Water is the lifeblood of the environment, essential to the survival of all living things and everything must be done to maintain its quality for today and the future. Water quality is a characteristic of water, usually in respect to its suitability for a particular purpose. Acceptable values for each of these parameters depend on the use, not on the source of the water and hence the quality of the water determines its uses. Each designated use has a unique set of water quality requirements. Therefore water fit for one use may be unfit for another. Scientists are interested in specific aspects of water quality. From a technical point of view, quality is determined by the kinds and amounts of substances dissolved and suspended in the water and what those substances do to inhabitants of the ecosystem. Years ago, in fact, all the way back to the beginning of the earth, nature was using natural polymers to make life possible. In this book it is discussed about development of a grafted starch based biodegradable polymer flocculant to gain both the advantage of natural as well as synthetic polymer, for the industrial waste water, which can make our environment clean.