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(57) Abstract :
The present invention discloses an IoT-based system for smart bridge structure health monitoring comprising sensor nodes (101), data acquisition unit (102), wireless communication module (103), cloud data processing unit (104), bridge health analytics dashboard (105), and alert system (106). The system continuously monitors structural parameters such as strain and vibration, transmits data wirelessly to the cloud, and performs real-time analytics for damage detection and preventive maintenance. It ensures enhanced safety, reliability, and cost efficiency in bridge management operations.

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