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(57) Abstract :
The present invention relates to a device for monitoring stress distribution in metallic springs (102). The device comprises strain gauges (101) strategically attached along spring coils, connected to a signal conditioning unit (103), and a microcontroller-based data acquisition system (104). The processed signals are transmitted through a wireless module (105) to analytical software (106), generating real-time stress distribution graphs and fatigue predictions. The invention offers compactness, high accuracy, and IoT compatibility, making it suitable for predictive maintenance in automotive, aerospace, and industrial spring applications.

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