Noninvasive Detection of Alcohol Consumption Level in Drivers

Materials & Methods

- 2 ½ inch PVC pipe
- Arduino Nano
- 3 LEDs
- 2 MQ-3 Alcohol sensors
- Soldering Iron and other soldering materials
- Rechargable 5V battery
- Standard wiring

Results

- First Prototype
- Functions as intended:
  - Can detect alcohol in the air within several inches
  - Provides a clear indication to the level of alcohol in the air
  - Portable
  - Light Weight
- Though functional, this device has room for improvements

Conclusion

Though this device is functional, and works as well as expected for a first prototype, there are some flaws in the design and functionality.

- 15 minute warm up time
- Inconsistencies in performance depending on power source
- Lacks measurement recording
- Does not have any external conrols fro power.

Design Prototype

Future Modifications

Changes To Be Made:

- Add Power switch/button
- add means of bypassing Warm Up time for when a user shuts off the device, but the sensors remain at the propper temperature
- Change layout to only one sensor, msot times the second one is never used
- Add means of data collection. Most likely will be bluetooth or an on board memory card
- upgrade to higher quality materials
- Adjust sensitivity of the sensor
- provide a clearer representation fo the device's readings

Contact Information

References

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