputtering plasmas for laser applications, and reactors for surface modification.







Microwave plasmas

PLASIMO self-consistently describes the interaction between the electromagnetic and plasma aspects of the microwave discharges. PLASIMO has helped research on surfatron plasmas, coaxial waveguides, microwave plasma torches, and surfaguides.

Inductively coupled plasmas

PLASIMO offers two different approaches for solving the ICP fields: frequency and time domain modeling. This makes it applicable to ICP plasmas in various regimes, including low frequency and low pressure.