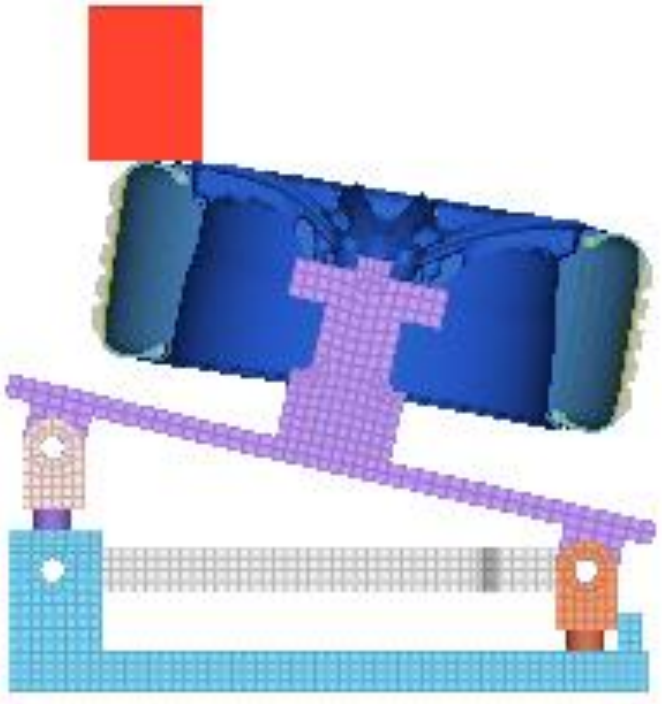
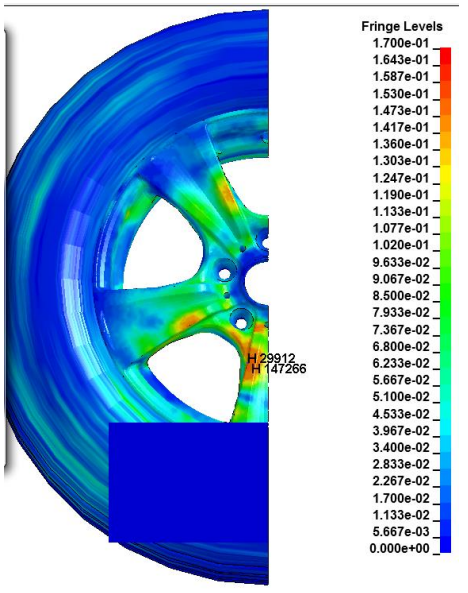
Applications of Finite Element and CFD Analysis in the Industry

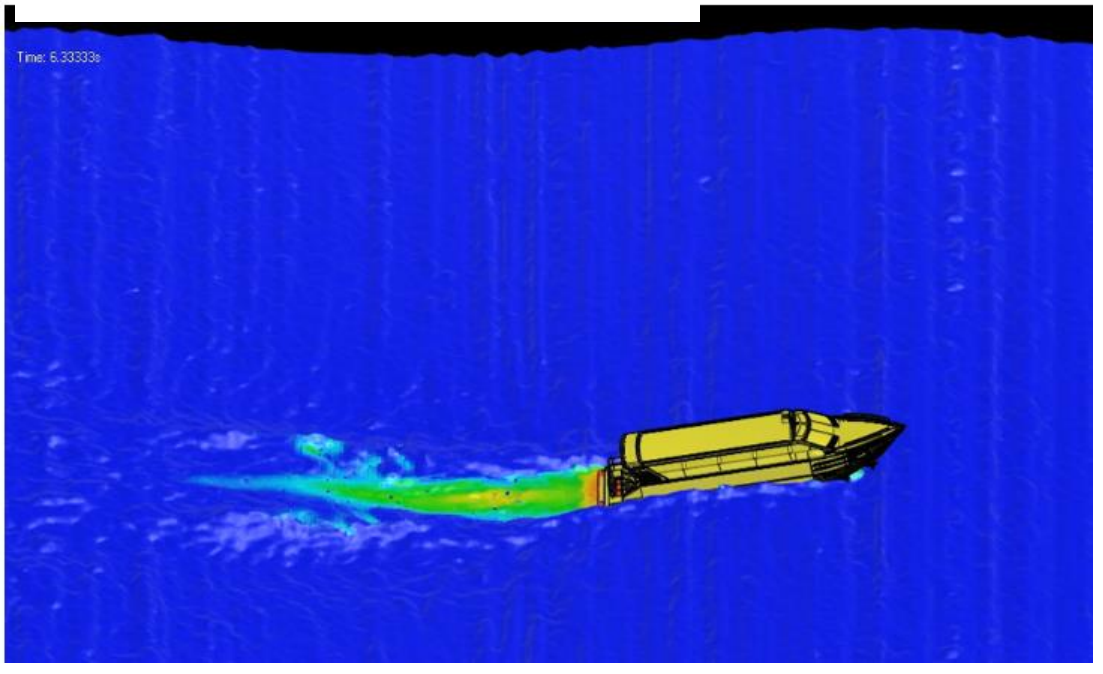
Nowadays, Computer-Aided Engineering (CAE) software is an indispensable tool in design and engineering. CAE (FEA and CFD) software is commonly employed by engineers to assess the performance of the design, estimate the safety margin and identify weaknesses of the design. The use of CAE can significantly reduce cost and time associated with design and testing procedures. Furthermore, better product quality can be achieved via the re-design process.

CAE Research Team of MTEC is an engineering solution provider. Our focus is on offering FEA and CFD solutions to the industry. We have been doing consultation services for more than a decade, serving various industrial sectors.





The Wheel Impact Test
FEA helps the wheel designer to check the weak point of the design. Therefore, lighter and stronger wheels can be achieved via the FEA-driven design process.



Flow around an Al-Alloy Boat
The flow pattern around this boat can be predicted by CFD. The flow information is used for designing the boat to be stronger and more streamlined.

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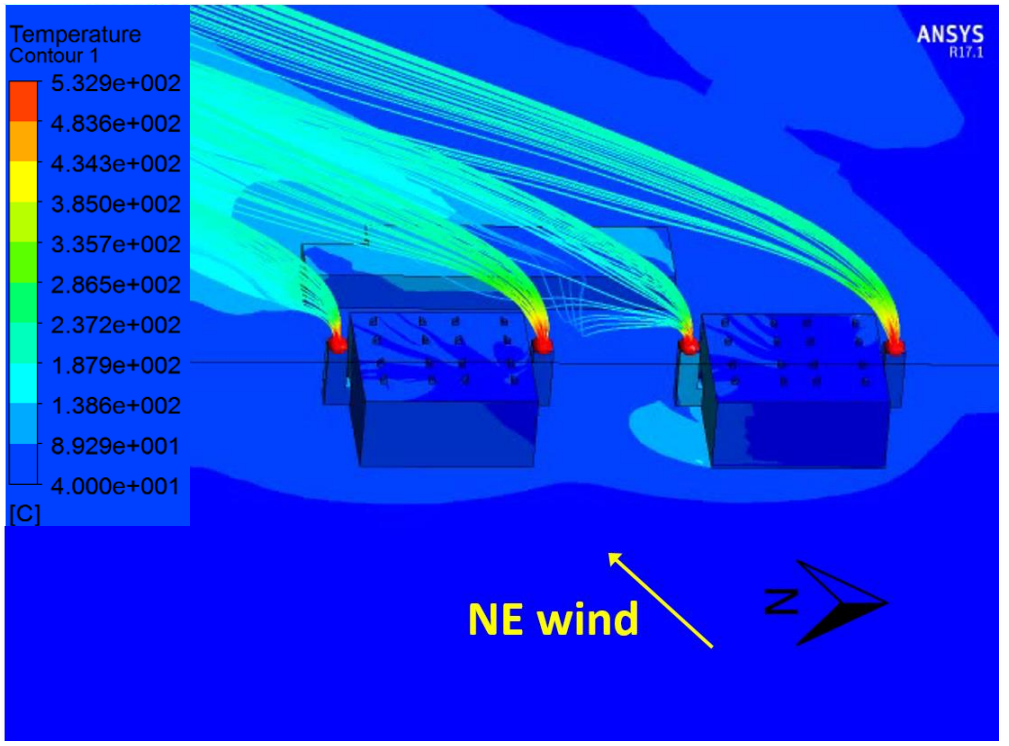
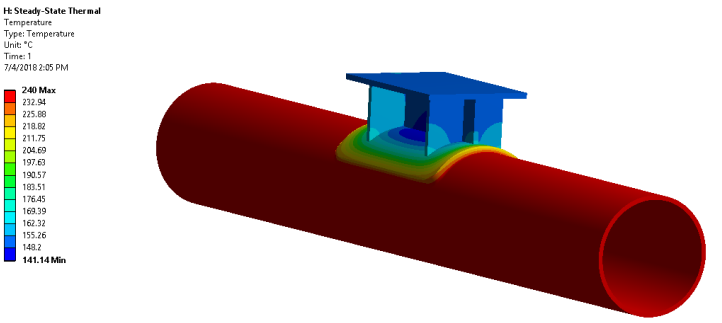


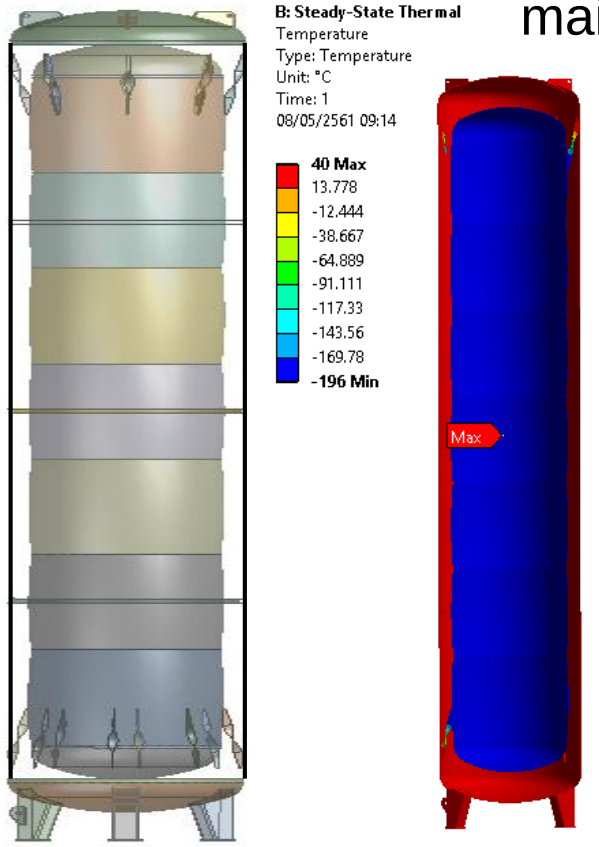
Flow of Hot Gas around Turbine Buildings

The temperature distribution around buildings releasing hot gas can be predicted by CFD and FEA. Based on the predicted result, decision to redesign the hot gas release parameters or not can be made.



Thermal Stress on an Offshore Piping System

The thermal stress due to the hot gas flow can be calculated by FEA. Subsequently, the fatigue life of this piping system can be estimated for maintenance planning.



Thermal Stress on Cryogenic Tank

The thermal stress due to the temperature difference between the ambient and inside cryogenic liquid can be estimated by FEA. Subsequently, the fatigue life of the tank can be predicted.