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Altri autori (Persone)	TamimeA. Y
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Nota di contenuto	Cover; Title Page; Copyright Page; Contents; Preface to the Technical Series; Preface; Contributors; Chapter 1 Development of Membrane Processes; 1.1 Historical background; 1.2 Basic principles of membrane separations; 1.2.1 Depth versus screen filters; 1.2.2 Isotropic versus anisotropic membranes; 1.2.3 Cross-flow filtration; 1.2.4 Requirements of membrane processes; 1.3 Types of membrane separations; 1.3.1 Reverse osmosis; 1.3.2 Nanofiltration; 1.3.3 Ultrafiltration; 1.3.4 Microfiltration; 1.4 Theory of membrane transport; 1.4.1 Transport models 1.4.2 Reverse osmosis/nanofiltration membranes1.4.3 Ultrafiltration/microfiltration membranes; 1.5 Factors affecting membrane separations; 1.5.1 Factors affecting reverse osmosis/nanofiltration separations; 1.5.2 Factors affecting

ultrafiltration/microfiltration separations; 1.5.3 System parameters; 1.6 General characteristics of membrane processes; 1.6.1 Retention and rejection; 1.6.2 Pore size; 1.6.3 Molecular weight cut-off; 1.6.4 Flux; 1.6.5 Concentration factor; 1.6.6 Membrane life; 1.7 Conclusion and future development; Suggested literature; Chapter 2 Principles of Membrane Filtration
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2.5.2 Single-pass versus feed-and-bleed operation2.6 Recent membrane processes following different operating principles; 2.6.1 Forward osmosis; 2.6.2 Osmotic distillation; 2.6.3 Membrane distillation; 2.7 Conclusions; References; Chapter 3 Commercial Membrane Technology; 3.1 Introduction: polymers used in membrane manufacture; 3.1.1 Cellulose acetate; 3.1.2 Polysulphone/polyethersulphone; 3.1.3 Polyamide; 3.1.4 Polyvinylidene fluoride; 3.1.5 Thin-film composites; 3.2 Other materials used for membranes; 3.2.1 Ceramic membranes; 3.2.2 Metallic membranes; 3.3 Membrane configuration
3.3.1 Spiral-wound3.3.2 Tubular; 3.3.3 Hollow fibre; 3.3.4 Plate and frame; 3.4 Modes of operation; 3.4.1 Diafiltration; 3.4.2 Batch design; 3.4.3 Continuous design; 3.5 Conclusion and future developments; Suggested literature; Chapter 4 Membrane Fouling, Cleaning and Disinfection; 4.1 Introduction; 4.2 Flux reduction; 4.2.1 Membrane resistance; 4.2.2 Concentration polarisation; 4.2.3 Fouling; 4.2.4 Fouling in the beverage industry; 4.2.5 Fouling in the dairy industry; 4.3 Membrane cleaning and disinfection; 4.3.1 Cleaning methods; 4.3.2 Chemical cleaning factors; 4.3.3 Disinfection
4.3.4 Cleaning procedures

Sommario/riassunto

This book extensively reviews the dairy, beverage and distilled spirits applications of membrane processing techniques. The four main techniques of membrane filtration are covered: microfiltration, ultrafiltration, nanofiltration and reverse osmosis. The book is divided into four informal sections. The first part provides an overview of membrane technology, including the main scientific principles; the major membrane types and their construction; cleaning and disinfection; and historical development. The second part focuses on dairy applications including liquid and fermented milks; c