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Advances in Process Intensification

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Editorial

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INTRODUCTION

Process intensification (PI) in chemical engineering aims to make industrial processes more efficient, sustainable, and cost-effective. It includes the design of equipment and methodologies that improve energy efficiency, reduce environmental impacts, and increase safety.

Key Research Areas

Microreactors: Enable fast reactions with high surface-to-volume ratios [1].

Reactive Distillation: Integrates reaction and separation to save energy [2].

Membrane Reactors: Couple chemical reaction with selective separation [3].

Intensified Heat Exchangers: Compact designs improve energy recovery [4].

Supercritical Fluid Processing: Provides greener solvents and improved yields [5].

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