Mechartés
SIMULATION EXPERTS

Oil & Gas - Capabilities Overview

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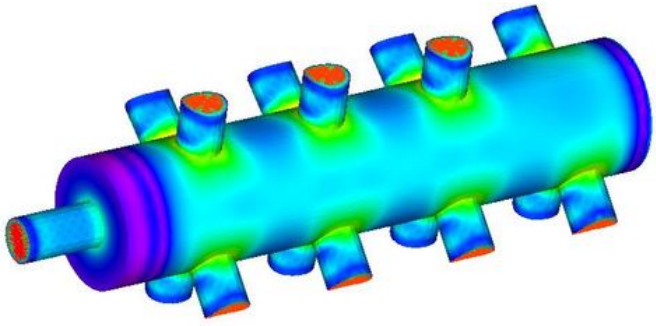
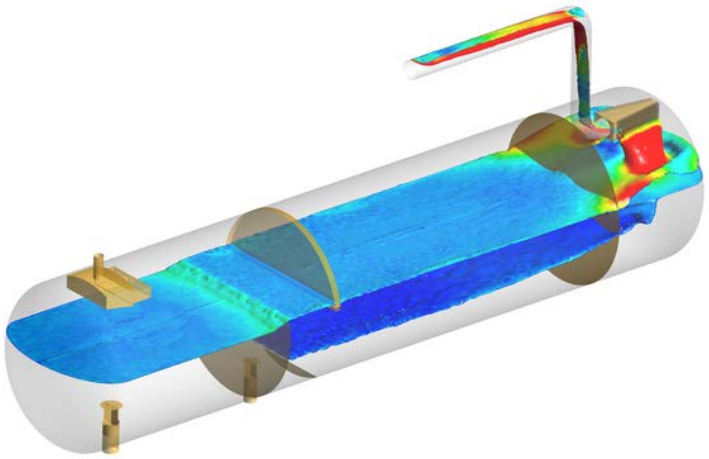
Engineering Services For Oil & Gas

Mechartes specializes in providing advanced engineering services like Computational fluid dynamics (CFD) and Finite element analysis (FEA) for oil and gas sector for both onshore and offshore plants. CFD analysis becomes extremely helpful such Multi-phase modeling and simulations for different fluid interactions, flow rates, slug formation, fluid pressures etc and this momentum can be used to assess different inlet distribution configurations and baffles arrangements on the separator and other pressure vessels. Additionally FEA tools can be used for prediction of the life and failures of the pressure vessels internals.

Application of CFD Modelling

- Separator Analysis – Multiphase (3phase and 2phase separators)
- Flow distribution and optimization studies
- Process design verification
- Performance based analysis and cost-effective design
- Sloshing analysis for the offshore plants
- Efficiency study for different flowrates and fluid compositions.
- Heat exchanger performance analysis
- Heat coil thermal analysis
- Process gas distribution studies for KOD, columns and towers
- Cooling towers and chilling yard CFD simulations
- Fluid dynamical assessment studies





Application of Finite Element Analysis

- Pressure vessel (Separator's) internals FEA studies and mechanical optimisation
- Life assessment studies for pressure vessels and equipment
- Nozzle load analysis and Support design
- Stress, Vibration, Fracture and Fatigue studies for pressure vessels, heat exchangers
- Skid Stress, Vibration, Fracture and Fatigue analysis
- API 650, API 620 Tank design and detail engineering
- Pressure Vessel design as per ASME Sec.VIII Div.2 & PD5500
- Pulsation and Mechanical Analysis as per API 674 & 618
- Root cause analysis