SmartDO™

Smart Computing. Smart Design Optimization

Unique Strength of SmartDO

- **Fire-and-Forget Optimizer Technology. Easy to use and learn SmartLink GUI. No need to work on parametric sensitivity study.**
- **Tcl/Tk based programmable platform. Innovative SmartPET and PET utilities allows the users to embed Tcl/Tk scripts into any text file by means of preprocessing the text file.**
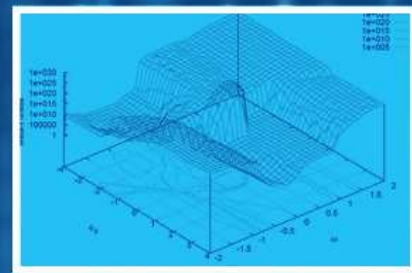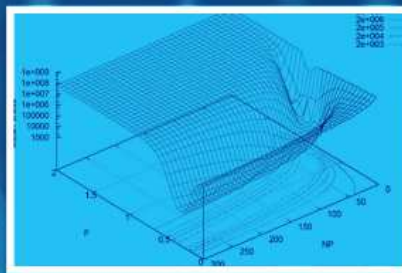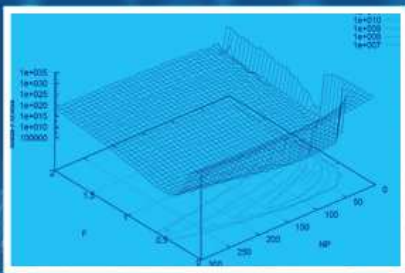
Smart Computing Read More ›
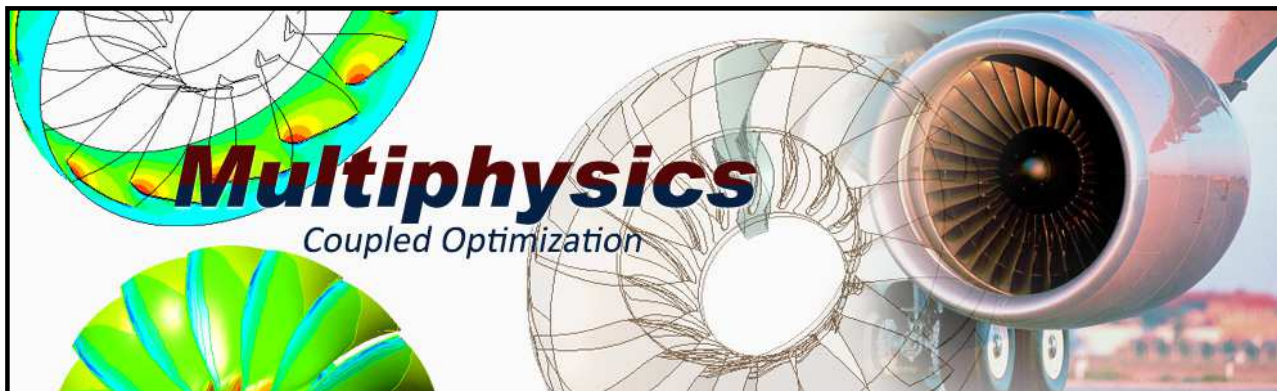
- **Sophisticate mathematics and smart algorithms. Applicable to different disciplines and applications**
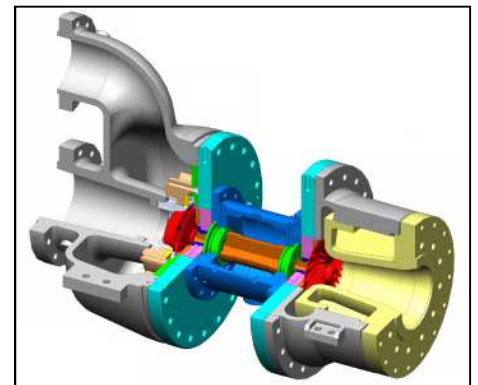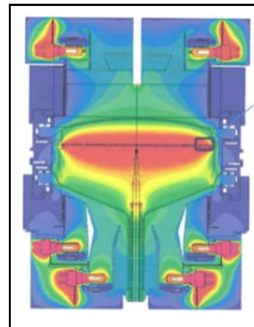- **Strongly CAE-based and industrial-oriented. Comes with our superior consulting and customization services.**

Multiphysics
Coupled Optimization

www.SmartDO.co
www.FEA-Optimization.com
FEA-Opt Technology

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Optimizer

- **All optimizers using Direct Global Search, with Absolute Descent properties.**
- **Gradient-Based Direct Global Optimization**
    - Tunneling and Hill Climbing
    - Local Optimizer with DV Normalized [1]
    - Conjugate Feasible Direction Method (CFDM)[1],Recursive Feasible Direction Method (RFDM)[1], Recursive Conjugate Feasible Direction Method (RCFDM)[1]
    - Smart Dynamic Search(SMDS)[1]
    - Applicable for differentiable problem. Also for both smooth problems or with noise [1,2]
- **The Robust Genetic Algorithms (RGA)**
    - Adaptive Penalty Function[1], Automatic Schema Representation[1], Absolute Descent[1]
    - Automatic Population and Generation Number Calculation[1]
    - Adaptive and Automatic Cross-Over Probability Calculation)[1]
    - Concurrent Sizing, Shaping and Topology Optimization
    - Applicable for Binary(0/1) and Combinatory Optimization
    - Applicable for differentiable and non-differentiable problems
- **No limitation on number of Design Variables and/or Constraints.**
- **Accept infeasible design for the initial design and starting points. SmartDO will resolve the infeasibility before optimization.**

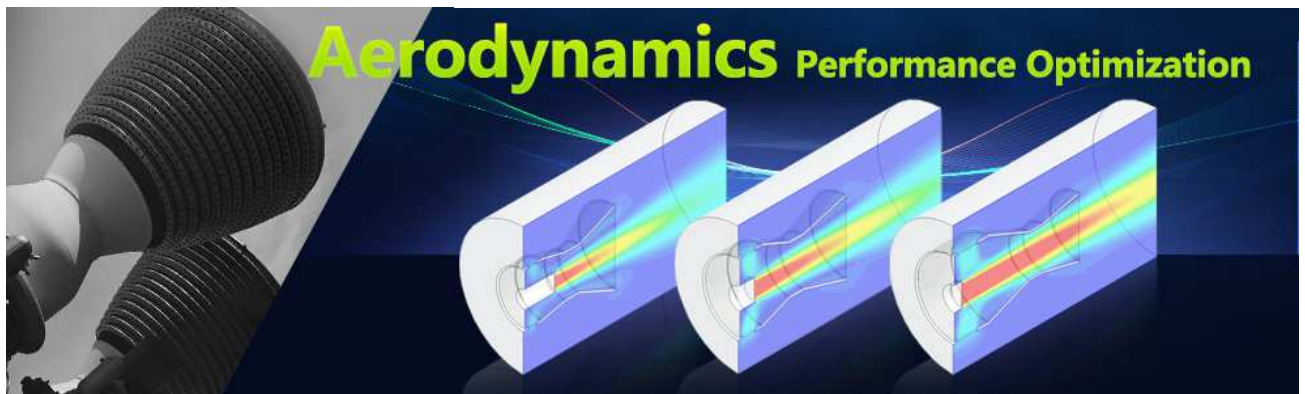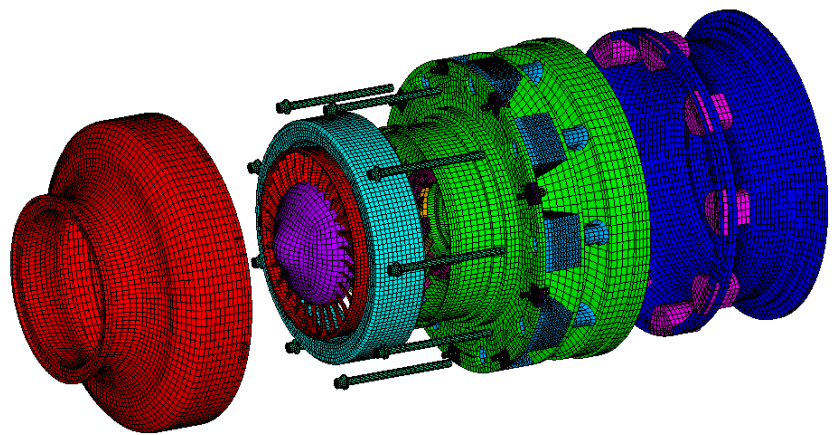**NOTE :** 1. Proprietary algorithms. 2. Dealing with functions with local and minor to medium noise.

Application

- **Semi Conductor : packaging, material fitting/optimization**
- **System Integration & Automation**
- **Light Weight Structure & Topology**
- **Connector, mechanical and EMI**
- **Fan and turbine blades**
- **Laminate Composite**
- **Nozzles & Ejectors**
- **Car Wheel Rim**
- **Steel Construction**
- **Heating & Cooling**
- **Machine Tools**
- **Motor**

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Structural Optimization

Aerodynamics Performance Optimization

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