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(57) Abstract :

The invention discloses a smart titration apparatus (10) featuring automatic endpoint detection and data logging. It incorporates sensors (12) including a pH sensor (20) and optical sensor (22), controlled by a microcontroller (14) that regulates a dispensing mechanism (18) via stepper motor (26). A digital interface (16) enables real-time data display and storage, while connectivity through Wi-Fi module (24) ensures seamless data transfer. The apparatus (10) enhances titration accuracy, reduces reagent wastage, and simplifies laboratory data management.

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