

# Air quality sensitive T-shirts

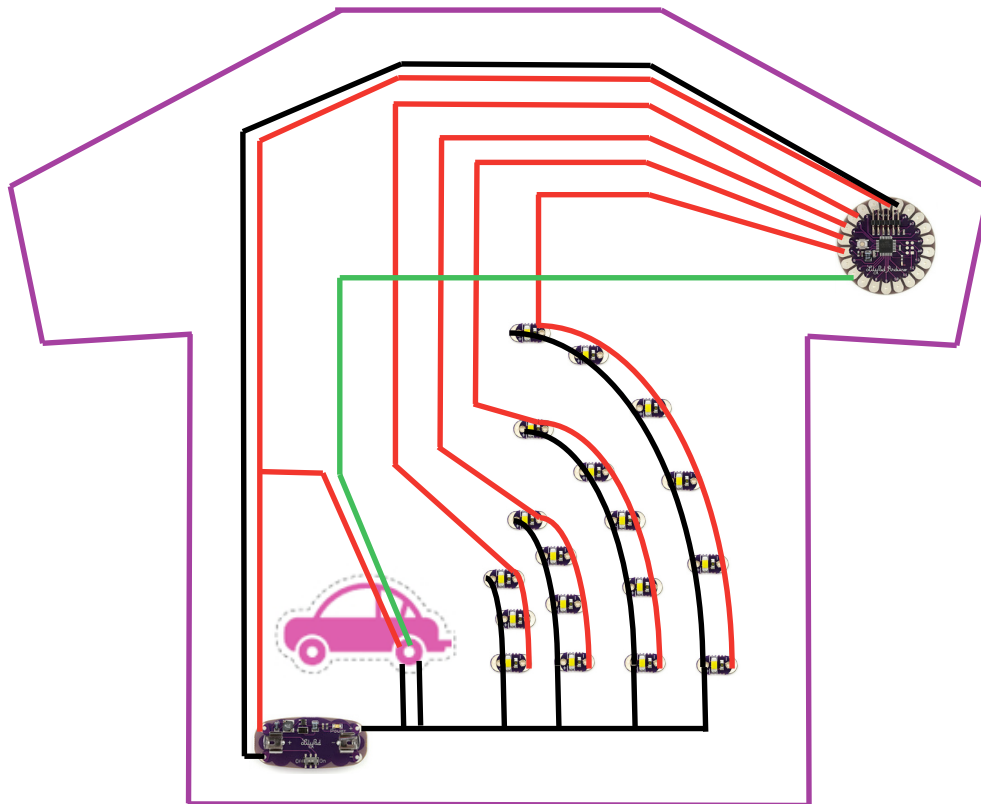
Sunyoung Kim

This T-shirt is air quality- sensitive: different level of air quality changes LEDs' blinking speed. An air quality sensor detects the level of air quality, and arduino processes and controls the blinking speed.

## Parts

- Conductive Thread
  - Black T-shirt
  - Felts
  - Figaro TG2620 VOCs sensor (1)
  - Lilypad (1)
  - LEDs (19)
  - Lilypad battery holder (3)
- \* Each battery holder clips an AAA battery (1.5V), and TG2620 VOCs sensor requires 5V to heat it up. Thus, 3 battery holders were used.

## Circuit



## Arduino code

```
int gasPin = 2;
int val = 0;
int led = 8;

int leds[] = {13,12,11,10,9};
int ledNum = 5;

int thres = 400;
int spd = 0;

void setup(){
  Serial.begin(9600);
  for(int i = 0;i<ledNum;i++){
    pinMode(leds[i], OUTPUT);
  }
  pinMode(led, OUTPUT);
  digitalWrite(led, LOW);
}

void loop(){
  val = analogRead(gasPin);
  spd = 2*(thres - val);
  Serial.println(val);

  if(spd<=50) spd = 0;
  else if(spd>700) spd = 700;

  lights();}

void lights(){
  for(int i=0;i<ledNum;i++){
    digitalWrite(leds[i], HIGH);
    delay(spd);
    digitalWrite(leds[i], LOW);
  }
}
```