



Real World Models. Real Time Results.

M-Star CFD is a computational fluid dynamics software that pairs modern lattice-Boltzmann algorithms with modern GPU architectures. Designed to run on 100+ million point meshes on a single computer, engineers and researchers can produce detailed, accurate process simulations in minutes.

Maximum Amount of Science Per Unit Man-Hour

M-Star CFD helps you rapidly and accurately model complex physics simulations for bioreactors, agitated tanks, recirculation systems [and more](#).

- Solve more complex and rich physics on millions and billions of grid points.
- Model transient, three-dimensional physics in real-time with billions of updates per second.



EXPLORE PHYSICS CAPABILITIES

Minimal User Specification & Setup Time

M-Star CFD includes a graphical user interface (GUI), solver and post-processing component.

Hardware Requirements

- NVIDIA GPU with compute capability of 3.5 or greater
- Intel or AMD x86-64 processor with four physical cores
- Compatible with both Windows 64-bit and Linux operating systems
- 8 GB of RAM and 8 GB of hard disc

FULL SYSTEM REQUIREMENTS

M-Star In the Industry

M-Star is trusted by leading firms in the chemical, biopharmaceutical and energy sectors.



A CFD Digital Twin to Understand Miscible Fluid Blending (2021)

M-Star and AbbVie build accelerated digital twins of a physical mixing tank to predict real-time fluid mechanics with a fidelity that rivals experimental data.

[READ MORE](#)



A Mechanistic Approach for Predicting Mass Transfer in Bioreactors (2021)

M-Star and Bristol Myers Squibb validate a mechanistic transport model to predict oxygen transfer rates within stirred tank bioreactors at multiple scales.

[READ MORE](#)



Modeling Mass Transfer in Stirred Microbioreactors (2021)

M-Star and Pfizer present a generalized framework for modeling mass transfer in two-stage, stirred tank bioreactors to aid the scale-up process.

[READ MORE](#)

Get More Information

Learn everything you need to know about M-Star:

- Getting started
- Creating models
- Running the solver
- Processing output data
- And much more

[EXPLORE DOCUMENTATION](#)

Contact M-Star

Ready to get started?

Need more information?

Want to request a demo or free trial of M-Star?

Get in touch with our team.

[CONTACT US](#)

M-STAR

The future is predictable.

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