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(57) Abstract :
The invention “An Automated Device for Dynamic Balancing of Rotating Turbine Blades” comprises vibration sensors (1), a signal conditioning unit (2), a control unit (3), and a balancing actuator (4) integrated with the rotor assembly (5). The device detects imbalance during turbine operation, analyzes vibration signals in real time, and commands corrective actions through actuators. It operates in a closed loop, ensuring continuous balance, reducing vibration-induced failures, extending component life, and enabling predictive maintenance. The invention improves efficiency, safety, and reliability in industrial and aerospace turbine systems.

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