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IoT-Based Underground Pipe Damage and Leakage Detection

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Abstract: *This paper presents a novel concept for detecting damage and leaks in underground pipes utilizing IoT technology. Utilizing piezoelectric sensors to detect pressure fluctuations and structural damage, alongside moisture sensors to identify leaks, and gas sensors to pinpoint gas leaks, our system ensures thorough monitoring of subterranean infrastructure. Integration of these sensors with an Arduino micro controller enables real-time data collection and analysis. Through the use of jumper wires, seamless connectivity between sensors and the Arduino board is established. In the event of an anomaly, such as a leak or damage, an audible alarm notifies operators, facilitating swift response. This IoT-driven approach enhances the effectiveness and dependability of underground pipe surveillance, providing a cost-efficient means for infrastructure upkeep and risk management.*

Keywords: Arduino

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