



Cantera

Cantera provides an open source software suite that helps users solve problems involving thermodynamics, chemical reaction rates, and fluid transport processes.

They maintain a robust library with a user-friendly interface for scientific computation of physical phenomena that involve thermodynamics, chemical kinetics, and mass transport.

APPLICATIONS

Modeling composition of Jupiter and Saturn's atmosphere

Modeling photodissociation of water in comets

Used to solve example problems in the textbook, "Introduction To Combustion Concepts" by Turns and Haworth

PLANNED FEATURES

- + Python interface with automatic unit conversion from customary systems to the SI system
- + Adaptive preconditioning for the solution Jacobian Couple with computational fluid dynamics software
- + Plasma kinetics and reactions with a distinct electron temperature

PROJECT NEEDS

Add a new thermodynamic model	\$5,000
Overhaul feature and model documentation	\$15,000
Overhaul equilibrium calculations and solvers	\$25,000
Couple with computational fluid dynamics software	\$20,000



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For more information on Cantera, including our governance structure and project roadmap, please visit:

<https://cantera.org/>

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