|  |  |  |
| --- | --- | --- |
|  |  | #include <Wire.h> |
|  |  | #include <LiquidCrystal\_I2C.h> //https://github.com/fdebrabander/Arduino-LiquidCrystal-I2C-library |
|  |  | LiquidCrystal\_I2C lcd(0x27, 16, 2); |
|  |  |  |
|  |  | int sensorPin = A0; |
|  |  | float volt; |
|  |  | float ntu; |
|  |  |  |
|  |  | void setup() |
|  |  | { |
|  |  | Serial.begin(9600); |
|  |  | lcd.begin(); |
|  |  | lcd.backlight(); |
|  |  | } |
|  |  |  |
|  |  | void loop() |
|  |  | { |
|  |  |  |
|  |  | volt = 0; |
|  |  | for(int i=0; i<800; i++) |
|  |  | { |
|  |  | volt += ((float)analogRead(sensorPin)/1023)\*5; |
|  |  | } |
|  |  | volt = volt/800; |
|  |  | volt = round\_to\_dp(volt,2); |
|  |  | if(volt < 2.5){ |
|  |  | ntu = 3000; |
|  |  | }else{ |
|  |  | ntu = -1120.4\*square(volt)+5742.3\*volt-4353.8; |
|  |  | } |
|  |  | lcd.clear(); |
|  |  | lcd.setCursor(0,0); |
|  |  | lcd.print(volt); |
|  |  | lcd.print(" V"); |
|  |  |  |
|  |  | lcd.setCursor(0,1); |
|  |  | lcd.print(ntu); |
|  |  | lcd.print(" NTU"); |
|  |  | delay(10); |
|  |  | } |
|  |  |  |
|  |  | float round\_to\_dp( float in\_value, int decimal\_place ) |
|  |  | { |
|  |  | float multiplier = powf( 10.0f, decimal\_place ); |
|  |  | in\_value = roundf( in\_value \* multiplier ) / multiplier; |
|  |  | return in\_value; |
|  |  | } |