ABSTRACT

**Leakage in water-supply networks leads to significant water loss, higher costs, and reduced efficiency. Detecting and controlling leaks is vital for sustainable water distribution systems. Techniques such as acoustic sensing, pressure and flow monitoring, and Internet of Things (IoT)-based systems are commonly used to identify leakages. Control measures such as pressure management, automatic shut-off valves, and timely pipeline maintenance help reduce non-revenue water (NRW). With advancements in Artificial Intelligence (AI) and data analytics, leak detection has become faster and more accurate, ensuring a reliable supply and supporting sustainable water management.**