

Contents

Preface — V

List of contributing authors — IX

Mirko Skiborowski, Daniel Sudhoff

1 Introduction to process intensification and synthesis methods — 1

Mirko Skiborowski, Andrzej Górak

2 Hybrid separation processes — 49

Moreno Ascani, Christoph Held

3 Thermodynamics for reactive separations — 127

Eugeny Y. Kenig

4 Modeling concepts for reactive separations — 205

Anton A. Kiss

5 Reactive distillation — 265

Anna-Katharina Kunze

6 Reactive absorption — 323

Robin Schulz, Thomas Waluga

7 Reactive extraction — 363

Stefan Schlüter, Patrick Franke

8 OSN-assisted reaction and separation processes — 397

Johannes Holtbrügge, Jerzy R. Pela

9 Pervaporation and vapor permeation–assisted reactive separation processes — 473

Index — 567