

Systematic evaluation of reactivity hazards for organic peroxides and its application for process industries

Organic peroxides can thermally decompose and may lead to runaway reactions. These reactivity hazards have been reported as one of the main causes for fire and explosion in process industries. This research aims at developing a systematic hazard evaluation methodology for organic peroxides, which can assist the implementation of Inherently Safer Design (ISD) technology in the process industries to design inherently safer processes.

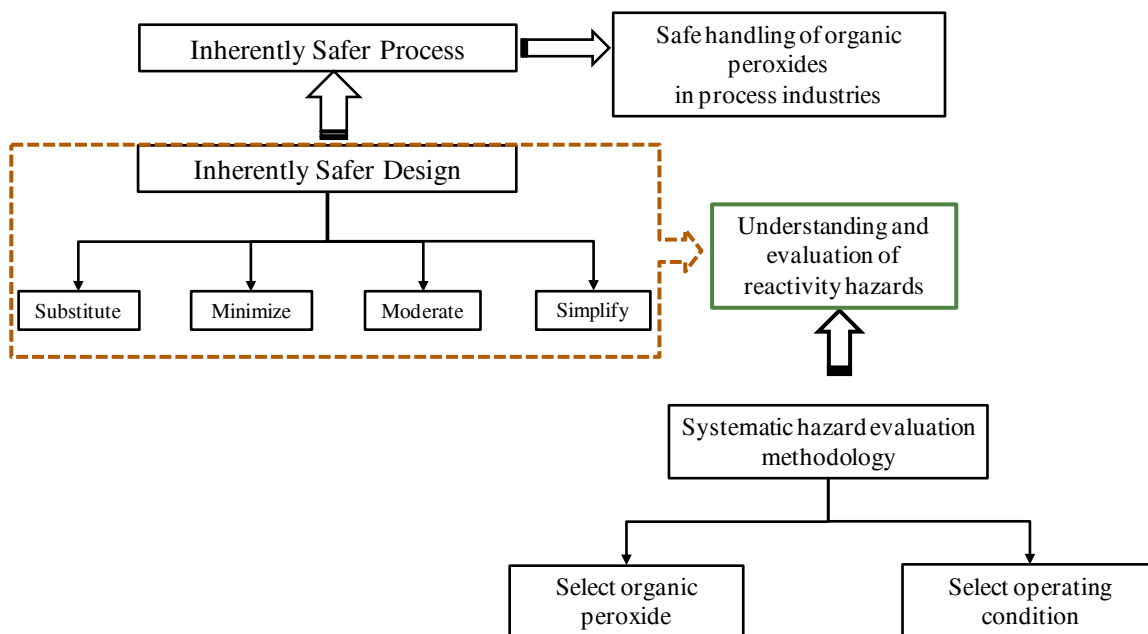


Figure 1. Motivation and objective of this research

This methodology is composed of quick prediction of reactivity hazards using QSPR approach, which is used to select safer chemical, and the investigation on the effects of operation conditions on reactive hazards, which is used to determine the safer operation condition. The methodology can be applied in process industry in conjunction with ISD technology to design inherently processes with minimized risk.