

## RESEARCH NOTES

考虑环境影响最小化的反应过程的开发

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**摘要** A methodology is presented to identify environmental impact minimization alternatives for reaction processes and assess their environmental performance. The potential environmental impact (PEI) scheme can be used to visibly display the transformation relationships among different types of PEI, identify the sources of environmental impacts, and propose alternatives for eliminating or minimizing the impacts. To evaluate the environmental performance of the alternatives effectively, some new indices, such as PEI input rate of non-products, PEI output rate of non-products per profit and the PEI conversion efficiency are proposed. Finally, the application of the methodology is illustrated using an industrial case study.

**关键词** [potential environmental impact scheme](#) [development of chemical process](#) [environmental protection](#)

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### Development of Reaction Process with the Consideration of Environmental Impact Minimization

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**Abstract** A methodology is presented to identify environmental impact minimization alternatives for reaction processes and assess their environmental performance. The potential environmental impact (PEI) scheme can be used to visibly display the transformation relationships among different types of PEI, identify the sources of environmental impacts, and propose alternatives for eliminating or minimizing the impacts. To evaluate the environmental performance of the alternatives effectively, some new indices, such as PEI input rate of non-products, PEI output rate of non-products per profit and the PEI conversion efficiency are proposed. Finally, the application of the methodology is illustrated using an industrial case study.

**Key words** [potential environmental impact scheme](#); [development of chemical process](#); [environmental protection](#)

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