

**University of Montenegro
Faculty of Electrical Engineering
Podgorica**

Laboratorijske vježbe iz predmeta Industrijska elektronika

**Automatska regulacija svijetla
Light regulator on-off**

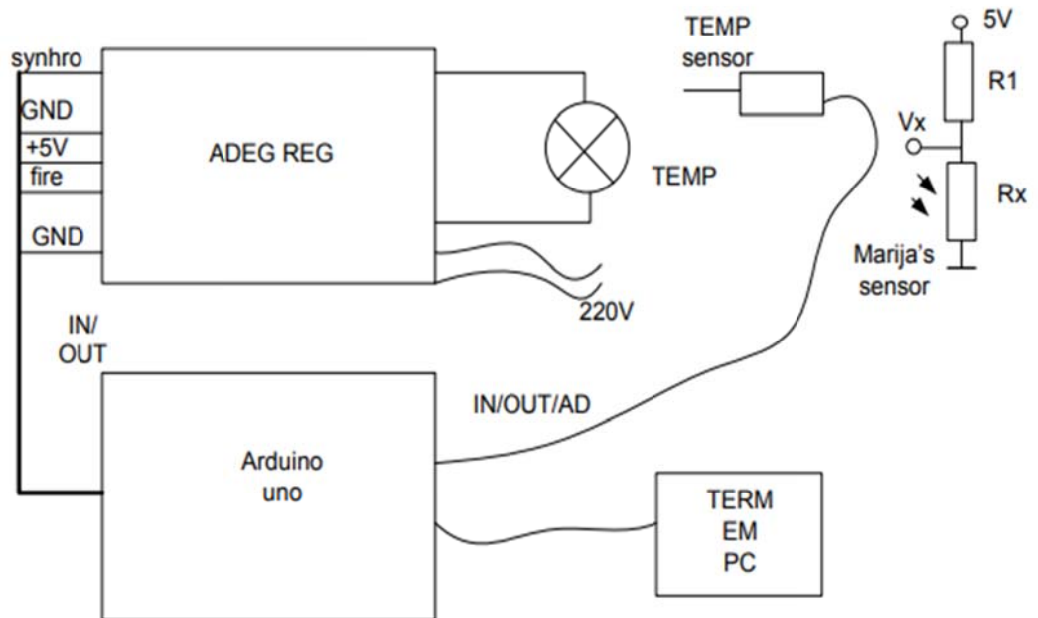
Predmetni nastavnik/Professor:

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Mart 2018.

Zadatak:

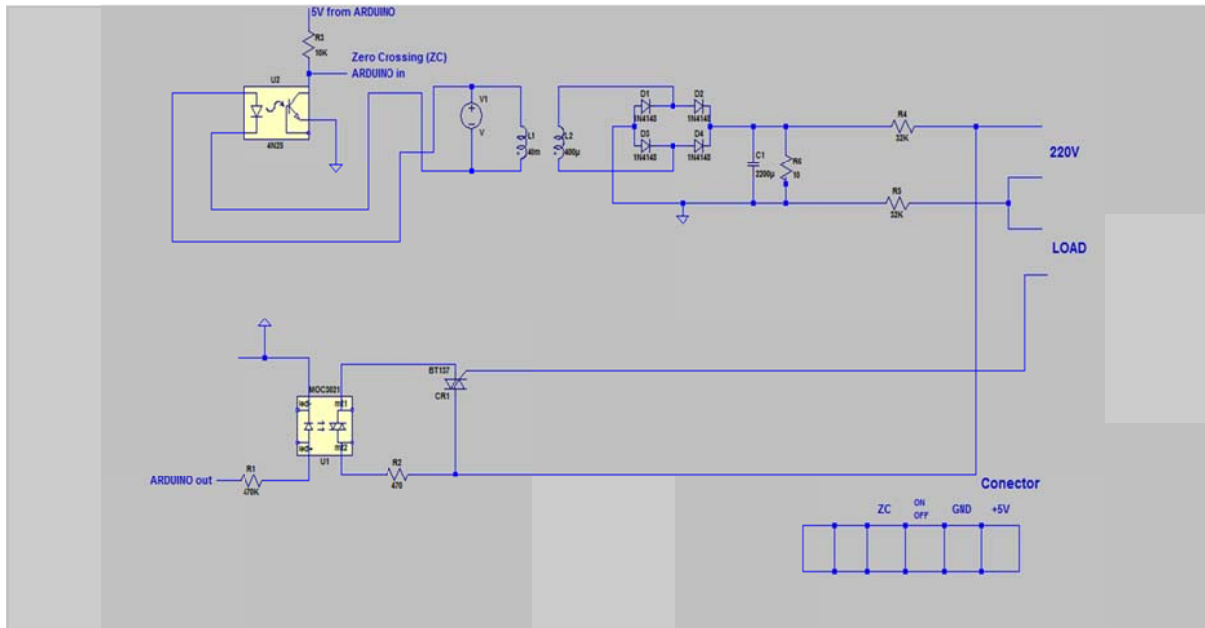
Automatska regulacija svijetla u zavisnosti od osvjetljenja prostorije



**SINHRO
CIRCUIT**

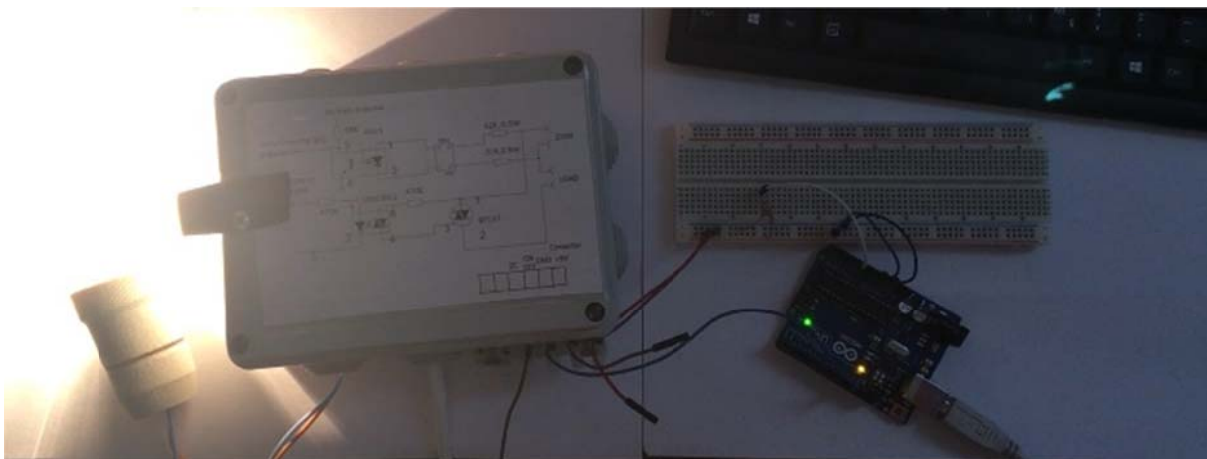
Abstract:

The light bulb is connected to Arduino through the modified circuit ADEG REG. Arduino receives information about the amount of light through the voltage divider. The voltage divider consists of regular resistor and photoresistor. When there is enough light, resistance is low and the bulb is off. In case of reducing the amount of light, resistance is increased and bulb turns on. Using terminal emulator, we control the work of whole circuit.



Slika1. ADEG REG Sinhronizaciono kolo. LT Spice.

Naše rješenje prethodnog zadatka prikazano je na sledećoj slici:



Koristili smo Arduino razvojno okruženje.

Sijalica je povezana na Arduino preko speijalno dizajniranog kola ADEG REG. Arduino prima podatak o količini svjetlosti preko djelitelja napona. Djelitelj napona se sastoji od običnog otpornika i od fotootpornika. Kada je prostorija osvijetljena, otpornost je mala i sijalica je ugašena. Smanjenjem svjetlosti otpornost raste i sijalica se uključuje. Takođe postoji mogućnost uključivanja i isključivanja datok sistema preko serijskog monitora.

Kod:

```
int pot=1000;
intsens=0;
int a;
void setup() {
  pinMode(A0,INPUT);
  // pinMode(A2,INPUT);
  pinMode(13,OUTPUT);
  Serial.begin(9600);
}

void loop() {
  sens=analogRead(A0);
  a=Serial.read();
  if(a==49){ pot=180;}
  if(a==48) {
    pot=1000;

  }
  if(pot>sens)
    digitalWrite(13,0);

  else
    digitalWrite(13,1);
  Serial.println("sens");
  Serial.println(sens);
  Serial.println("pot");
  Serial.println(pot);

  delay(1000);
```

}

Video link rješenja problema:

https://www.youtube.com/watch?v=pTLfys5B_A&feature=youtu.be

Literatura:

1. T. E. Kissell, Industrial Electronics, Third edition, Prentice Hall, 2003
2. S. A. Karr, T. E. Kissell, R. C. Overstreet. T.W. Wylie, Laboratory Manual to accompany Industrial Electronics, Third edition, Prentice Hall, 2003
3. <http://apeg.ac.me/nastava/Indel%20Sinhro%20and%20Power%20Out%20Circuits.pdf>
4. <https://playground.arduino.cc/Main/ACPhaseControl>
5. http://www.bristolwatch.com/ele2/zero_crossing.htm