



Sensors and IoT Systems for Environmental Monitoring in Liberian Mining Sites

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Abstract

Mining activities in Liberia have led to significant environmental degradation, necessitating effective monitoring systems. A systematic approach was employed to design, test, and integrate sensor networks with IoT platforms. Data from these systems were analysed using statistical models to assess pollution levels and predict trends. The deployment of sensors detected a CO_2 concentration increase by up to 10% in the vicinity of mining operations compared to pre-mining conditions, highlighting the need for mitigation strategies. Effective environmental monitoring is pivotal for sustainable mining practices. The developed systems provide actionable insights and can guide policy interventions. Continue research into advanced sensor technologies and expand deployment to other mining sites in Liberia. Environmental Monitoring, Sensors, IoT Systems, Mining Sites, Liberia

Keywords: African, GIS, IoT, Sensor, Smart, Sustainability, Wireless

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