CFD Analysis of various PI equipment in the context of the IbD® project

26th Process Intensification Network Meeting
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Contents

- **ANALISIS-DSC**
- **PI Technologies:**
- Oscillating Baffle Reactor
- Spinning Disk Reactor (free Surface)
- Taylor-Coutte Reactor
- **Conclussion**

Analisis-DSC

We are a SME engineering service company specialized in **Mechanical** and **Industrial Processes** using **CAE** (Computer Aided Engineering) software tools in Fluids, Heat Transfer, Structural Mechanics and Granular Flows.

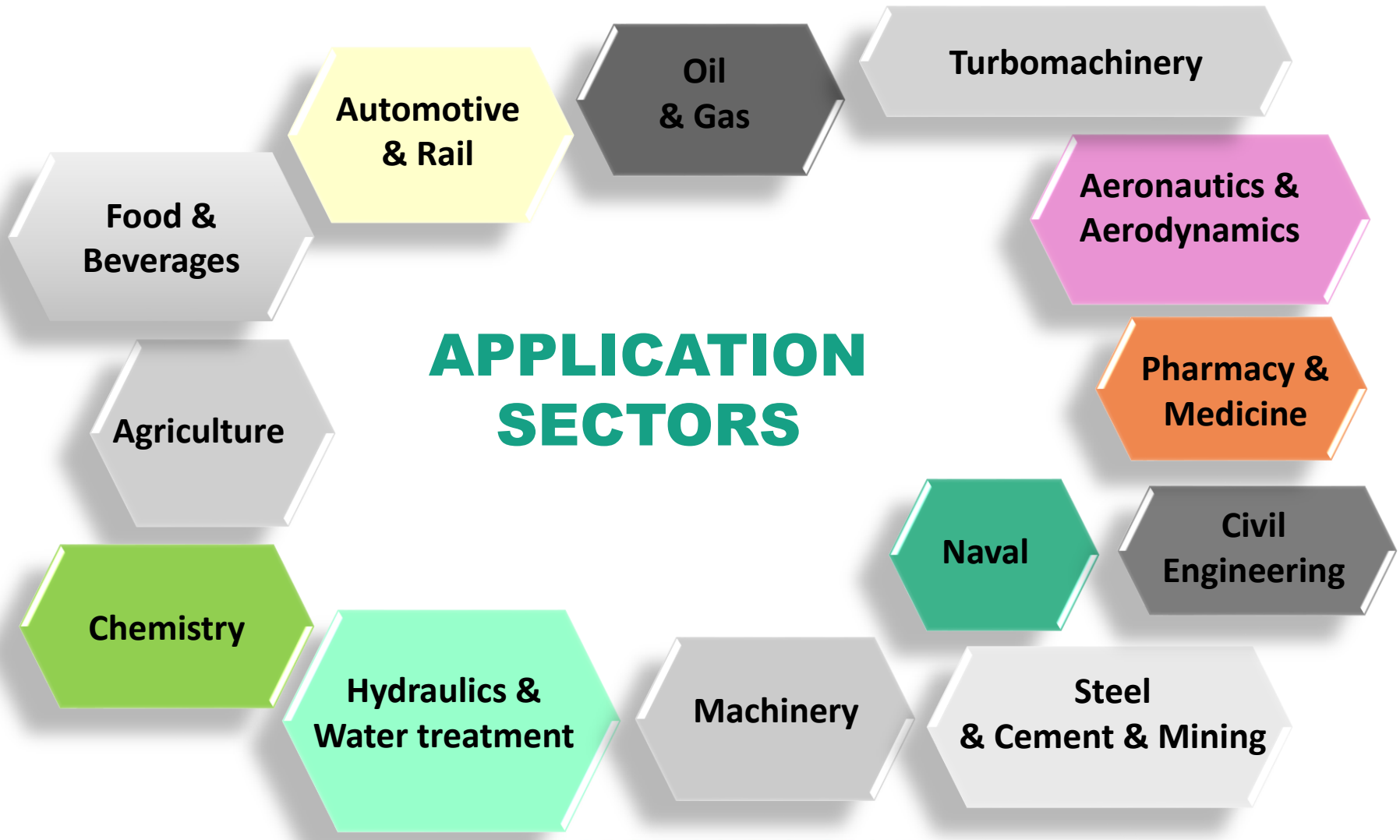
Engineering services such as:

- Basic Engineering.
- Failure Engineering.
- Analysis and Optimization of Industrial Processes.
- Scale-up/Scale-down Industrial Processes.

Our history:

- **2002** company was founded, as distributors of CAE software.
- **2006** we start offering mechanical and industrial processes engineering services using **CFD** (Computational Fluid Dynamics) software tools.
- **2009** we broaden our engineering services using **FEA** (Finite Elements Analysis), **DEM** (Discrete Elements Modelization)**.**

Application Sectors



ANALISIS-DSC
DYNAMIC & SECURITY COMPUTATIONS

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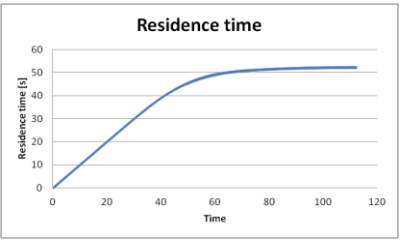
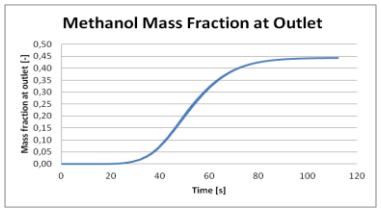
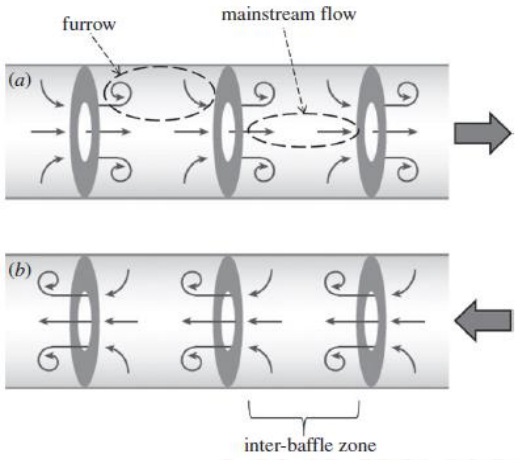
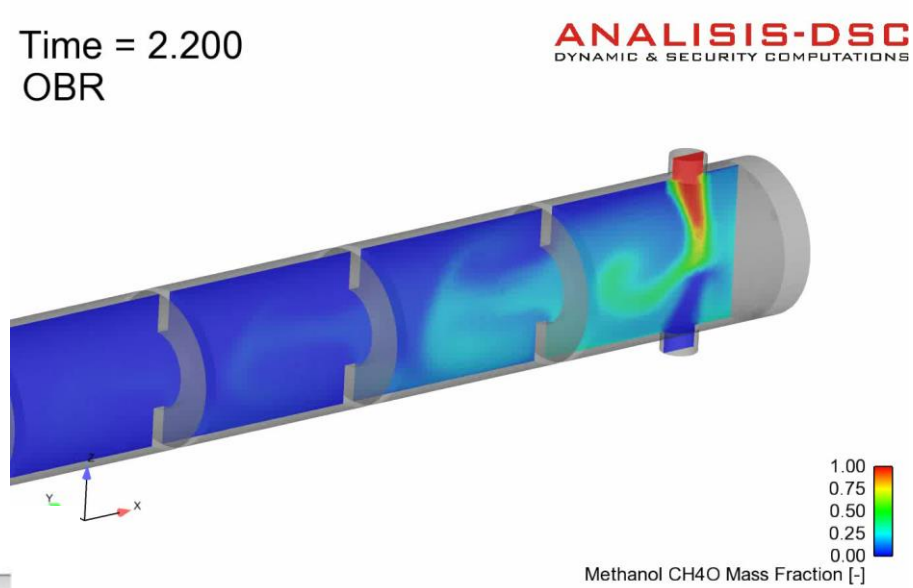
OBR: Oscillating Baffle Reactor

Oscillatory baffled reactors (OBRs) are a novel type of continuous reactor, in which tubes fitted with orifice plate baffles have an oscillatory motion superimposed upon the net flow of the process fluid. The interaction of the baffles with the oscillatory motion of the fluid generates excellent mixing and enhanced transport rates.



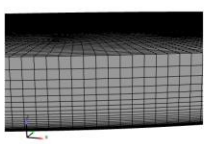


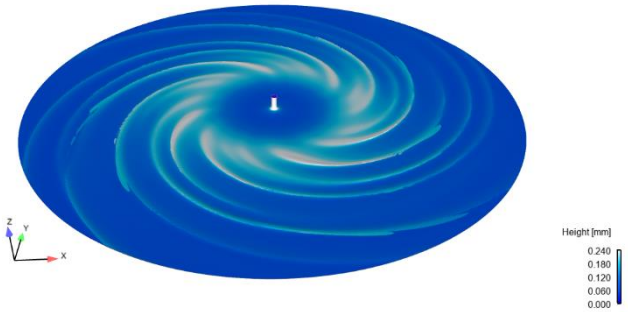


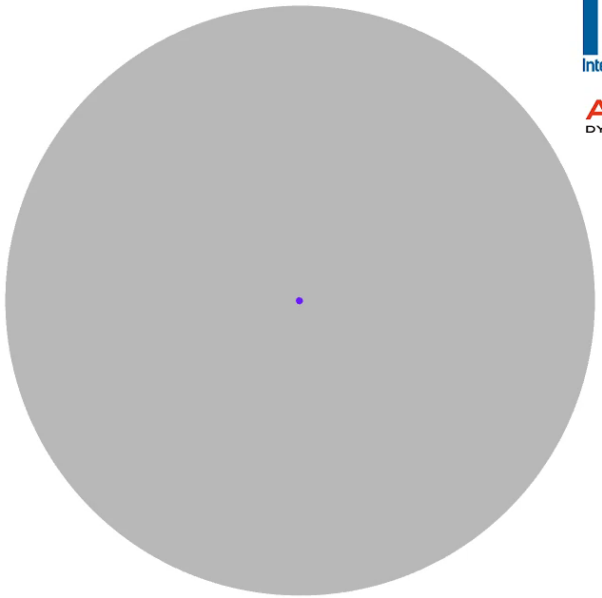


SDR: Spinning Disk Reactor

The spinning disk reactor (SDR) technology imposes high centrifugal acceleration to liquids flowing on its surface. The fluid, which is typically supplied at or near the center of the spinning disk, is rapidly accelerated to the local angular velocity of the disc surface and forms an extremely thin wavy film.

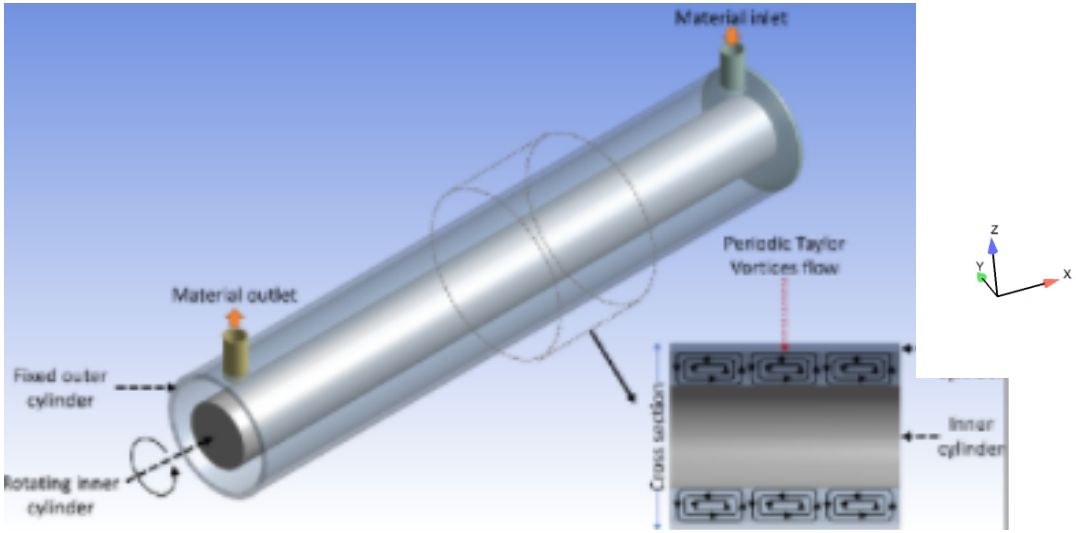


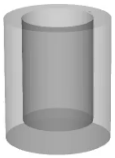




TCR: Taylor-Couette Reactor

The Taylor-Couette reactor technology imposes high centrifugal acceleration and high shear rate to liquids flowing between the gap of the two differentially rotating cylinders





Thank you for listening!

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Partners

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