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(57) Abstract :

A smart electromagnetic induction demonstrator includes a microcontroller unit (101), Hall effect sensor (102), coil (103), magnet assembly (104), display unit (105), and data logger (106). The invention visualizes induced voltage and magnetic flux in real-time, supporting interactive learning. It provides waveform graphs, modular coil swapping, wireless communication, and safety features like LED alerts. The demonstrator improves conceptual understanding of Faraday's and Lenz's laws in laboratory environments through dynamic, sensor-integrated feedback.

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