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(57) Abstract :
The invention discloses an energy-efficient device for real-time vehicle tire pressure balancing. The system comprises pressure sensors (101), a microcontroller unit (102), a pneumatic equalization module (103), solenoid valves (104), and an auxiliary air reservoir (105). It continuously monitors tire pressures and redistributes air among tires to ensure uniform inflation. The device integrates with a dashboard interface (106) for driver awareness while operating autonomously with adaptive energy-saving algorithms. This invention improves safety, fuel efficiency, tire life, and overall vehicle sustainability.

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