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(57) Abstract :
The invention discloses an AI-based chemical reagent identifier (14) with a QR-enabled inventory (10) and hazard alert system (12). The system integrates an AI camera module (16), cloud-based database (18), and mobile application (20) to identify chemicals, track inventory, and generate real-time hazard alerts. IoT sensors (22) monitor storage conditions and detect leaks. The QR-enabled tracking ensures precise inventory updates, while predictive analytics optimize procurement and usage cycles. The invention enhances laboratory safety, reduces human error, and improves operational efficiency through automated chemical management and hazard detection.

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