

# INNOVATIVE FLOW REACTOR SYSTEM

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A NEW PARADIGM IN CONTINUOUS FLOW CHEMISTRY

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COMPACT. COMPATIBLE. CUSTOMIZABLE

# BATCH REACTOR



## PAIN POINTS

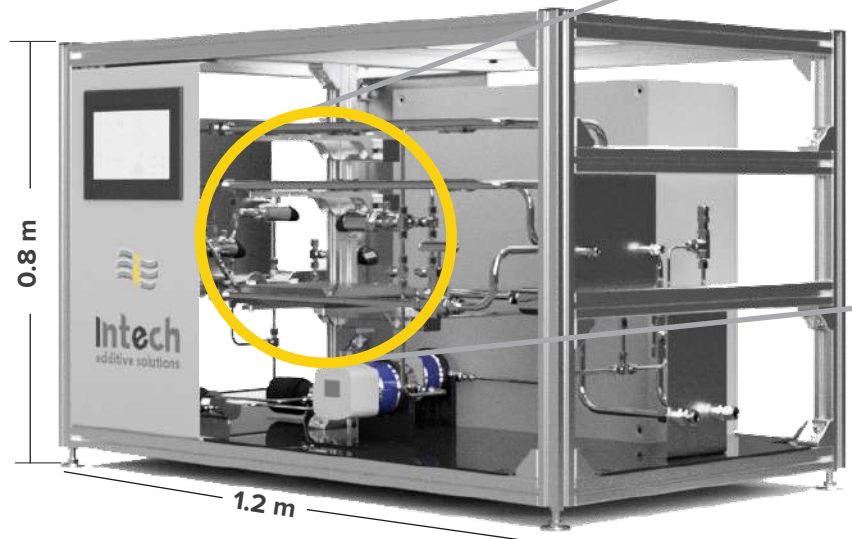
- ▶ High Capital and Operating Expense
- ▶ High Energy Consumption
- ▶ Low Yield with Large Footprint
- ▶ Safety Concerns
- ▶ Longer Reaction Times
- ▶ Labour-intensive
- ▶ Inconsistent (batch to batch variation)
- ▶ Inefficient Heat and Mass Transfer

**Vs**

# INNOVATIVE FLOW REACTOR SYSTEM\*

## BENEFITS

- ▶ Low Capital and Operating Expense
- ▶ Significantly Lower Energy Consumption
- ▶ High Yield with Smaller Footprint
- ▶ Safe
- ▶ Shorter Reaction Times
- ▶ Ease of Use with Less Manpower
- ▶ Consistency
- ▶ Efficient Heat and Mass Transfer



## PLUG 'N' PLAY SYSTEM With 3D Printed Flow Reactor

\*4 Innovative patents pending

## ADDITIONAL BENEFITS



Easy And Safe Handling



In-built Dosing Modules



Production In Kg/h Scale



Short Turnaround Time

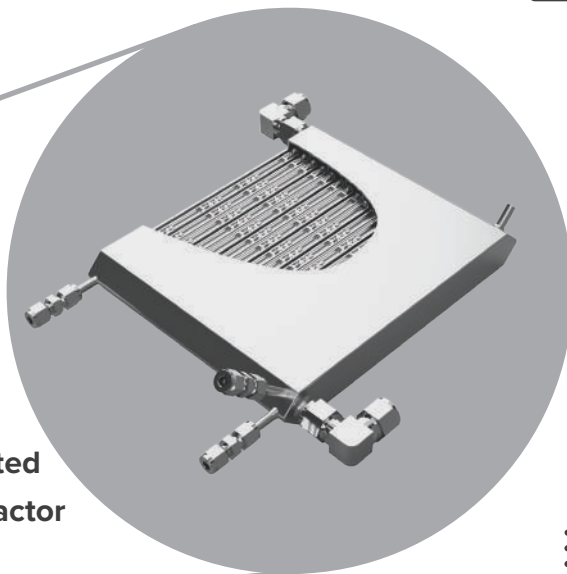


Real-time Monitoring



Efficient Heat And Mass Transfer

## INNOVATIVE DESIGN SOLUTION FOR PROCESS INTENSIFICATION AND CUSTOMIZATION



3D Printed Flow Reactor



Fast-Exothermic Reaction



Liquid-Liquid Reactions



High Throughput



Gas-Liquid Reactions



Flexible Operation



Customized Static Mixer Designs



Significant reduction in size compared to conventional models



Integrated heat exchanger for higher efficiency



Unique design freedom

## CUSTOM SOLUTIONS

- ▶ Volume and MoC
- ▶ Multi-step Reactions
- ▶ Thermal Management
- ▶ Assembly and Integration
- ▶ Process Analytical Technology
- ▶ In-line quenching and extraction
- ▶ Reaction-specific Design
- ▶ Multi-injections, Thermowells

## TECHNICAL SPECIFICATIONS

	ON DISPLAY	CUSTOMIZABLE OPTIONS
<b>Volume</b>	200 ml	5ml to 4000 ml
<b>Temperature</b>	15°C to 80°C	-50 to 200°C
<b>Pressure</b>	0 to 10 bar	Upto 35 bar
<b>Throughput</b>	6 to 60 L/h	30 to 360 L/h
<b>Flow Rate</b>	100 to 1000 ml/min	500 to 6000 ml/min
<b>Materials</b>	SS 316L	Hastelloy C22 Monel 400, Inconel

## INTECH ADVANTAGE

Innovation Driven  
Sustainable Solutions

Strategic Investments  
In R&D

Customer-centric, Value  
Based Approach

OEM Capability Providing  
Complete Eco-system

Customizable to perform liquid-liquid, gas-liquid and heterogeneous catalytic reactions while maintaining high yield.

Expertise to design intricate elements in flow reactor for better process control and thermal management.

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