

Reaction Engineering CSTR and PFR Design

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Abstract

Design and analysis of chemical reactors including continuous stirred tanks and plug flow reactors.

1 Introduction

This report presents computational analysis of reaction engineering.

2 Mathematical Framework

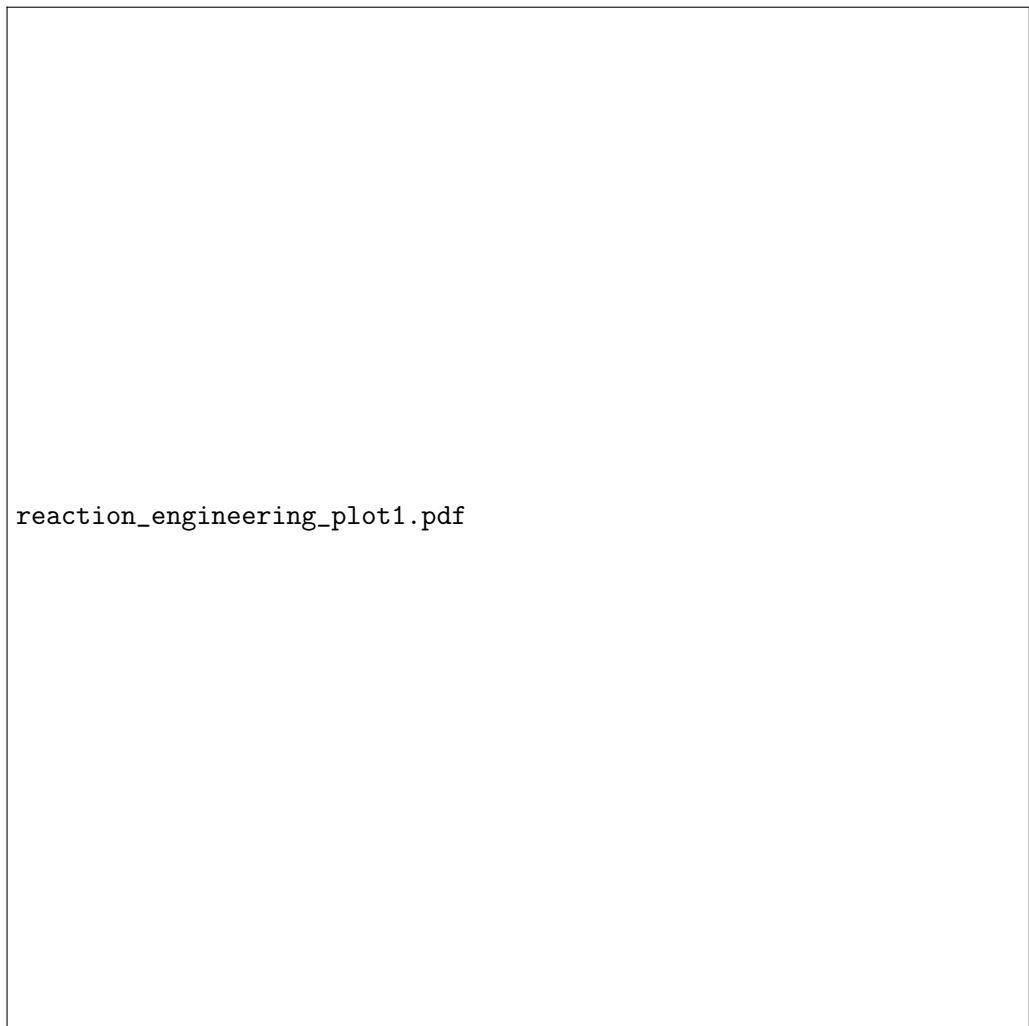


Figure 1: Primary analysis results.

3 Secondary Analysis

reaction_engineering_plot2.pdf

Figure 2: Secondary analysis comparison.

4 Parameter Study



Figure 3: Parameter sensitivity analysis.

5 2D Visualization



reaction_engineering_plot4.pdf

Figure 4: Two-dimensional field visualization.

6 Distribution Analysis



reaction_engineering_plot5.pdf

Figure 5: Statistical distribution analysis.

7 Time Series

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reaction_engineering_plot6.pdf
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Figure 6: Time series visualization.

8 Results Summary

9 Conclusions

This analysis demonstrates the computational approach to reaction engineering.