INTEGRATED ENGINEERING SOFTWARE

www.integratedsoft.com

MAGNETO

2D/RS Magnetic Design Software

MAGNETO is **INTEGRATED's** powerful 2D/RS magnetic field solver offering cutting edge electromagnetic design capabilities.

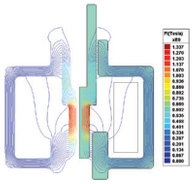
MAGNETO provides both **Finite Element Method (FEM)** and **Boundary Element Method (BEM)** solvers, so you can select the best analysis method for your application. Get smooth, reliable and extremely accurate results for even the most complex magnetic design problems.

Engineers and scientists depend on **MAGNETO** for the design and analysis of magnetic equipment including:

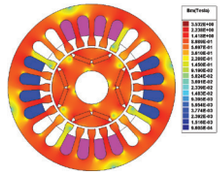
- electromagnet and permanent magnet assemblies
- AC/DC motors and generators
- solenoids, relays and actuators
- sensors
- magnetic shielding
- particle accelerator magnets
- magnetic levitation and bearing systems
- magnetizing fixtures
- recording heads

Speed, accuracy... plus reduced costs

MAGNETO maximizes productivity by allowing for the simulation of virtual prototypes on the computer. **MAGNETO** significantly reduces design and prototype costs and provides engineers far greater insight into design optimization and verification.



Rotational symmetric model of constant force solenoid showing field lines plot



2D model of interior permanent magnet motor showing flux density plot

Hybrid Simulation Tools for Electromagnetic and Particle Trajectory Design Analysis

SOFTWARE THAT LIVES UP TO THE POWER OF YOUR IDEAS

WE GO BEYOND TRADITIONAL MULTIPHYSICS:

- Search-based 2D/RS Magnetic field solver. NEW
- Metaheuristic approach for optimizing simulation based electromagnetic designs. NEW
- INTEGRATED's latest innovation **"Coils and Windings Editor"** to facilitate AC motor design. NEW
- Precise calculation of electrical parameters using our proprietary **Boundary Element Method (BEM) solvers**.
- **Finite Element Method (FEM) in addition to BEM.** This hybrid approach uses the strength of each method while designing an electromagnetic system.
- Built in API, Parametric and/or Scripting capabilities

The **INTEGRATED API** enables the direct control of program functions by utility scripts or macros created in tools such as EXCEL or Visual Studio. Scripting can control the entire process of model creation and testing.

- Direct import of models from CAD partners including: Autodesk, PTC, Solid Edge and SolidWorks.

MORE BENEFITS:

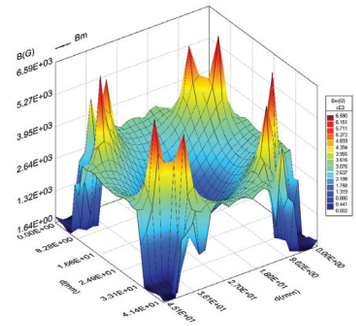
- Easy-to-use and intuitive interface.
- High resolution 3D graphic representations that can show enhanced tracing of points on a model.
- Automatic meshing and removal of intersecting geometries.
- World class support team ready to unlock your ideas.

MAGNETO

For many systems, it is important for multiple solvers to be combined. INTEGRATED develops comprehensive solutions for scientists modeling prototypes that require multiphysics analysis.

"We rely on **MAGNETO** to design many varieties of permanent magnet and electromagnetic devices. We have found good correlation between model prediction and measurements on final products. We especially like how easy it is to create/ modify geometry, how quickly the self-adaptive solver converges and the ability to solve parametrically."

— Michael Devine, Applications Engineering Manager, Dexter Magnetic Technologies, Inc.



3D graph that can show enhanced tracing of points on model

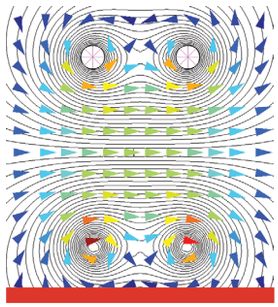
PUT OUR SOFTWARE TO THE TEST

Don't take our word for it.

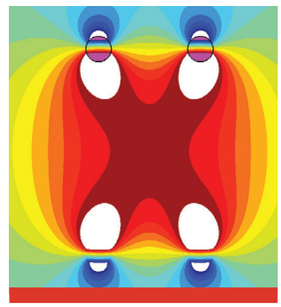
Contact us for a 30 day free evaluation and start improving productivity today. Ask for a live demo.

Visualize, Analyze, Optimize

MAGNETO provides outstanding visualization features for detailed analysis of magnetic systems. Automated model creation using built-in API and Parametric Utilities combined with Self-Adaptive **BEM** and **FEM** solvers enable rapid optimization of designs.



Rotational Symmetric Model of Helmholtz Coils showing Vector Potential Contours and B Field Arrow Plots



Rotational Symmetric Model of Helmholtz Coils showing Solid Contour Plot of X Component of B Field

MAGNETO comes complete and ready to use. Purchase of additional modules or options is not needed. **MAGNETO** is a fully functional CAE tool. A partial list of **MAGNETO'S** standard features includes:

- Latest innovation "Coils and Windings" editor to analyze large number of coils/rotational transients or highly non-linear switching sources and loads
- Intuitive and structured interface which maximizes productivity for experts and beginners
- Simulation of voltage, current, permanent magnet and impressed field sources
- Static and phasor analysis modes
- Simulation of non-linear ferromagnetic and permanent magnet materials
- Simulation of lossy magnetic materials
- Force, torque, flux linkage and inductance calculations
- A variety of display forms, for plotting scalar and vector field quantities, including graphs, contour plots, arrow plots, profile plots and vector loci plots
- High quality 3D graphics and text utility for preparation of reports and presentations
- Data exportable to formatted files for integration with spreadsheets and other software packages
- Batch function which allows unattended solution of multiple files
- Powerful parametric feature which allows definition of variable parameters to be stepped through allowing for the analysis of multiple "what-if" scenarios, facilitating design optimization
- A wide array of post-processing options for design evaluation and optimization
- Self-adaptative meshing or optional user refinement
- CAD healing utilities for automatic correction of drafting errors
- Large library of permanent magnet and ferromagnetic materials to which additional materials can be easily added

INTEGRATED ENGINEERING SOFTWARE

220 – 1821 Wellington Avenue, Winnipeg, Manitoba, Canada R3H 0G4
T: (204) 632.5636 F: (204) 633.7780 E: info@integratedsoft.com
www.integratedsoft.com