



Chemical Engineers & Scientists > 30⁺ years experience
Grass-roots Plants in **14** countries > 100⁺ projects
“Process-Intensified” scale-ups > 14 projects

INNOVATIVE MANUFACTURING SOLUTIONS

for

Continuous / Flow Processing

LAB → PLANT

Slurries / Immiscible-Liquids

Gas-Liquid / High Exotherms

Technologies

Flow Chemistry / Micro-Reactors

High shear Film Reactors

Molecular-level mixing

Oscillatory Flow Reactors

Reactive Distillations

STT Reactors

Membrane Reactor

HIC (High Intensity Cavitation) Reactor

Ultra-sound assisted Crystallizers

“Dyna-Wave” Absorbers

DOE (Statistical Factorial Design)

PAT

Key Reactions

Nitrations, Oxidations, Grignards, Halogenations,
Hydrogenations, Rosenmund Redn., Epoxydations,
Suzuki coupling, Phosgenation, Bio-transformations

Scale-up Solutions

- Flexible Modular Skids $\left(\begin{array}{l} T : -70^{\circ} \text{ to } 300^{\circ} \text{ C} \\ Pr : \geq 200 \text{ bar} \end{array} \right)$
- Retrofit existing equipments
- In-built QbD

