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(57) Abstract :
The present disclosure introduces an ergonomic health tech chair 100 that enhances user well-being and productivity through integrated health and posture support. The chair incorporates force sensing resistor (fsr) sensors 102 to monitor weight distribution, and an inertial measurement unit (imu) 104 to assess orientation and movement, allowing accurate posture tracking. An arduino nano microcontroller 106 processes data from the sensors, activating led indicators 108 to provide visual feedback, with green indicating correct posture and red indicating incorrect posture. For relaxation, neck acupressure nodes 110 deliver targeted pressure to relieve stress. Additionally, a photoplethysmography (ppg) sensor 112 is embedded in the armrest, measuring heart rate and blood pressure, while the led display for health monitoring 114 shows real-time health metrics, enabling continuous cardiovascular awareness. A battery power supply 116 ensures uninterrupted functionality, supporting all components for a comprehensive health-focused seating system ideal for office environments. Reference Fig 1

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