

Winners of the highly competitive  
SBIR PHASE II Awards



National Science Foundation  
Directorate of Engineering  
Education

Interactive Flow Studies is dedicated to support and enhance learning through the use of state of the art technology.

Interactive Flow Experiment and FLOWEX™ software are used as tutors and they serve to increase basic skills and knowledge of fluid mechanics.

Interactive educational PIV, CFD & CAD technologies together with Rapid Prototyping technology are used as tools that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order thinking, creativity and research skills.

See a Demo of FLOWEX™  
at  
[www.interactiveflows.com](http://www.interactiveflows.com)



National Science Foundation  
WHERE DISCOVERIES BEGIN

## Educational Interactive Flow Visualization & Analysis System

Teach students the complete Design Cycle with this compact Educational Solution:

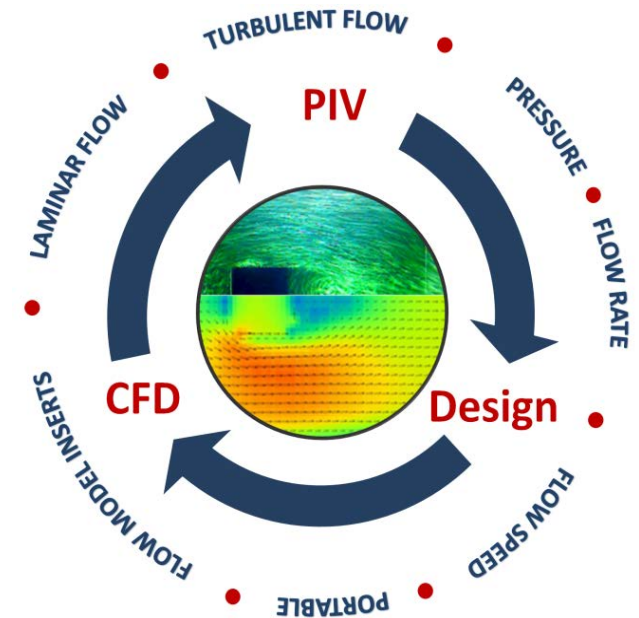
**Design → Build → Test → Analyze**

- Design your own flow inserts with Educational Computer Aided Design (CAD) integrated into user friendly FLOWEX™ software.
- Build the flow inserts with Rapid Prototyping system.
- Simulate the flow around the insert using Computational Fluid Dynamics (CFD), part of FLOWEX™ software.
- Perform interactive experiment with Particle Image Velocimetry (PIV), part of FLOWEX™ software.



Interactive Flow Studies  
[flowex@interactiveflows.com](mailto:flowex@interactiveflows.com)  
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## DESIGN CYCLE

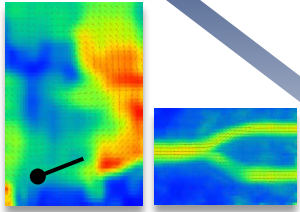
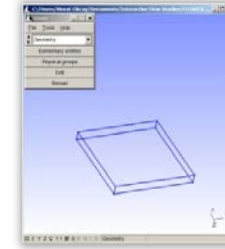


Teach  
21st Century  
Knowledge & Skills

Interactive Flow Studies  
Technology In Science Education & Research

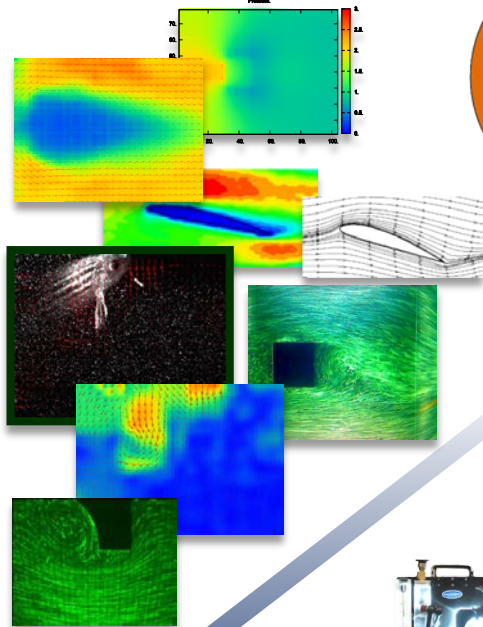
### GMSH Computer Aided Design

- 3D CAD engine.
- Parametric input and advanced visualization capabilities.
- Models are created by successively defining points, oriented lines (lines segments, circles, ellipses, splines, ...), oriented surfaces (plane surfaces, ruled surfaces, triangulated surfaces, ...) and volumes.
- Geometry specification is done either interactively using the graphical user interface or in ASCII text files.



### PIV & CFD

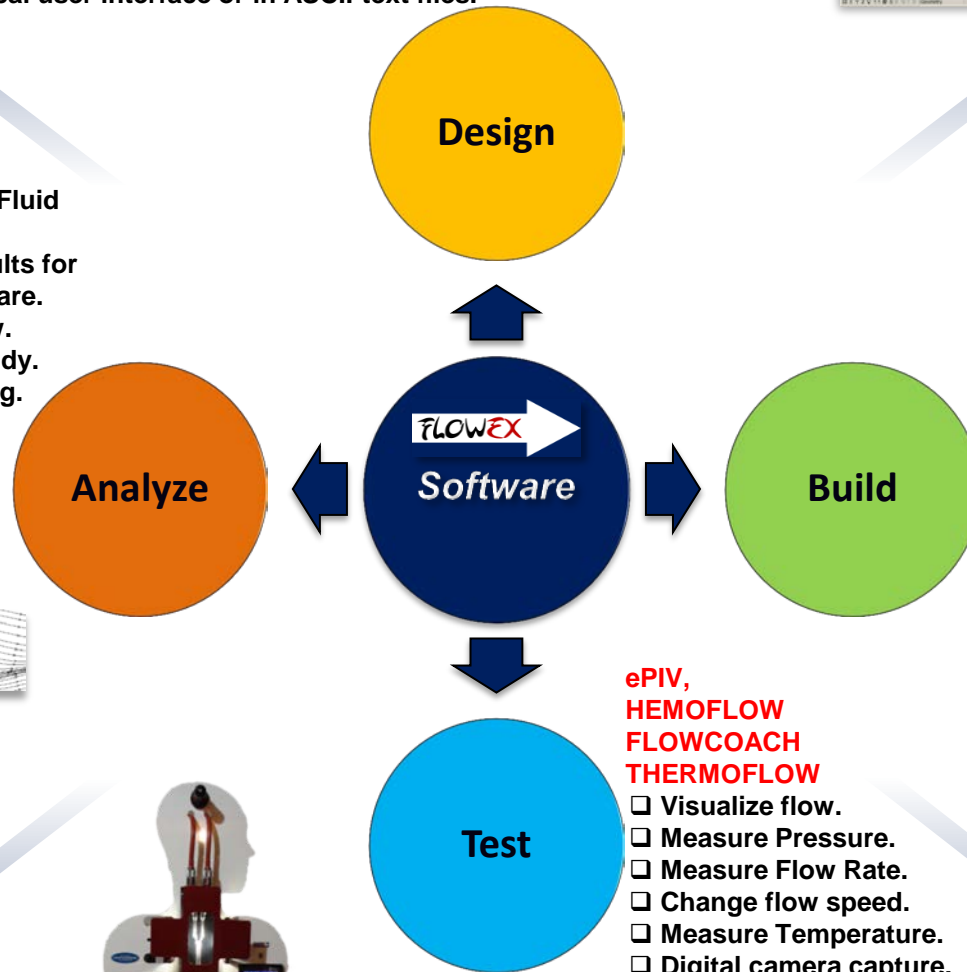
- Analyze flow with Particle Image Velocimetry (PIV) & Computational Fluid Dynamics (CFD)
- Export images, raw data and results for further processing with other software.
- Capture video and images of flow.
- Multiple PC capable for Team Study.
- Web capability for remote learning.



### Rapid Prototyping Machine

- Designed to be easy-to-use with no specialized training required.
- No more waiting for models to arrive from an outside which allows students to have more design iterations with immediate feedback.
- Uses files from FLOWEX or any CAD system.
- Extend students science, CAD and machine tool curriculums by enabling students to build functional models and see their ideas first hand, and then test them.

*Dimensions: 25"X26"X31"*



### ePIV, HEMOFLOW FLOWCOACH THERMOFLOW

- Visualize flow.
- Measure Pressure.
- Measure Flow Rate.
- Change flow speed.
- Measure Temperature.
- Digital camera capture.
- Self cleaning flow model
- Laminar & Turbulent Flow.
- Heated flow model inserts.
- Interchangeable flow inserts.
- Perform Particle Image Velocimetry (PIV).
- Students learn various flow phenomena and PIV through interactive hands on highly visual experiments.

