double Fahrenheit(double celsius)

{

return 1.8 \* celsius + 32;

} //ÉãÊÏÎÂ¶È¶È×ª»¯Îª»ªÊÏÎÂ¶È

double Kelvin(double celsius)

{

return celsius + 273.15;

} //ÉãÊÏÎÂ¶È×ª»¯Îª¿ªÊÏÎÂ¶È

// Â¶µã£¨µãÔÚ´ËÎÂ¶ÈÊ±£¬¿ÕÆø±¥ºÍ²¢²úÉúÂ¶Öé£©

// ²Î¿¼: [url=http://wahiduddin.net/calc/density\_algorithms.htm]http://wahiduddin.net/calc/density\_algorithms.htm[/url]

double dewPoint(double celsius, double humidity)

{

double A0= 373.15/(273.15 + celsius);

double SUM = -7.90298 \* (A0-1);

SUM += 5.02808 \* log10(A0);

SUM += -1.3816e-7 \* (pow(10, (11.344\*(1-1/A0)))-1) ;

SUM += 8.1328e-3 \* (pow(10,(-3.49149\*(A0-1)))-1) ;

SUM += log10(1013.246);

double VP = pow(10, SUM-3) \* humidity;

double T = log(VP/0.61078); // temp var

return (241.88 \* T) / (17.558-T);

}

// ¿ìËÙ¼ÆËãÂ¶µã£¬ËÙ¶ÈÊÇ5±¶dewPoint()

// ²Î¿¼: [url=http://en.wikipedia.org/wiki/Dew\_point]http://en.wikipedia.org/wiki/Dew\_point[/url]

double dewPointFast(double celsius, double humidity)

{

double a = 17.271;

double b = 237.7;

double temp = (a \* celsius) / (b + celsius) + log(humidity/100);

double Td = (b \* temp) / (a - temp);

return Td;

}

#include <dht11.h>

#include <Wire.h>

#include <LiquidCrystal\_I2C.h>

LiquidCrystal\_I2C lcd(0x27,16,2); // set the LCD address to 0x27 for a 16 chars and 2 line display

dht11 DHT11;

#define DHT11PIN 2

void setup()

{

lcd.init(); // initialize the lcd

lcd.backlight();

lcd.print("Waiting...");

Serial.begin(9600);

}

void loop()

{

int chk = DHT11.read(DHT11PIN);

switch (chk)

{

case DHTLIB\_OK:

lcd.setCursor(0, 0);

lcd.print("Temp:");

lcd.print((float)DHT11.temperature,2);

lcd.write(0xDF);

lcd.print("C");

lcd.setCursor(0, 1);

lcd.print("Humidity:");

lcd.print((float)DHT11.humidity,2);

lcd.print("%");

break;

case DHTLIB\_ERROR\_CHECKSUM:

lcd.clear();

lcd.print("Checksum error");

delay(1000);

lcd.clear();

break;

case DHTLIB\_ERROR\_TIMEOUT:

lcd.clear();

lcd.print("Time out error");

delay(1000);

lcd.clear();

break;

default:

lcd.clear();

lcd.print("Unknown error");

delay(1000);

lcd.clear();

break;

}

delay(1000);

}

<http://www.instructables.com/id/Arduino-Hygrothermograph-Hygrometer-Kit-LCD1602I2C/>

<https://www.youtube.com/watch?v=Z9cMOgPE5tA>