

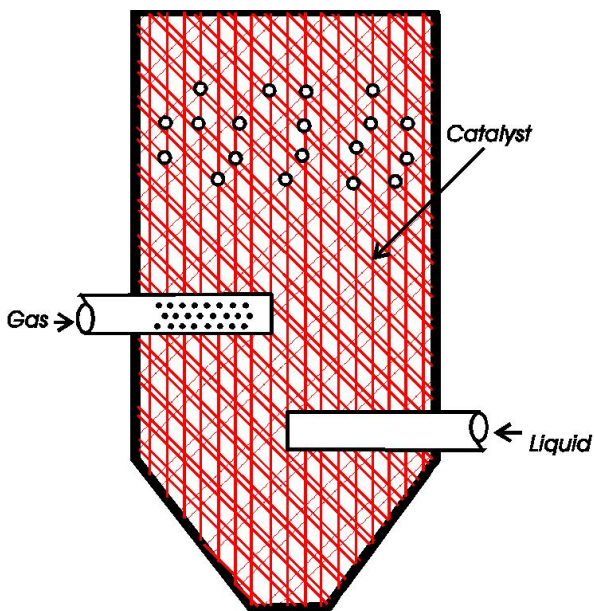


Process Intensification Case Studies

Case 1: Fixed Bed Catalytic Reactor

Benefits

- 37% increase in yield – savings £1/2m per annum
- Improved reactor control – no polymer fouling



Before Design Study

Problem

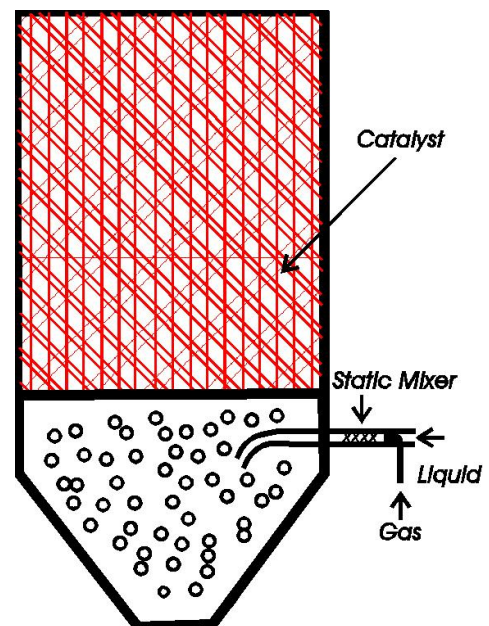
- Poor reaction stability.
- Exothermic gas/liquid reaction.
- Contaminated catalyst in fixed bed catalytic reactor

Solution

Retrofit design of reactor, produced in four days.

Features

- Pre-mix gas/liquid to achieve saturation
- Raised catalyst bed to provide an even reaction front
- Jet mixing in bottom of column
- Total retrofit cost of £20,000



After Design Modification

Case 2: Polymerisation

Benefits

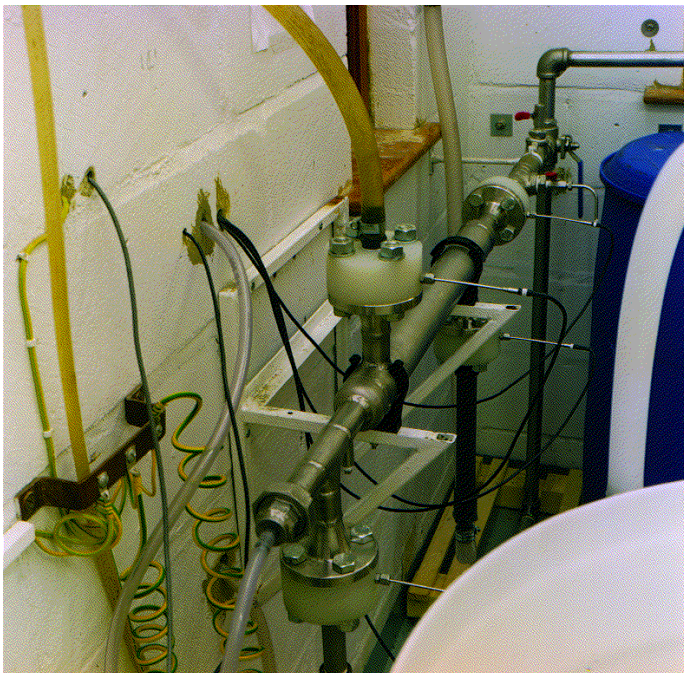
- CAPEX reduction from \$6m to \$1m
- OPEX reduced by using less pure feedstock

Problem

Scale-up of an exothermic polymerisation reaction was needed to meet market demand for the product. A conventional approach would have required a 60m³ reactor.

Solution

BHRGroups' engineers recognised that the fast reaction was mixing limited and recommended a radical change to the client's scale-up route.



The conventional batch vessel was replaced by a continuous static mixer based reactor.

In partnership with the client, BHR Group assisted with the initial design of the pilot plant

Contact us for more information or visit our website.

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