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Identification of Research Trends in Chemical Process Design: A Review

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Abstract : The purpose of the study is to identify the research trends or developments in the chemical process design based on the analysis of a literature review for the period 1980-2015. The research problems or limitations or gaps in process design are the key sources for the research developments or research trends to the present world. In this study, we have identified and reported the research trends or developments in the chemical process design. Some of the research developments or trends are: 1) *Mitigation of environmental hazards by calculating the environmental potential impacts WAR (Waste Reduction Algorithm) techniques*, 2) *Effectively control of process hazards such as higher temperatures and higher pressures by using ASPEN DYNAMICS simulators*, 3) *Waste heat recovery using process integration with pinch technology* and 4) *Zero waste discharge or at least minimise the waste hazards by using WAR with process modification*. This study will be an attractive and useful for researchers in field of chemical process design to save their research time to investigate the research developments for further work.

Keywords: Process Simulation, process design, environmental pollution control, ASPEN PLUS, WAR, process integration, process intensification, research trends.

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