

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY  
BELGAUM**



**Project Report  
On**

**"MOTION SENSOR TO ALERT AND IDENTIFY HUMAN  
INTRUSION"**

**Submitted in partial fulfillment for the award of the degree of  
BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION**

**Submitted By**

CHANDAN GIRIYAPPA NAVAR	[1JB08EC021]
DHANANJAY T.G	[1JB08EC028]
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**UNDER THE GUIDANCE OF**

**Internal guide  
Mr. Supreeth H.S.G  
Asst professor,  
Dept. of ECE, SJBIT**



**2011-2012**

**Department of Electronics and Communication Engineering  
Sri Adichunchanagiri Shikshana Trust ®  
SJB INSTITUTE OF TECHNOLOGY,  
B G S HEALTH AND EDUCATION CITY,  
KENGERRI, BANGALORE-560060**

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# S.J.B INSTITUTE OF TECHNOLOGY

BGS Health & Education City, Kengeri, Bangalore-560060



## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### CERTIFICATE

This is to certify that the project entitled "**MOTION SENSOR TO ALERT AND IDENTIFY HUMAN INTRUSION**" is bonafide work carried out by **DIPTIMAN HAZRA** (1JB08EC030) in partial fulfillment for the award of "**BACHELOR OF ENGINEERING**" in **ELECTRONICS AND COMMUNICATION** Engineering as prescribed by **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**, Belgaum during the academic year 2011-12.

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Signature of Guide

Mr. Supreeth H.S.G

Asst. Professor,  
Dept. of ECE

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Signature of HOD  
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Signature of Principal

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2. Bhavya Lakshmi

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A handwritten signature in black ink, appearing to read "Bhavya Lakshmi 15/06/12".

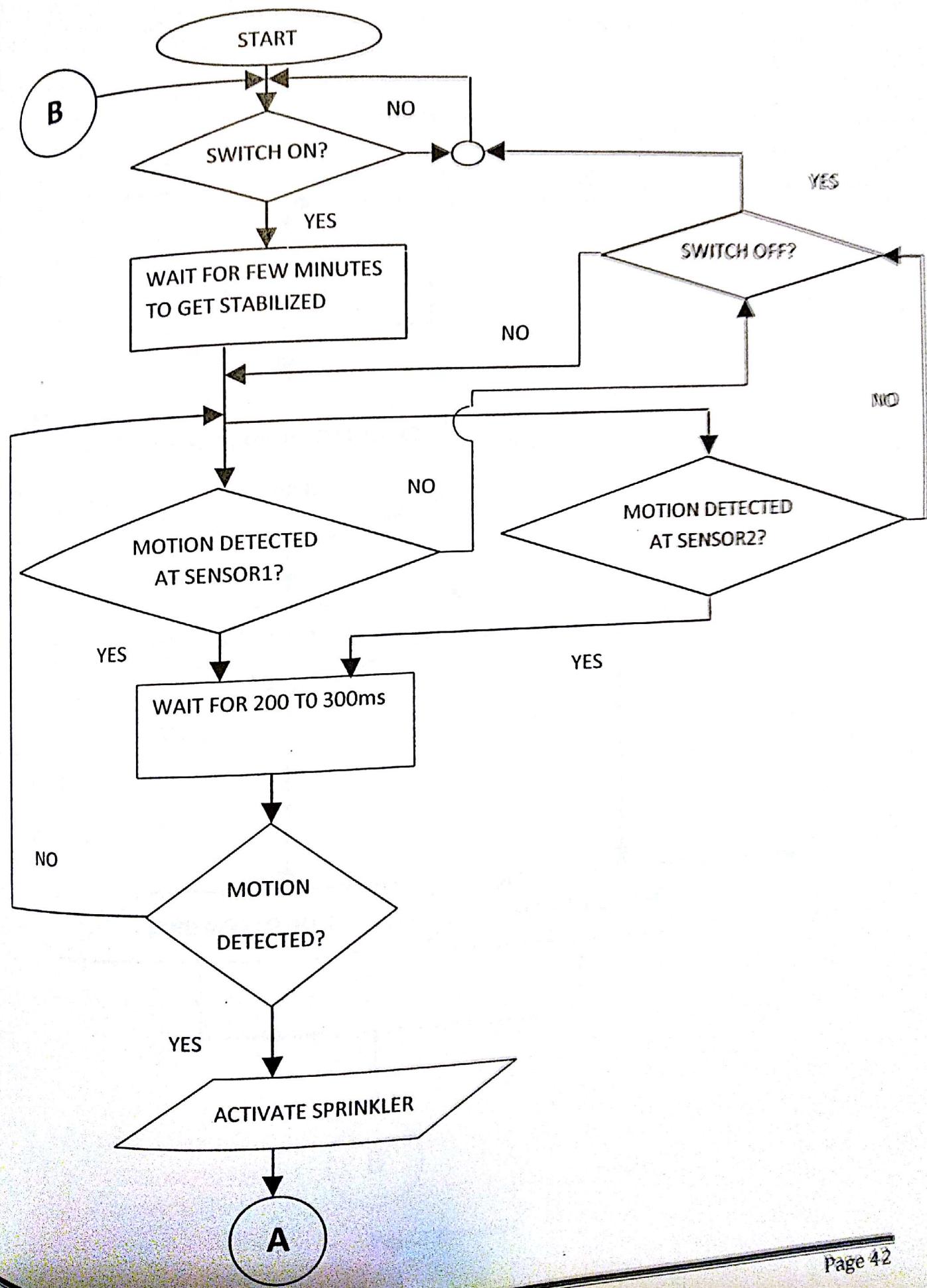
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## 4.1 FLOWCHART



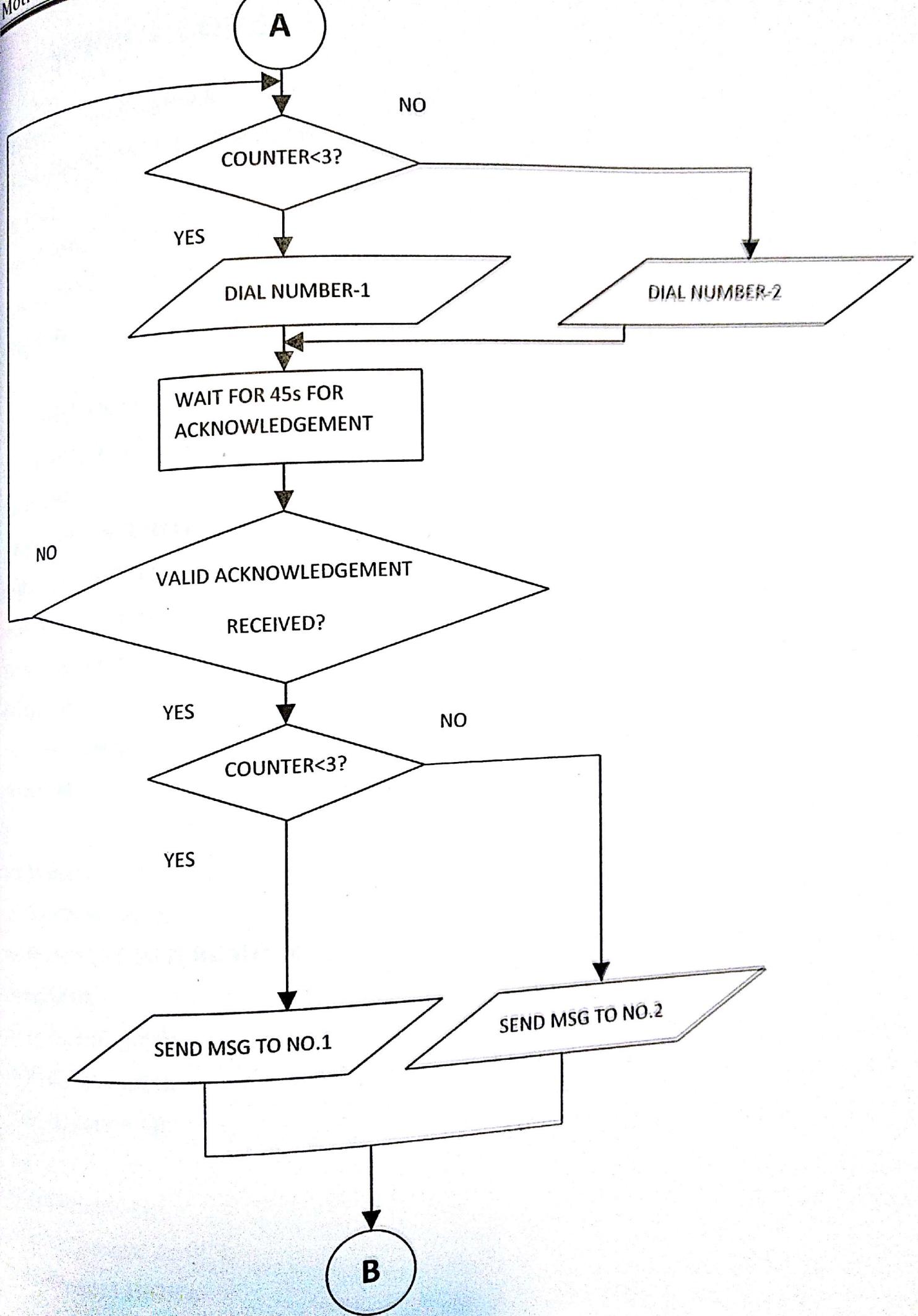


Fig. 4.1 flowchart

## 4.2 SOURCE CODE

```
#include <LiquidCrystal.h>
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
int m=0;
char a[200];
char num[9];
void setup()
{
  pinMode(7, OUTPUT);
  pinMode(6, OUTPUT);
  lcd.begin(16, 2);
  pinMode(13,OUTPUT);
  pinMode(9,INPUT);
  pinMode(8,INPUT);
  Serial.begin(9600);
  delay(2000);
  gsm_initialize();
  delay(5000);
}
void loop()
{
  lcd.setCursor(0, 1);
  lcd.print("SYSTEM IS READY");
  delay(3000);
  int x= digitalRead(8);
  int y= digitalRead(9);
  if((x==1) or (y==1))
  {
    lcd.setCursor(0, 1);
    lcd.print("intruder alert!!!");
    digitalWrite(13,HIGH);
    delay(1000);
    digitalWrite(13,LOW);
  }
}
```

```
delay(250);
x= digitalRead(8);
y= digitalRead(9);
digitalWrite(7,HIGH);
digitalWrite(6,LOW);
delay(5000);
digitalWrite(7,LOW);

}

while((x==1) or (y==1))
{
digitalWrite(13,HIGH);
if(m<3)
Serial.print("ATD+919620503306;\r");
else
Serial.print("ATD+919740340433;\r");
lcd.clear();
lcd.setCursor(0, 0);
lcd.print("DIALLING");
lcd.setCursor(0, 1);
if(m<3)
lcd.print("+919620503306");
else
lcd.print("+919740340433");
delay(8000);
lcd.clear();
lcd.setCursor(0, 0);
lcd.print("WAITING FOR");
lcd.setCursor(0, 1);
lcd.print("ACKNOWLEDGEMENT");
Serial.print("AT\r");
delay(200);
Serial.print("AT+CMGF=1\r");
delay(200);
```

```
Serial.print("AT+CMGD=1\r");
delay(30000);
Serial.flush();
lcd.setCursor(0, 1);
Serial.print("AT\r");
delay(200);
Serial.print("AT+CMGF=1\r");
delay(200);
Serial.print("AT+CMGR=1\r");
int i=0;
while (Serial.available()) {
delay(5);
if (Serial.available() >0) {
char c = Serial.read(); //gets one byte from serial buffer
a[i]+=c; //makes the string readString
i++;
}
}
lcd.clear();
lcd.setCursor(0,1);
for(int j=61;j<=70;j++)
{
lcd.print(a[j]);
num[j-61]=a[j];
}
If(((num[0]=='9')&&(num[1]=='6')&&(num[2]=='2')&&(num[3]=='0')&&(num[4]=='5')&&(num[5]=='0')&&(num[6]=='3')&&(num[7]=='3')&&(num[8]=='0')&&(num[9]=='6'))((num[0]=='9')&&(num[1]=='7')&&(num[2]=='4')&&(num[3]=='0')&&(num[4]=='3')&&(num[5]=='4')&&(num[6]=='0')&&(num[7]=='4')&&(num[8]=='3')&&(num[9]=='3'))) // test to see if the two strings are equal
{
lcd.setCursor(0,0);
```

```
lcd.print("RECEIVED FROM");
delay(2000);
lcd.clear();
lcd.setCursor(0,0);
lcd.print("VALID");
lcd.setCursor(0,1);
lcd.print("ACKNOWLEDGEMENT");
delay(4000);
lcd.clear();
lcd.setCursor(0,0);
lcd.print("SENDING MESSAGE");
delay(5000);
Serial.print("AT\r");
delay(200);
Serial.print("AT+CMGF=1\r");
delay(200);
Serial.print("AT+CMGS=");
Serial.print("\"");
if(m<3)
Serial.print("+919620503306");
else
Serial.print("+919740340433");
Serial.print("\"");
Serial.print("\r");
delay(1000);
if(x==1)
{
Serial.print("intruder at room No 1 \xA ");
delay(300);
lcd.clear();
lcd.setCursor(0,0);
lcd.print("INTRUDER AT");
lcd.setCursor(0,1);
```

```
digitalWrite(13,HIGH);
delay(500);
digitalWrite(13,LOW);
delay(500);
digitalWrite(13,HIGH);
delay(500);
while(1)
{
}
}
else
{
m++;
Serial.flush();
lcd.setCursor(0, 0);
lcd.print("NO");
lcd.setCursor(0,1);
lcd.print("ACKNOWLEDGEMENT");
lcd.setCursor(0,1);
Serial.print("AT\r");
delay(200);
Serial.print("AT+CMGF=1\r");
delay(200);
Serial.print("AT+CMGD=1\r");
delay(1000);
Serial.print("AT+CMGD=2\r");
delay(1000);
digitalWrite(13,LOW);
delay(500);
digitalWrite(13,HIGH);
delay(500);
digitalWrite(13,LOW);
delay(500);
```

```
digitalWrite(13,HIGH);
delay(500);
digitalWrite(13,LOW);

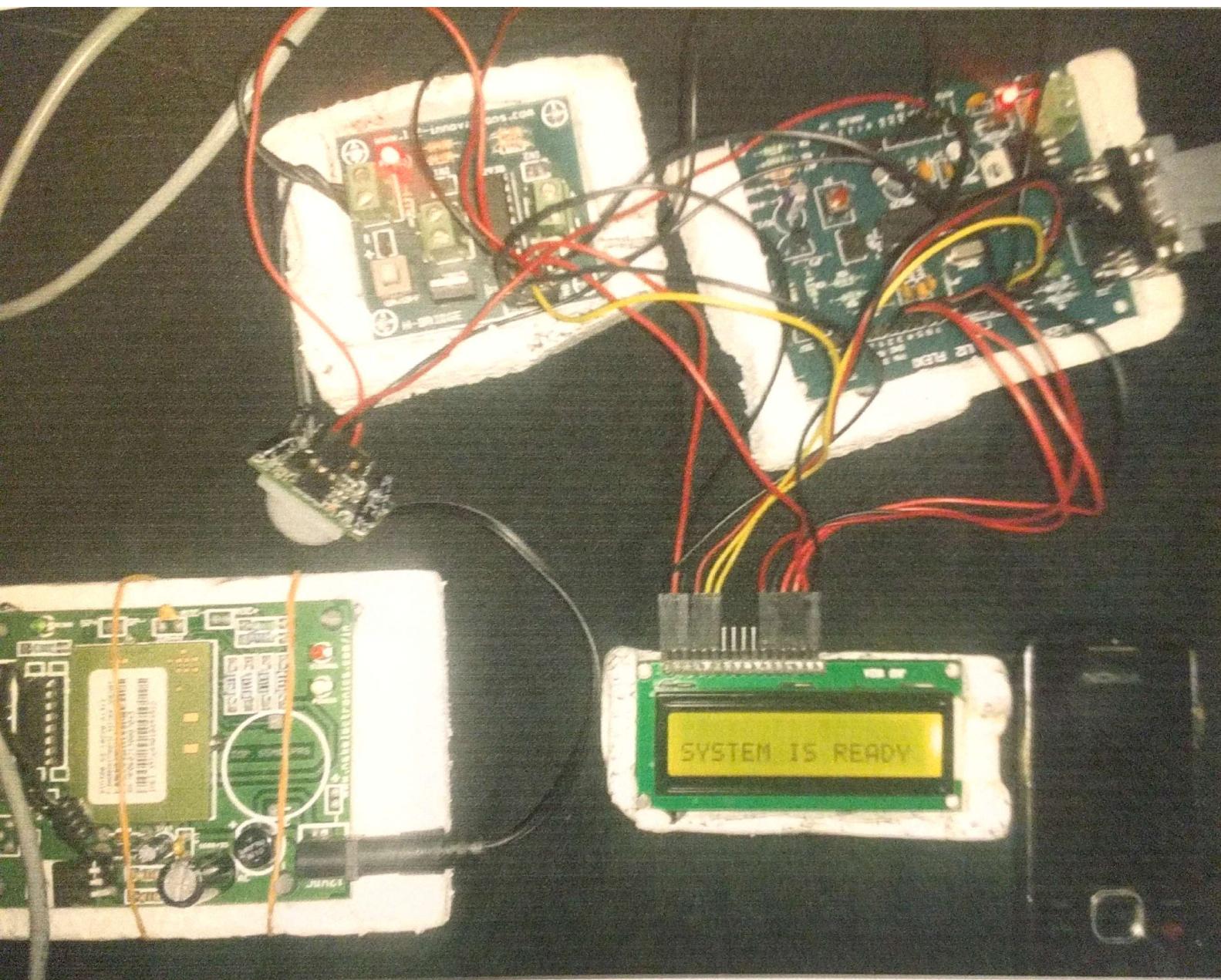
}

}

}

void gsm_initialize()
{
Serial.print("AT\r");
delay(200);
Serial.print("AT+IFC=1,1\r");
delay(200);
Serial.print("AT&W\r");
delay(200);
Serial.print("AT+IPR=9600\r");
delay(200);
Serial.print("AT&W\r");
delay(200);
Serial.flush();
}
```





**Fig.5.7. Initialization**

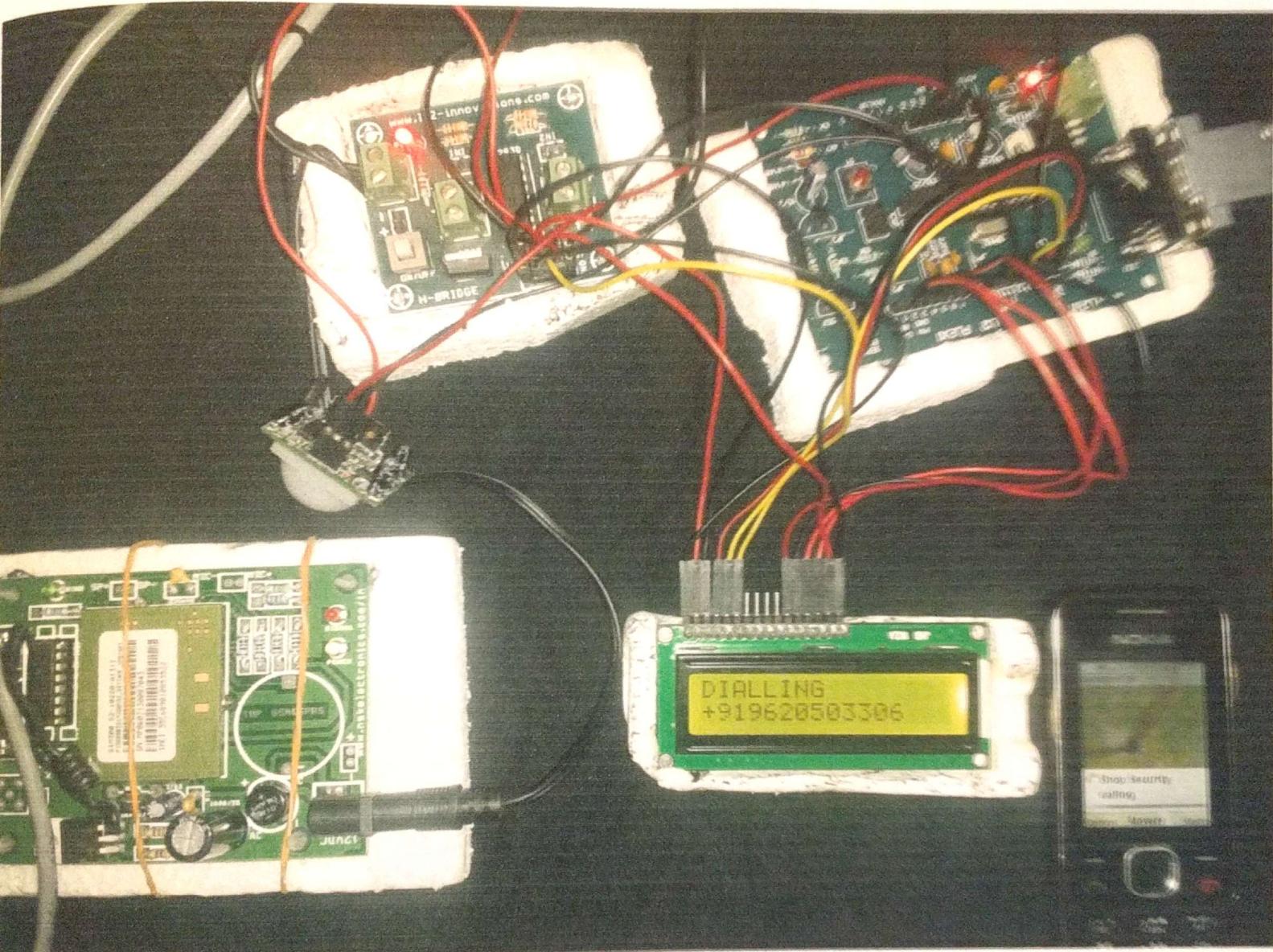
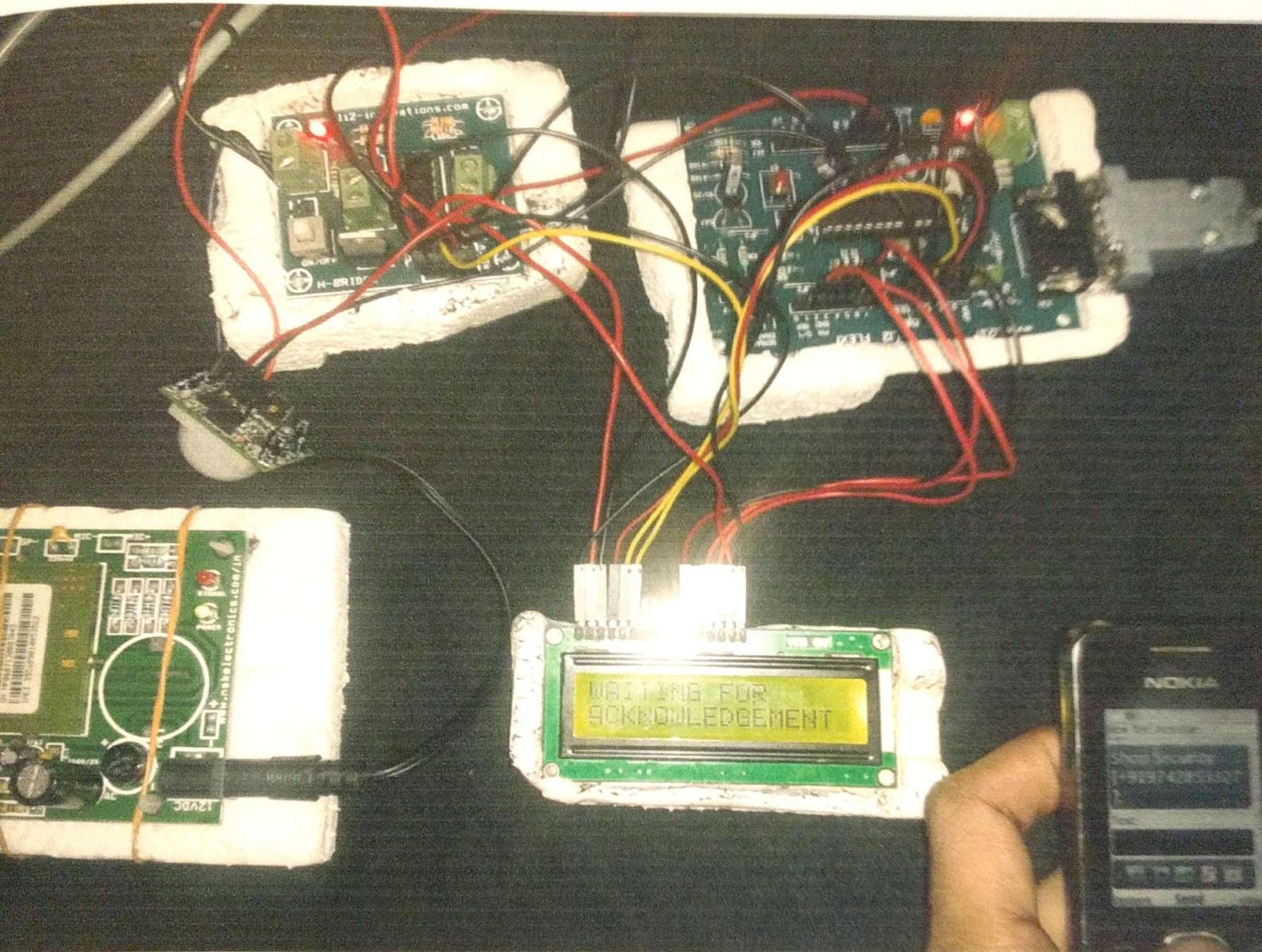
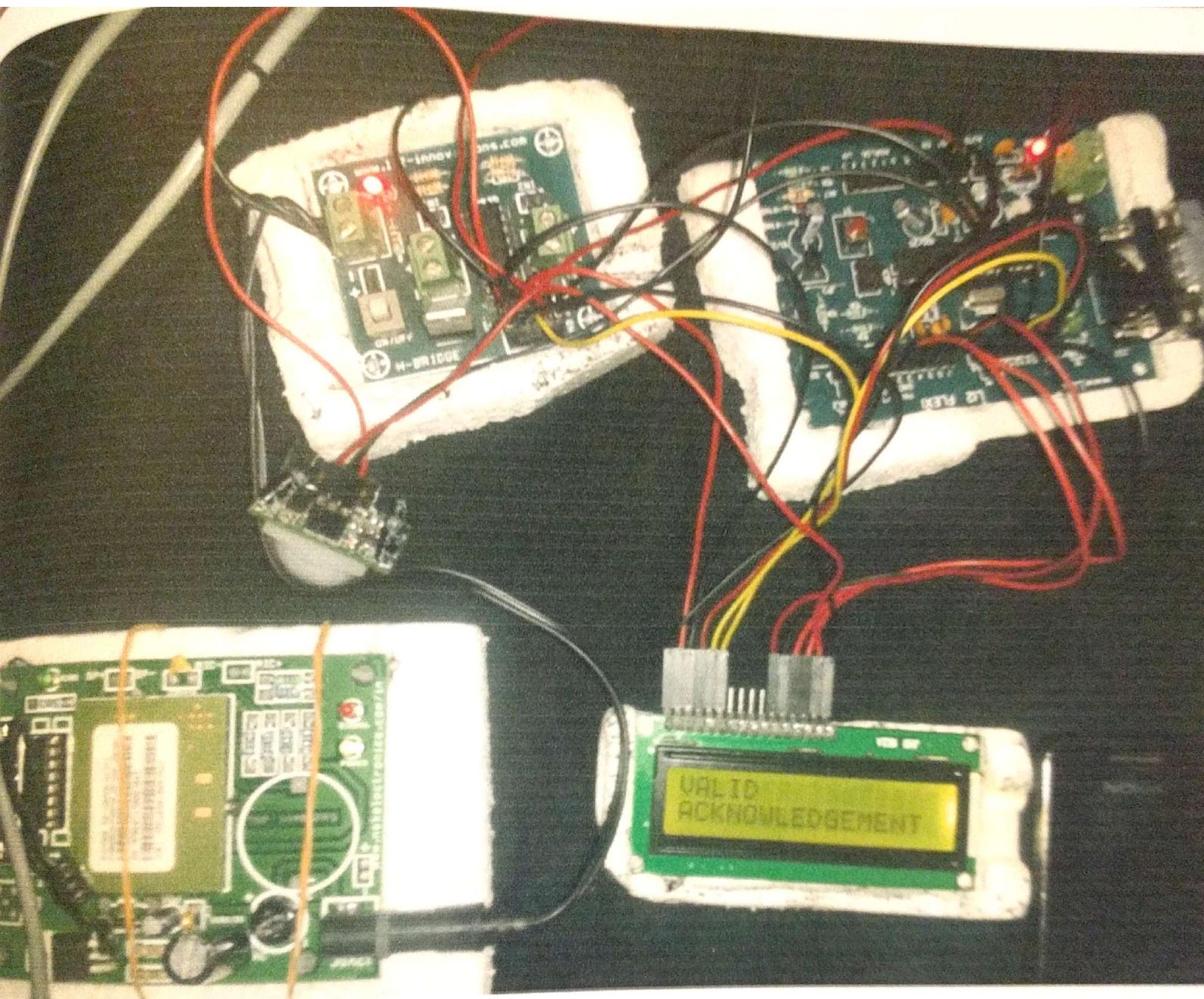


Fig.5.9 dialling in progress





**Fig.5.11 Valid acknowledgement**

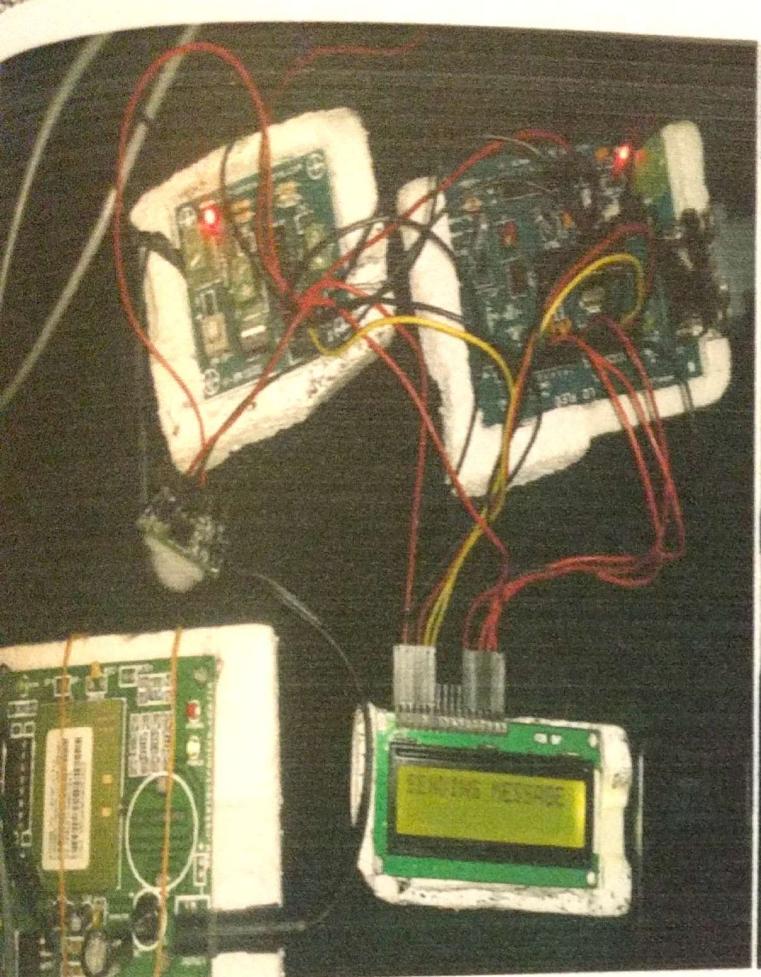


Fig.5.12 (a) System sending message

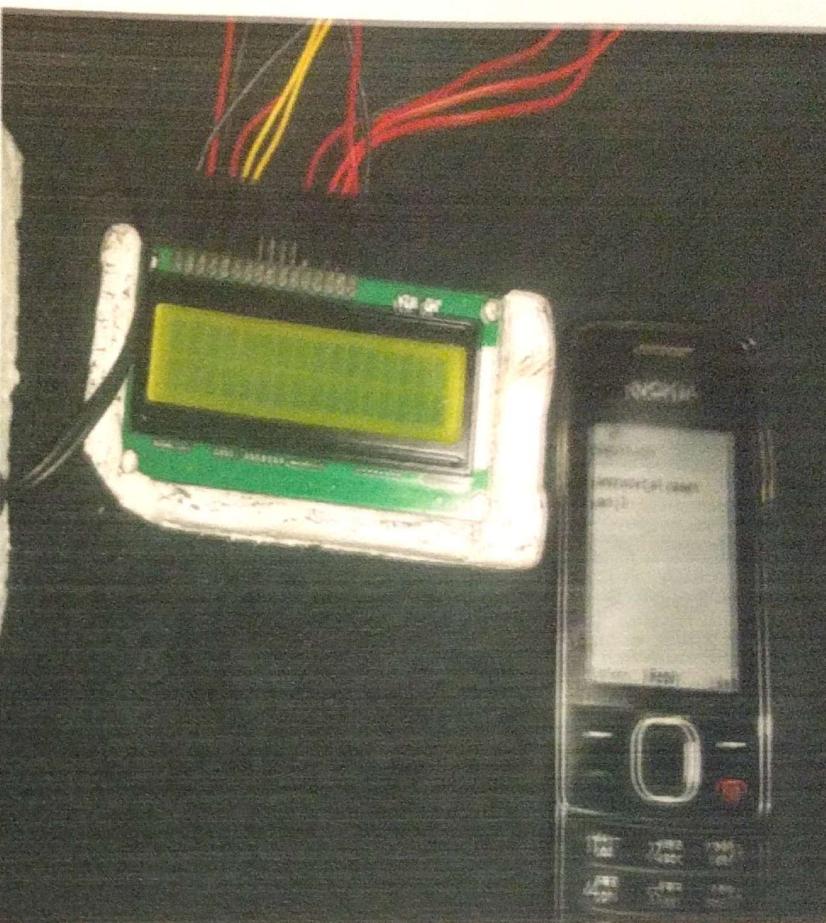
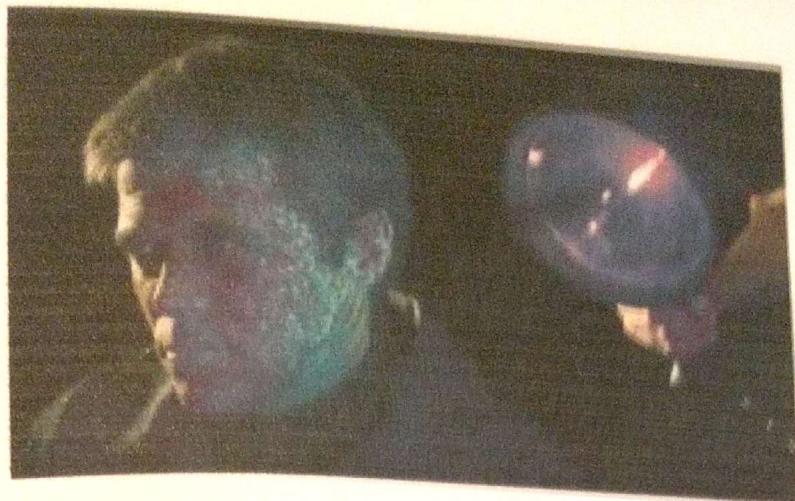
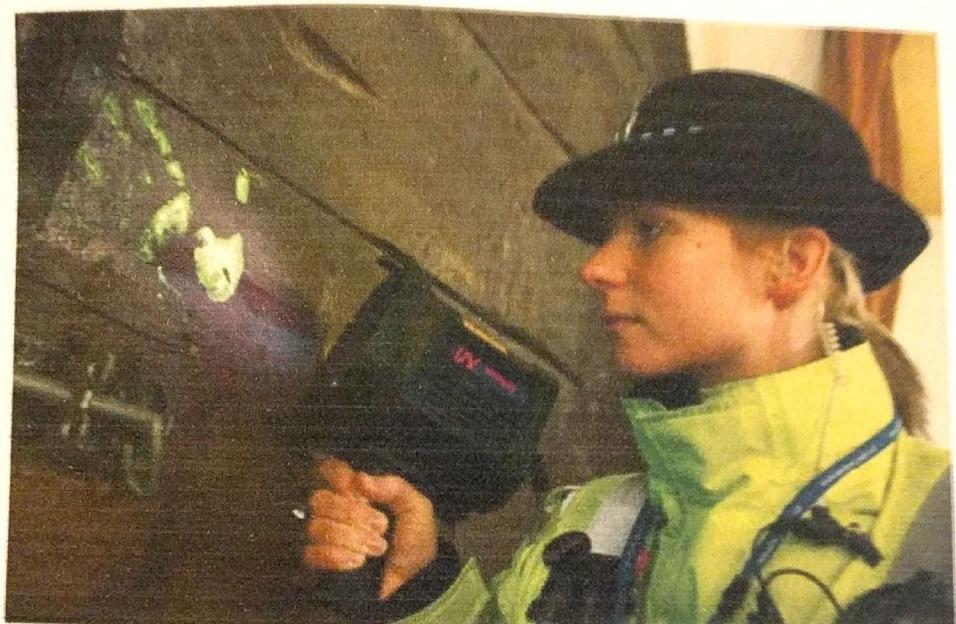


Fig.5.12 (b) Mobile phone receiving the area of intrusion



**Fig. 5.13(a) Identification by UV light**



**Fig .5.13(b) Trails left behind by the Culprit.**



**Fig .5.13(c) Linking the culprit to the crime of scene**