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4.3.1 What are the impurities in water?; 4.3.2 Phosphorus removal: an example; References; 5 Adjustment of pH; 5.1 Introduction; 5.2 Definitions; 5.3 Problems with low pH; 5.4 pH of different water sources; 5.5 pH adjustment; 5.6 Examples of methods for pH adjustment; 5.6.1 Lime; 5.6.2 Sea water; 5.6.3 Lye or hydroxides; References; 6 Removal of Particles: Traditional Methods; 6.1 Introduction
6.2 Characterization of the water6.3 Methods for particle removal in fish farming; 6.3.1 Mechanical filters and microscreens; 6.3.2 Depth filtration: granular medium filters; 6.3.3 Settling or gravity filters; 6.3.4 Integrated treatment systems; 6.4 Hydraulic loads on filter units; 6.5 Purification efficiency; 6.6 Dual drain tank; 6.7 Local ecological solutions; References; 7 Protein Skimming, Flotation, Coagulation and Flocculation; 7.1 Introduction; 7.1.1 Surface tension, cohesion and adhesion; 7.1.2 Surfactants; 7.2 Mechanisms for attachment and removal
7.2.1 Attachment of particles to rising bubbles by collision, typically in flotation7.2.2 Improving colloid and particle removal rates: pretreatment; 7.2.3 Attachment of surface-active substances, typically in protein skimmers; 7.2.4 Particle attachment by nucleation; 7.3 Bubbles; 7.3.1 What is a gas bubble?; 7.3.2 Methods for bubble generation; 7.3.3 Bubble size; 7.3.4 Bubble coalescence; 7.4 Foam; 7.4.1 What is foam?; 7.4.2 Foam stability; 7.4.3 Foam breakers; 7.5 Introduction of bubbles affects the gas concentration in the water; 7.6 Use of bubble columns in aquaculture
7.7 Performance of protein skimmers and flotation plants in aquaculture

Sommario/riassunto

"As aquaculture continues to grow at a rapid pace, understanding the engineering behind aquatic production facilities is of increasing importance for all those working in the industry. Aquaculture engineering requires knowledge of the many general aspects of engineering such as material technology, building design and construction, mechanical engineering, and environmental engineering. In comprehensive book now in its second edition, author Odd-Ivar Lekang introduces these principles and demonstrates how such technical knowledge can be applied to aquaculture systems"--