

过程系统工程

## 大型聚乙烯工业装置质量指标的次优强跟踪滤波估计

赵众, 马博

北京化工大学自动化研究所

收稿日期 2008-4-15 修回日期 2008-4-29 网络版发布日期 2008-7-15 接受日期

摘要

针对大型聚乙烯工业装置质量指标实时估计的复杂性, 基于乙烯聚合原理推导了大型聚乙烯工业装置质量指标实时预测模型, 提出了一种次优强跟踪滤波器设计方法用于根据实验室分析数据反馈修正模型预测并实时估计质量指标。所提方法在大型聚乙烯工业装置上的应用结果证实了其有效性和可行性, 为实现大型聚乙烯工业装置先进控制奠定了基础。

关键词

[聚乙烯](#) [质量指标](#) [状态估计](#) [模型预测误差上限](#) [次优强跟踪滤波器](#)

分类号

## Resin quality estimation for industrial polyethylene process based on suboptimal strong tracking filter

ZHAO Zhong, MA Bo

### Abstract

Due to the lack of on-line analyzer, resin quality such as melt index and density can not be on-line measured and controlled in the industrial polyethylene process. In this paper, a predictive model of resin quality was deduced for industrial polyethylene process based on the kinetics of ethylene polymerization. According to the approximation error upper bound of the deduced predictive model, based on the multiple fading extended Kalman filter a method of design the suboptimal strong tracking filter was proposed to update the estimation of resin quality based on the off-line lab analytical data. The application of the proposed method to an industrial Unipol licensed linear low-density polyethylene process verified its feasibility and effectiveness. With the proposed method, resin quality of industrial polyethylene process can be on-line estimated and on-line resin quality advanced control can be achieved.

### Key words

[polyethylene](#) [resin quality](#) [state estimation](#) [model approximation error upper bound](#) [suboptimal strong tracking filter](#)

DOI:

通讯作者 赵众 [zhaozhong@mail.buct.edu.cn](mailto:zhaozhong@mail.buct.edu.cn)

### 扩展功能

#### 本文信息

▶ [Supporting info](#)

▶ [PDF\(1049KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

#### 服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

#### 相关信息

▶ [本刊中 包含“](#)

[聚乙烯” 的相关文章](#)

▶ [本文作者相关文章](#)

· [赵众](#)

· [马博](#)