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Advanced Materials and Technologies for Wastewater Treatment

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2 Qualitative and Quantitative Analysis of Water

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2.1 INTRODUCTION

Historically, treatment of water for drinking dates back nearly 4000 years according to inscriptions on ancient Egyptian tombs. Entire civilizations thrived near mighty rivers like Nile and Sindh. As the water was being used for everything from drinking and cleaning to irrigation and transportation, it became contaminated and polluted. People realized the necessity of clean drinking water. The London Metropolitan Water Act of 1852 made water-quality maintenance mandatory. The Federal Water Pollution Control Act of 1948 in the United States emphasized the importance of water quality and health. When we are searching for extraterrestrial life, we look for the signature of water on other planets, because it is vital for life and organic life does not exist.

Pure water, with a chemical formula of H_2O, is a colorless, odorless, and tasteless liquid. It has wonderful physical and chemical properties. It exists in all three phases in the normal temperature range on Earth, having a melting point of 0°C and boiling point of 100°C. It shows anomalous expansion (solid water expands and