# Cost Effective Process Equipment Through Simulation

Introduction

In the process industry, energy cost for process equipment is high due to high power consumption. During difficult economic times, the operating cost has to be kept low while maintaining the efficiency of the equipment.

Besides achieving optimum operating condition, equipment failure is another problem. It takes time and money to troubleshoot and fix the problem. The common problems are corrosion, fouling, structural failure, water hammering, vibration, thermal fatigue, etc. Overdesign is not the best solution as it is costly just to make sure the design is within safety margin.

Computer-aided engineering (CAE) software has been playing an important role in facing challenges of process industry. For applications from single physic to Multiphysics, ANSYS solutions cover multidisciplinary industry from basic to advanced capability. Complex applications can be modelled and simulated to save problem solving time.
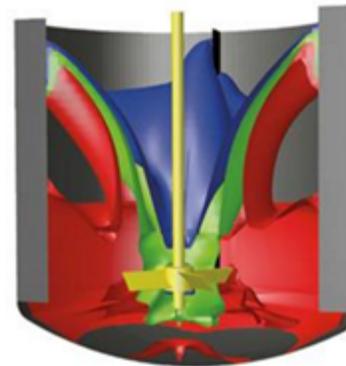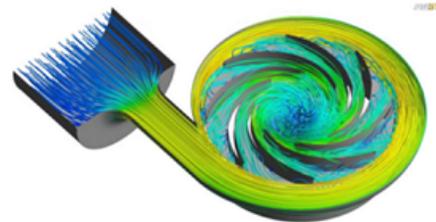
Objectives

This seminar provides an overview of how ANSYS solutions can improve the efficiency and performance for process equipment like heat exchanger, pressure vessel, pump, compressor, reactor, combustor, etc.

Benefits

- Learn how ANSYS simulation tools give you more insight and complete understanding of risk, total cost, and maintenance requirements for process equipment solutions. Thereby enabling you to respond to customer requests while showing your ability to deliver superior results.

- Enables you to predict with confidence that your products will thrive in the real world. Customers trust our software to help ensure the integrity of their products and drive business success through innovation.
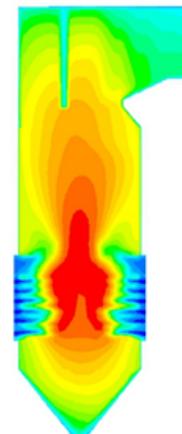
Who Should Attend

Directors, Managers, Engineers and Researchers

What customers say about our solutions

Baker Hughes uses ANSYS Fluent to simulate the two phase flow in the MVP pump **to show how the fluid behaves inside the pump and how to improve the product**. They gained a better understanding of their Electrical Submersible Pump and were able to improve its performance.

Baker Hughes Inc

Davey Bickford's team needed to design a heat exchanger that would generate temperatures greater than 900 C to heat a liquid for 30 minutes to about 100 C at a reasonable cost. They used ANSYS Mechanical thermal transient model to determine the heat flux generated and ANSYS CFD model to calculate the volume of liquid that could be heated. The success of the project lead to the development of a new process to determine heat flux of energetic materials. ANSYS solutions allowed engineers to **anticipate development risks** and enabled them to quickly **make a pragmatic decision** about the **feasibility of producing the product**.

Davey Bickford

In a project with very little time to spare, we pursued multiple CFD analyses to **identify exchanger inefficiencies and evaluate redesigns**. Using Fluent, we reached a **feasible redesign option in time to impact commercial decision-making**. The results showed the potential for at least 25% increase in capacity.

Greg Muldowney, Mobil Technology Company

"ANSYS solutions allowed us to **achieve 14 percent material savings** and optimize the engineering design for a complex heat exchanger used for industrial and nuclear applications. Simulation-driven product development assists us in performing research and development work that meets customer-specific requirements and international standards, and has **reduced product development time from two weeks to two days**."

Nitin Sahebrao Banait, Senior Manager, Design Engineering, GEA Ecoflex India Pvt. Ltd.

"All our customers want answers to their questions really fast. And it's implicit that they want accurate answers. There are plenty of tools around that give you an answer very quickly, but it's more difficult to find a tool that is **both accurate and quick at the same time**. That's ANSYS."

Jonas Persson, Technical Manager, ST-Ericsson

Presenter Profile

Dr Vincent Chai is currently a technical sales consultant in CAD-IT Consultants. He is part of the technical team that support customers in various disciplines. He graduated from NTU with a Ph.D. Degree in Mechanical and Aerospace Engineering, where his thesis was focused on flapping wings aerodynamics for unmanned vehicles. He has worked as a project officer for DSTA project on debris flight analysis and Research Engineer for NIDEC Singapore.

Event Information

Date	: 29 January 2016	
Time	: 2:00 pm - 5:00 pm	
Venue	: CAD-IT Consultants (Asia) Pte Ltd	
	159 Sin Ming Road, #03-05 Amtech Building, Singapore 575625 (**view map**)	
Agenda	2:00 – 2:30 pm	Registration
	2:30 – 3:30 pm	Presentation: ANSYS Simulation for Process Equipment
	3:30 – 3:45 pm	Break
	3:45 – 5:00 pm	Hands-on session

Register NOW

- Register online for this **free** event.

- CAD-IT Consultants reserves the right to cancel or postpone the event due to unforeseen circumstances.

For enquiries, please call 6508-7575 or email at caditevents@cadit.com.sg

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About CAD-IT Consultants

Founded in 1991, CAD-IT is a leading global ISO 9001:2008 certified Product Life Cycle Management (PLM), manufacturing and education provider. CAD-IT's mission is to provide world-class solutions and services that enable companies and their supply chains to achieve greater product innovation, quality and productivity with drastically reduced time-to-market and costs.

CAD-IT is honored to have received over 80 international and national awards since its inception for marketing and service excellence. Among its most recent accolades are the Singapore Enterprise 50 Award (2015, 2014, 2013, 2012), Singapore SME 1000 (2014, 2013, 2012, 2011), Asia Pacific Entrepreneur Award (APEA) - Outstanding Entrepreneur Award (2012, 2010, 2009), the Singapore Prestige Brand Award SPBA - Established Brand Award (2012, 2011, 2010, 2009), SPBA - Regional Brand Award 2012 and SPBA - Hall of Fame 2012.

CAD-IT Consultants' suite of PLM solutions include ANSYS (System-level, Multiphysics Simulation), Goldfire Innovator (Innovation Process Management), Moldflow (Plastics CAE), Stampack (Sheet Metal Forming), Deform (Bulk Metal Forming CAE), SpaceClaim (3D Direct Modeler), Mentor Graphics Valor DFM (Design For Manufacturing), Valor MSS (Complete Manufacturing Execution Suite) and Cortona3D (3D Technical Documentation).

Since February 2010, CAD-IT has partnered the Singapore Workforce Development Agency (WDA) to offer Advanced Certificate courses in PLM and Engineering Simulation, under the Workforce Skills Qualifications (WSQ) framework, with the charter to upgrade the technological capabilities of organizations in Singapore so as to enable them to undertake high value-add design, engineering, manufacturing and R&D activities.

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