

Contents

Preface — V

Acknowledgments — VII

About the editors — XI

Contributing authors — XIII

Gabriele Laudadio and Timothy Noël

1 Photochemical transformations in continuous-flow reactors — 1

Martin Linden, Maximilian M. Hielscher, Balázs Endrődi, Csaba Janáky and Siegfried R. Waldvogel

2 Electrochemical processes in flow — 31

D. V. Ravi Kumar, Suneha Patil and Amol A. Kulkarni

3 Continuous flow methods for synthesis of functional materials — 69

Tanja Junkers

4 Polymer synthesis in continuous flow — 99

Genovéva Filipcsei, Zsolt Ötvös, Réka Angi, Balázs Buchholcz, Ádám Bódis and Ferenc Darvas

5 Flow chemistry for nanotechnology — 135

Francesco Ferlin, Nam Nghiep Tran, Aikaterini Anastasopoulou, Marc Escribà Gelonch, Daniela Lanari, Federica Valentini, Volker Hessel and Luigi Vaccaro

6 From green chemistry principles to sustainable flow chemistry — 159

Antonio M. Rodríguez, Iván Torres-Moya, Angel Díaz-Ortiz, Antonio de la Hoz and Jesús Alcázar

7 Flow chemistry in fine chemical production — 193

Kai Wang, Jian Deng, Chencan Du and Guangsheng Luo

8 Scale-up of flow chemistry system — 229

Sara Miralles-Comins, Elena Alvarez, Pedro Lozano and Victor Sans

**9 Exothermic advanced manufacturing techniques in reactor engineering:
3D printing applications in flow chemistry — 259**

Francesca Paradisi and László Poppe

10 Continuous-flow biocatalysis with enzymes and cells — 277

Steven V. Ley, Oliver S. May, Oliver M. Griffiths and Karin Sowa

11 Outlook, future directions, and emerging applications — 313

Answers to the study questions — 347

Index — 359