NOANDISHAN ARYA
PROCESS & ENERGY ENG. CO.

MIXING TECHNOLOGY

STATIC & DYNAMIC MIXERS

NAPECC Design & fabricate a wide range of dynamic & static mixer

NAPEEC'S DYNAMIC MIXERS

Liquids are agitated for a number of purposes, depending
on the objectives of the processing step.

TYPICAL APPLICATIONS:
    1-Simple Mixing
    2-Liquid Blending
    3-Liquid Dilution
    4-Neutralization
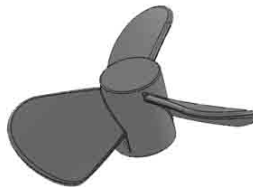   5-Solid Suspension
    6- Solid Dissolution

NAPEEC STANDARD MODELS OF DAYNAMIC MIXERS:

NAPPEC has three standard pre-designed mixer models. For each application suitable
model will be selected based on design parameter and process requirment.

1. Turbine Impeller	2. Marine Propeller	3. High Efficiency Propeller
(Low – to moderate viscosity, Good Radial Flow)	(Low – to moderate viscosity, Good Axial Flow)	(Low energy consumption)

MARINE PROPELLER
Produces axial –flow pattern
High–Speed:
  -Small Propellers turn at 1150- 1750 rpm
  -Large Propellers turn at 400- 800 rpm
The Propeller blades vigorously cut or shear the liquid.
Because of the persistence of the flow currents, propeller agitators are effective
in very large vessels.

TURBINE IMPELLER
Produces radial–flow pattern
Low –Speed (20 to 150 rpm)
For low –viscosity liquids generates strong currents which persist throughout the vessel

HIGH EFFICIENCY PROPELLER
High efficiency mixing
Steady axial flow
Low energy consumption per unit volume of liquid

STATIC MIXERS

NAPEEC'S STATIC MIXERS

Static or motionless mixers have proven to be effective for many specific and valuable process applications. The concept of the motionless mixer is to achieve a uniform composition and temperature distribution in fluids flowing through the device.
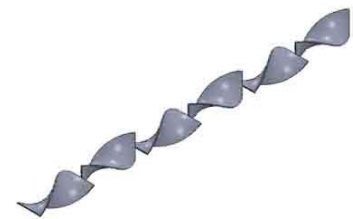
TYPICAL APPLICATIONS

• pH adjustment
• Remineralization of desalinated water
• Blending of miscible liquids and dispersion of immiscible fluids
• Acid & Base Dilution
• Reactions (Such as: Bisulfite injection for Dechlorination)
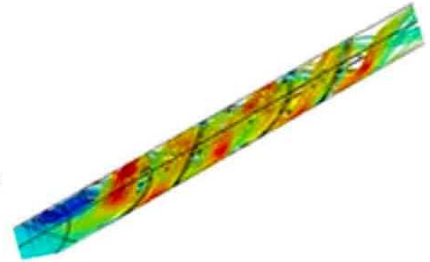
Typical Application(SM1):
Liquid-Liquid Reactions

Typical Application(SM2):
High Viscosity Liquids Dilution

Typical Application (SM3):
Blending & Dispresion

SM1 :
- For turbulent and transitional flow
- No moving parts, no maintenance
- Excellent mixing performance even with wide through-put ranges
- The intersecting blades of the SM1 mixer create cross-stream mixing and flow splitting to achieve rapid mixing even in the most demanding applications such as those with extreme viscosity and volume ratios

SM2 :
- For turbulent flow conditions
- No moving parts, no maintenance
- Excellent mixing performance even with wide through-put ranges
- SM2 is the ideal choice for plugging systems

SM3 :
- Used for laminar, transitional, and turbulent flow applications where periodic cleaning or inspection is required, suitable for most blending or dispersion problems involving liquids or gases
- Mixing elements are easily removable from housing

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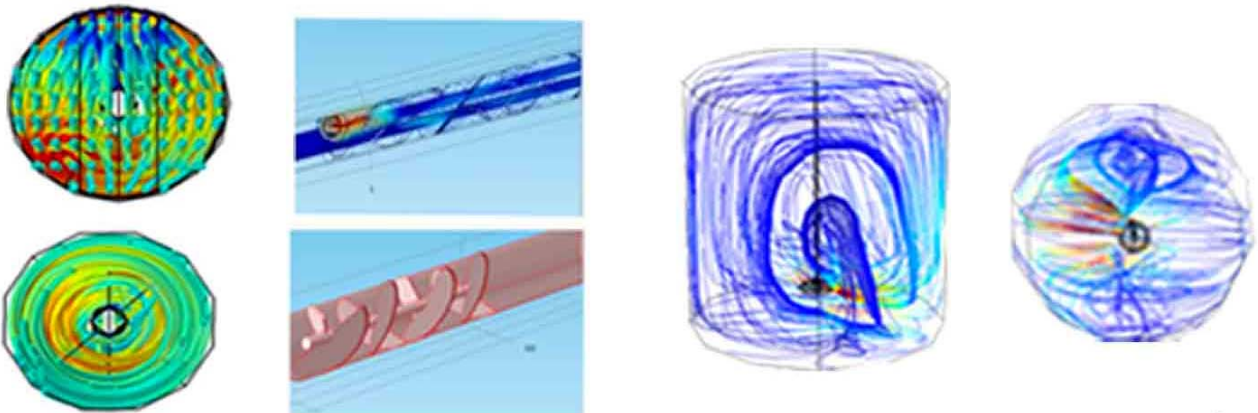
ENGINEERING (DESIGN & ANALYSIS) :
Simulateing mixing efficiency
With using powerfull modeling softwares which use the proven finite
element mothods (FEM) for analysis of various mixing parameters (stream velocity,
turbulancy, eddy stream,..) we can choose optimum design for both static & daynamic mixers.

Mechanical design
By using mechanical design & stress analysis softwares
for modeling, we can improve our products quality
& lifetime under operational conditions.

MATERIALS & EXECUTIONS
- CS & SS, PP, PVDF, PTFE, PVC
- Welded or removable mixing elements
- Connections: DIN, ANSI, …