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Air Quality Monitoring for Pervasive Health



Figure 1: The stackable 25mm sensing layer.

Exposure to a range of gases over a long period of time can give rise to health problems. Identifying situations where such exposure has been a contributory factor to ill-health is almost impossible. To address this issue, a novel sensor board has been developed. It is envisaged that this board will be integrated into sensor networks in both home and work environments.

Sensors for Carbon Monoxide (CO) and Volatile Organic Compounds (VOCs) are mounted on the board. CO is one of the most common forms of poisoning death. Older adults are vulnerable to accidental poisoning due to a prevalence of underlying medical conditions but CO can cause flu-like symptoms in otherwise healthy people. VOCs are emitted from a wide variety of products frequently found in home and work environments. Such gases may linger long after the activity that generated them has finished. Prolonged exposure can give rise to a range of symptoms, and may cause cancer.

A stackable 25mm Bluetooth sensing layer, based on the Tyndall 25mm mote was implemented. Both sensors are hosted on a IEEE802.15.14 radio platform. A standard Bluetooth 2.0/EDR Module was interfaced to the mote micro-controller using a serial UART interface. Integration with conventional WSNs is achieved via Bluetooth and/or Zigbee.

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