

**CRISTIAN CIRAMI, ALEX LEMBO**

**24/02/2023**

**PROVE DI**

# **CONDUCCIBILITA' ELETTRICA**

# # OBIETTIVO 1



**Verificare la conducibilità elettrica di alcune sostanze pure, composti ionici, composti covalenti e di soluzioni covalenti**



# #TEORIA 2

(INTRODUZIONE TEORICA)



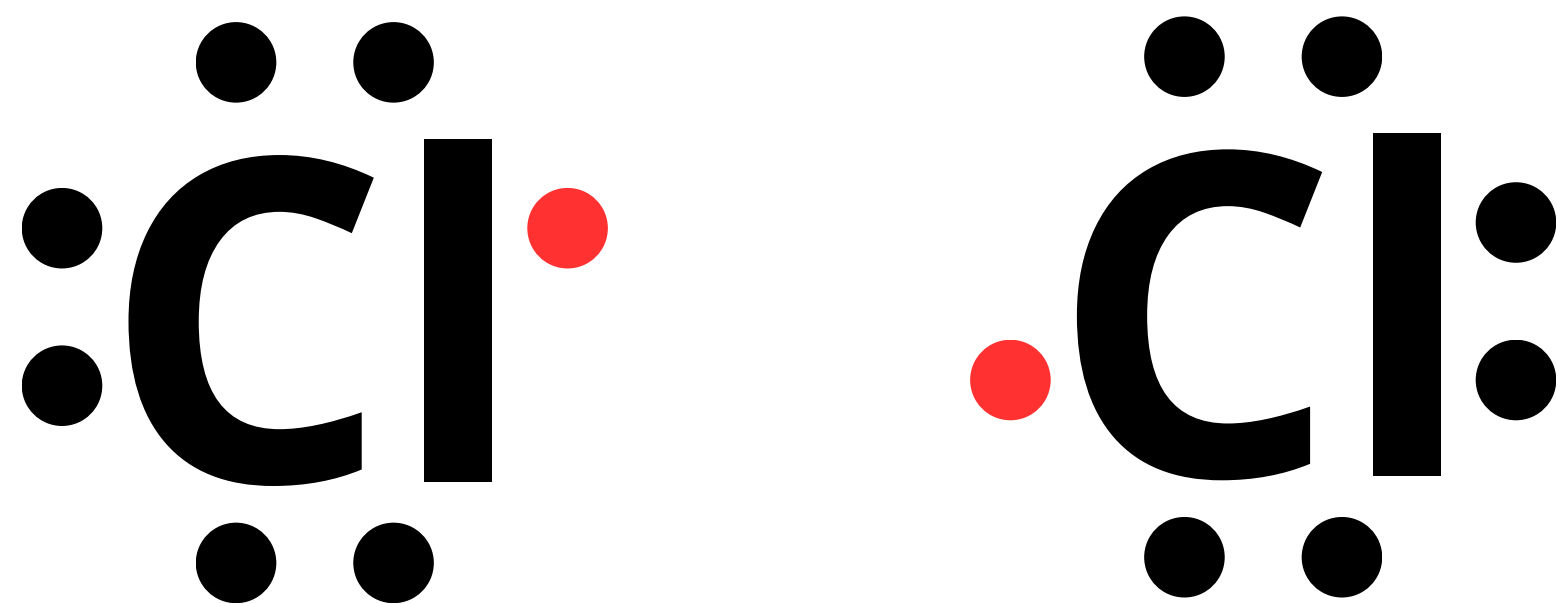
## **Cos'è un legame covalente?**

Un legame covalente è un legame fra due atomi nella quale vi è la condivisione di (una o più) coppie di elettroni.



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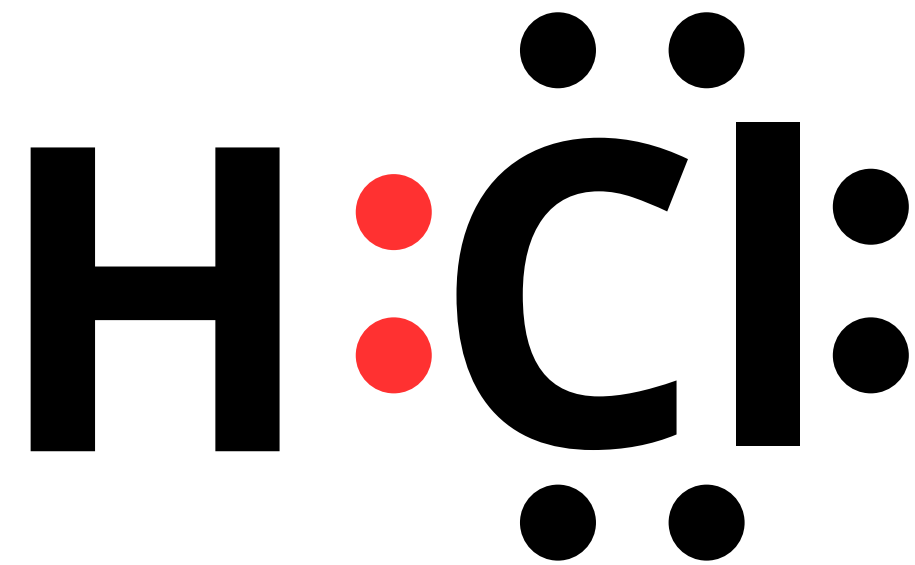


## Cos'è un legame covalente?

Un legame covalente è un legame fra due atomi nella quale vi è la condivisione di (una o più) coppie di elettroni.



# TIPI DI LEGAMI COVALENTI:



## POLARE

Gli elettroni condivisi sono disposti in maniera non simmetrica



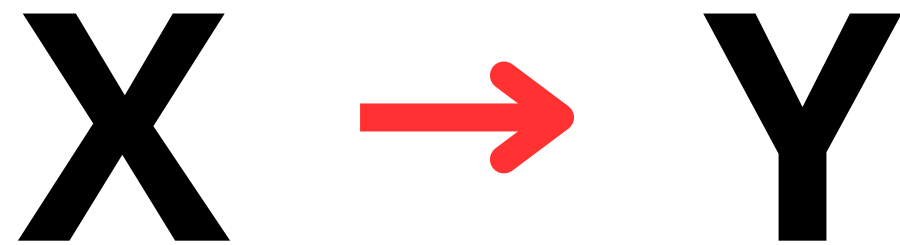
# TIPI DI LEGAMI COVALENTI:



## **APOLARE (PURO)**

Differenza di elettronegatività  
uguale a 0

# TIPI DI LEGAMI COVALENTI:



## DATIVO

La coppia di elettroni condivisi  
viene solo da un atomo



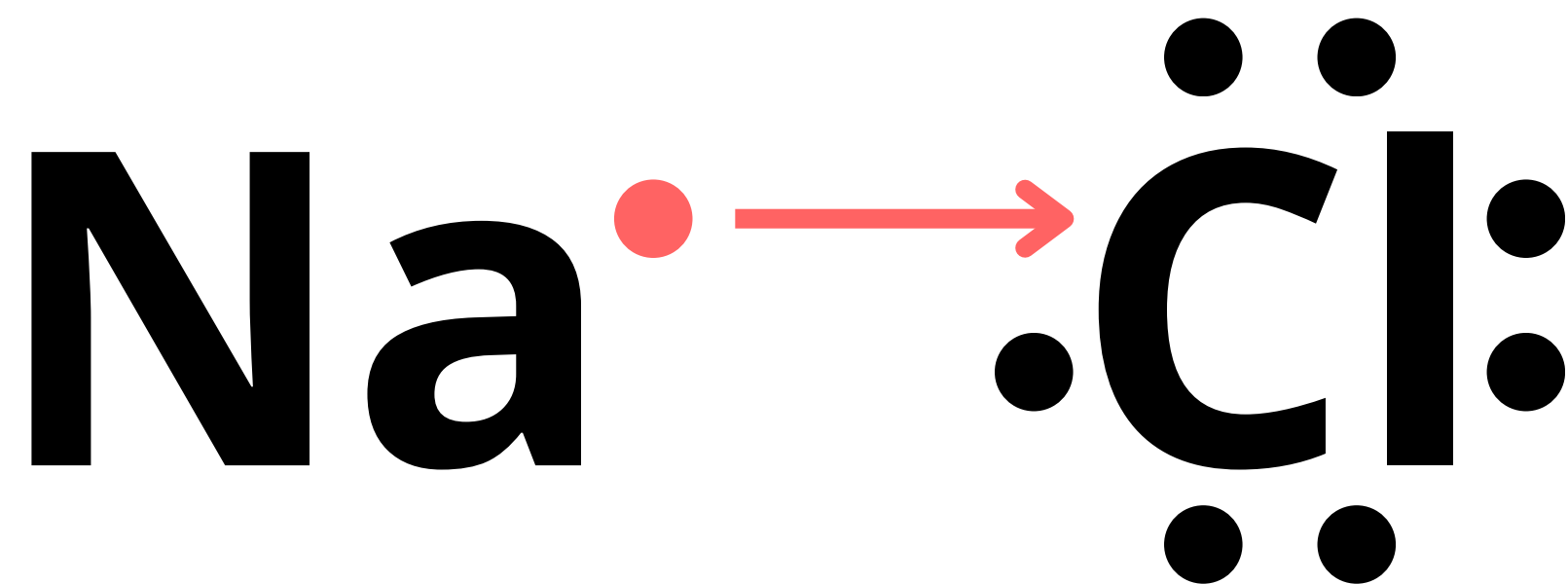
## **Cos'è un legame ionico?**

Un legame ionico è un legame fra due atomi di carica opposta (catione e anione). Esso si forma quando vi è una differenza di elettronegatività maggiore di 1,9.



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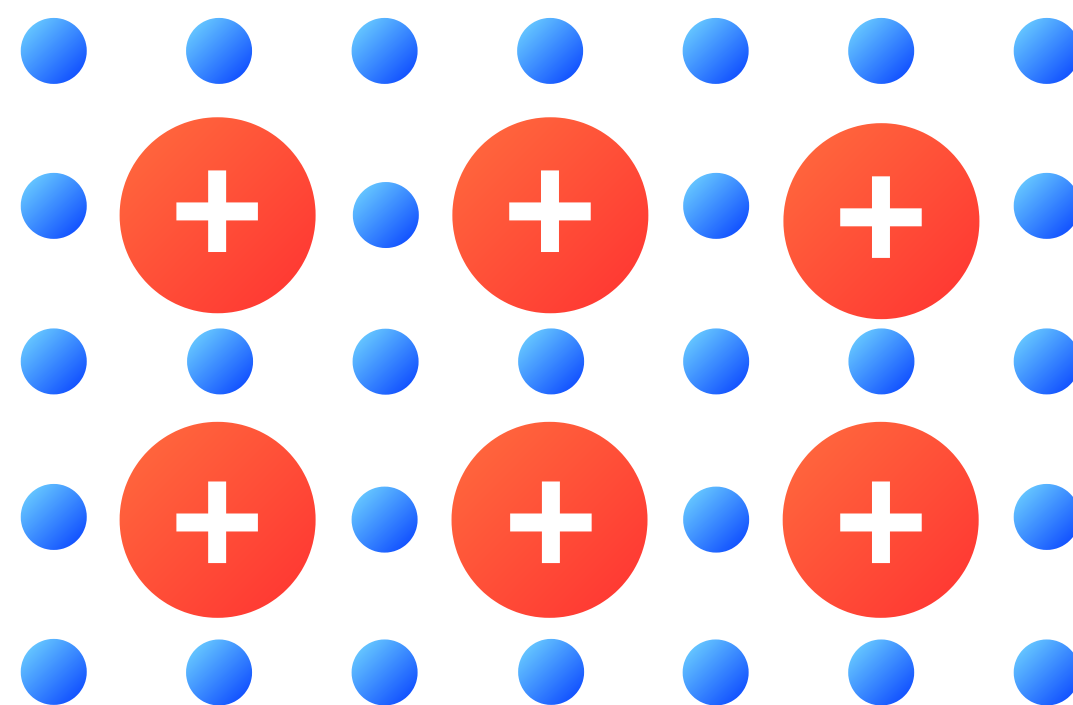
## Cos'è il legame metallico?

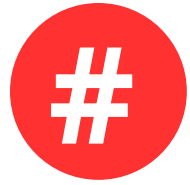
Il legame metallico è il legame che tiene uniti gli atomi che costituiscono un metallo. Gli elettroni in tale legame sono **delocalizzati**, ossia sono liberi di muoversi per tutto il sistema



## Cos'è il legame metallico?

Il legame metallico è il legame che tiene uniti gli atomi che costituiscono un metallo. Gli elettroni in tale legame sono in **delocalizzati**, ossia sono liberi di muoversi per tutto il sistema





## CONDUCIBILITA' ELETTRICA

Una particolarità dei metalli è il fatto di essere buoni conduttori elettrici. **La conducibilità elettrica deriva dalla libertà di movimento degli elettroni.**





## **CONDUCIBILITA' ELETTRICA**

Per quanto riguarda i composti ionici, conducono corrente solo allo stato liquido. Questo perchè il loro reticolo cristallino si spezza e gli ioni di carica opposta che lo costituivano sono liberi di muoversi.

A decorative graphic consisting of several red circles of varying sizes. One circle on the left contains a white hash symbol (#). Another circle on the right contains a white number 3. The circles are arranged around the text 'TABELLA DATI', with some overlapping the letters.

**TABELLA**  
**DATI**



## MATERIALI

Bacchetta di vetro

Becher

Spatola

Spruzzetta

## STRUMENTI

### Circuito Elettrico

- Alimentatore
- Cavetti elettrici con morsetti a coccodrillo
- Lampadina

## SOSTANZE

Sale (NaCl)

Zucchero ( $C_{12}H_{22}O_{11}$ )

Rame (Cu)

Zinco (Zn)

Magnesio (Mg)

Grafite

Filo di Nichel-Cromo

Acqua distillata

Acqua di rubinetto

VALUTAZIONE  
**RISCHI**





# Rischio di tipo fisico: ELETTRICO ⚡ E MECCANICO ⚙️

# #PROCEDIMENTO 5



**Verificare il corretto  
funzionamento del circuito.**



# Verificare il corretto funzionamento del circuito.

## OSSERVAZIONE

Deduciamo che il circuito funziona perchè la lampada si è accesa



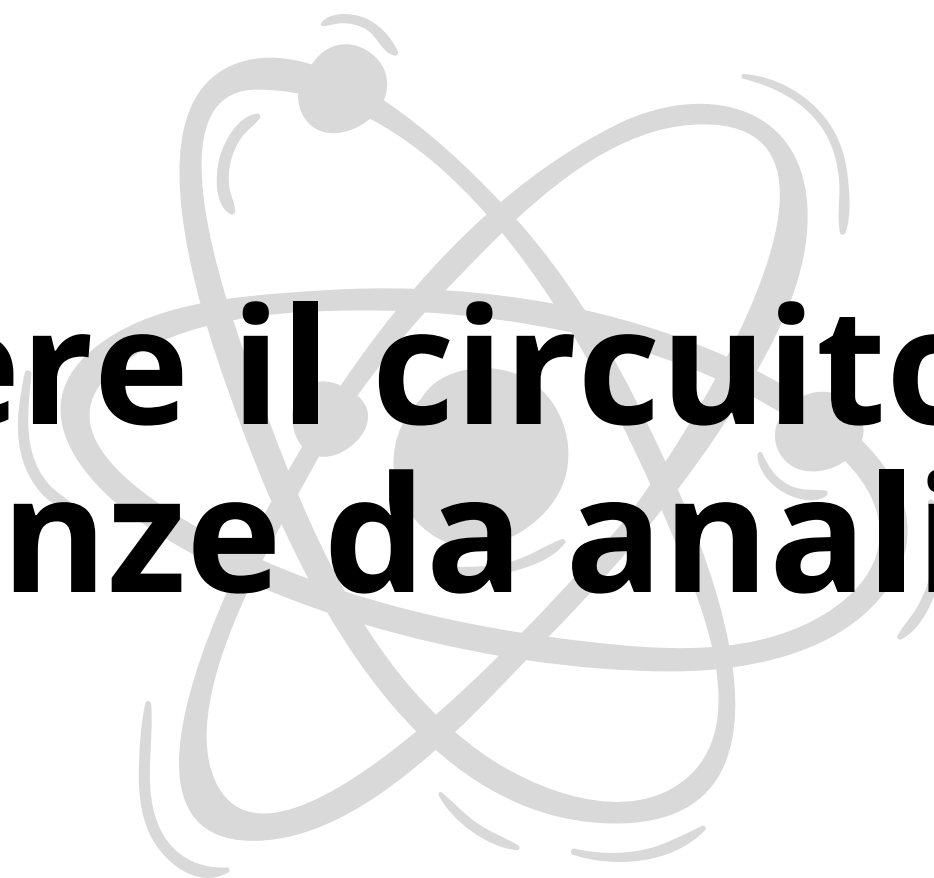


**Collegare il circuito alla  
lampadina**





**Chiudere il circuito con le  
sostanze da analizzare**





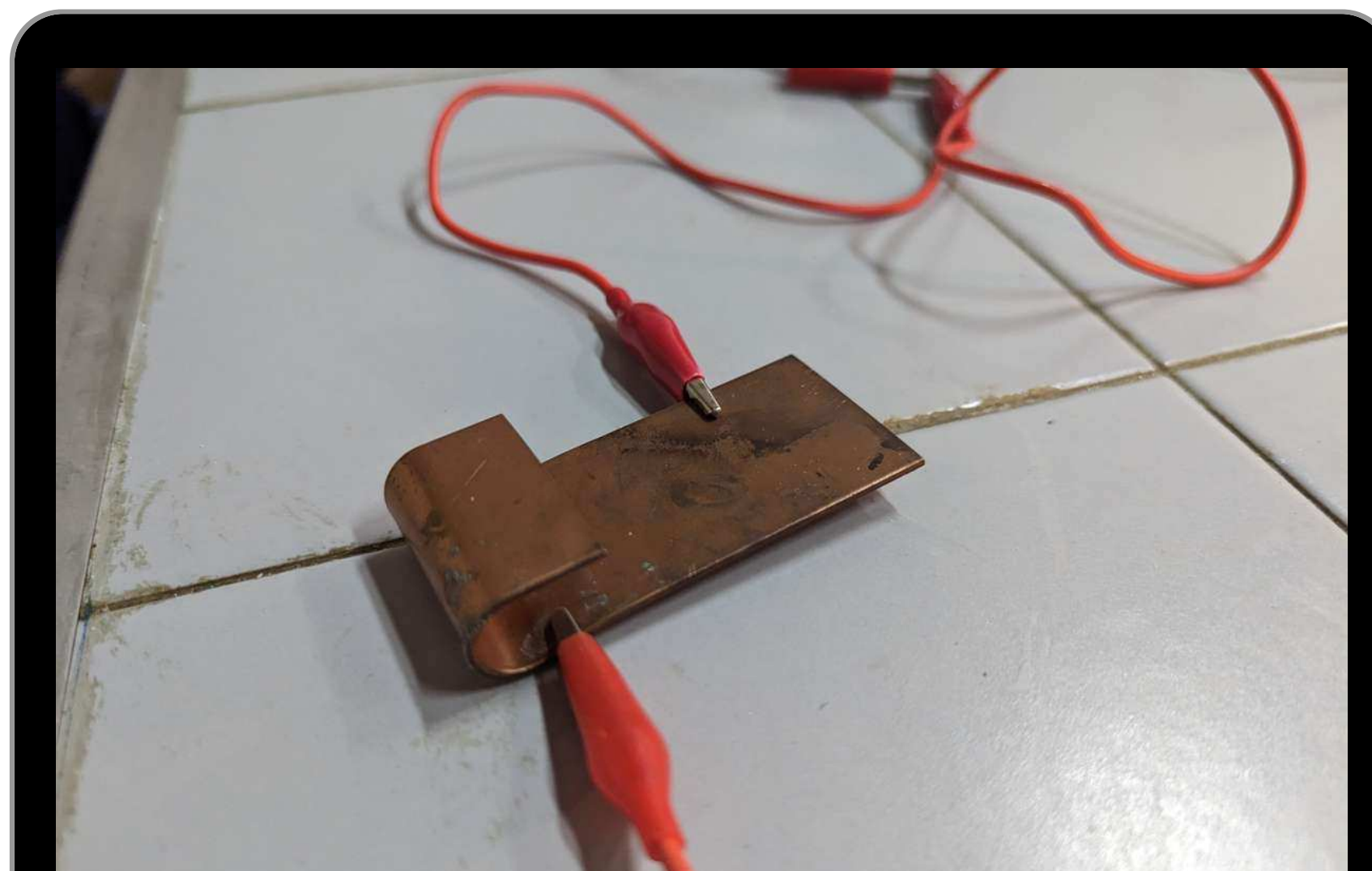
**Riportare le osservazioni in  
una tabella**


# OSSERVAZIONI



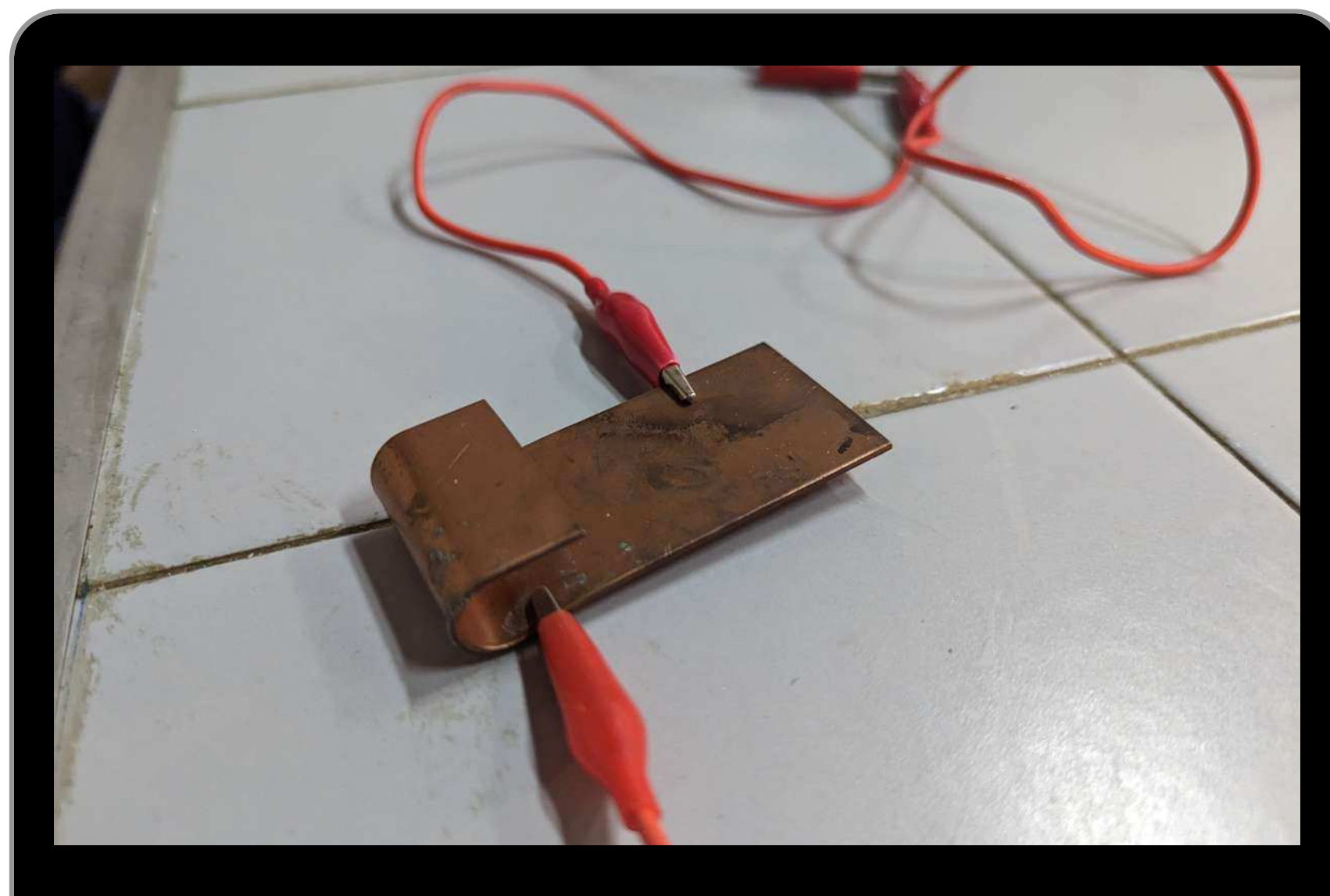
# SOSTANZA

Rame (Cu)





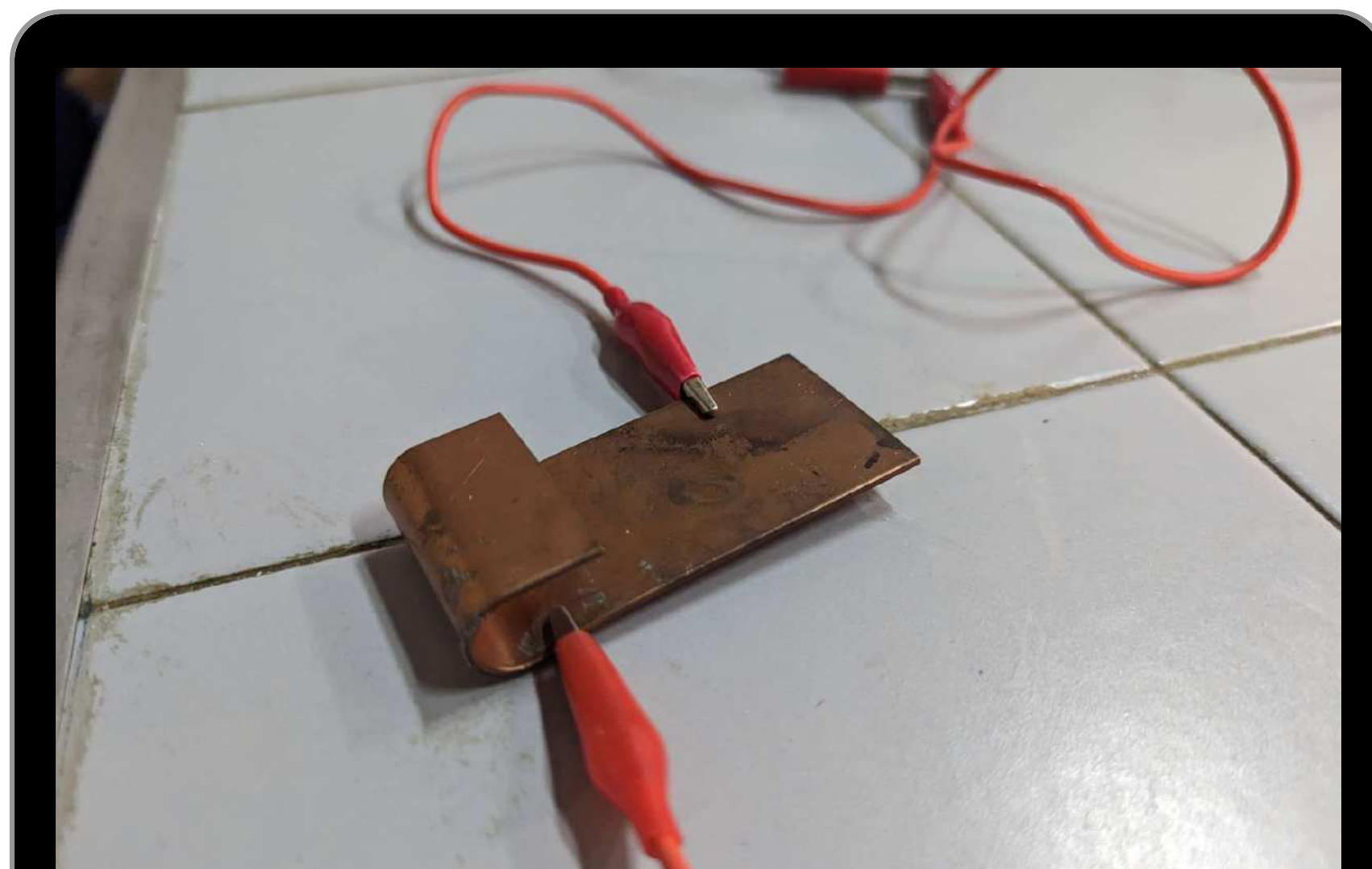
# LEGAME Metallico





# CONDUCE?

## Sì

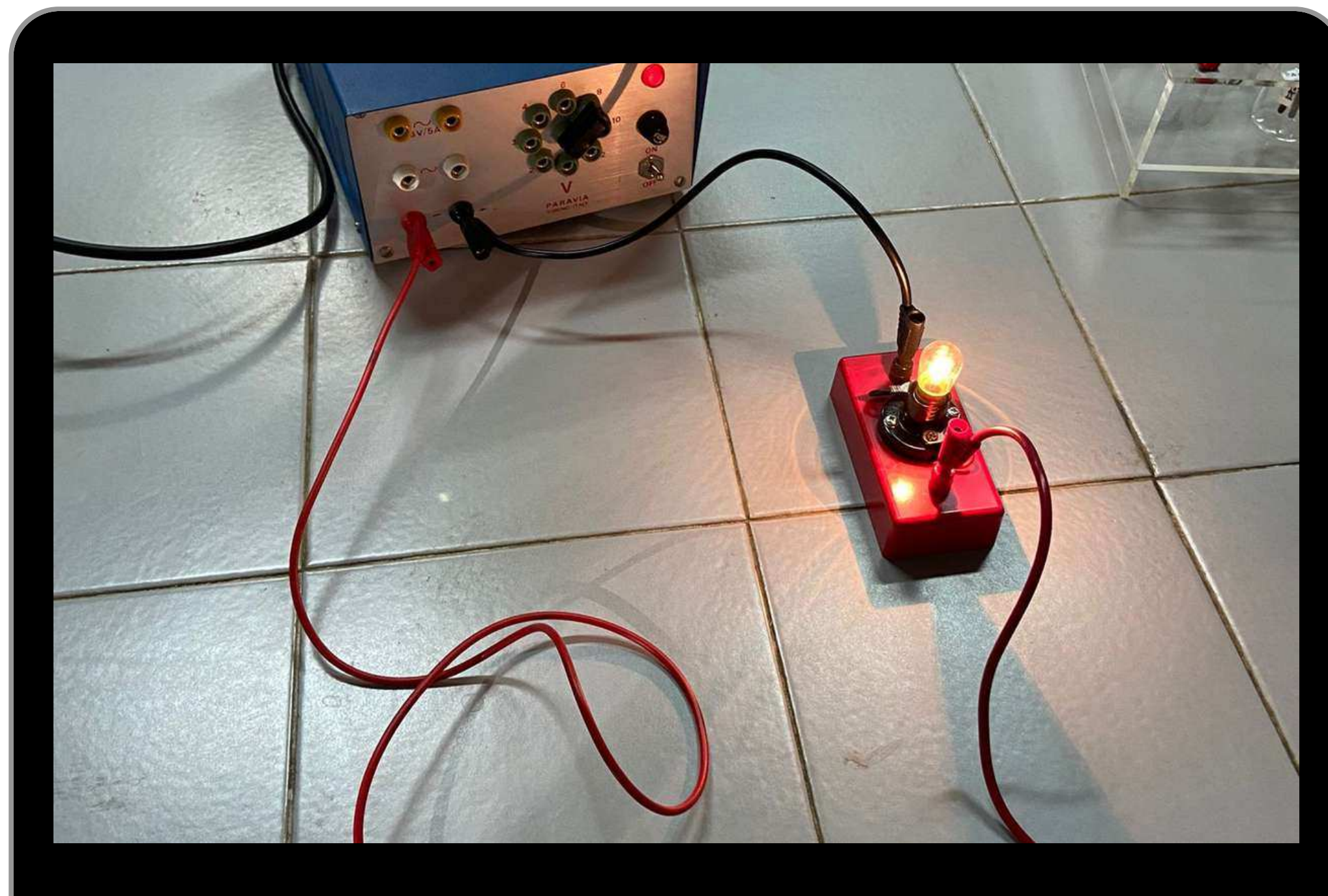


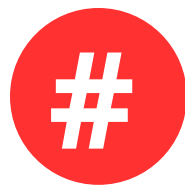






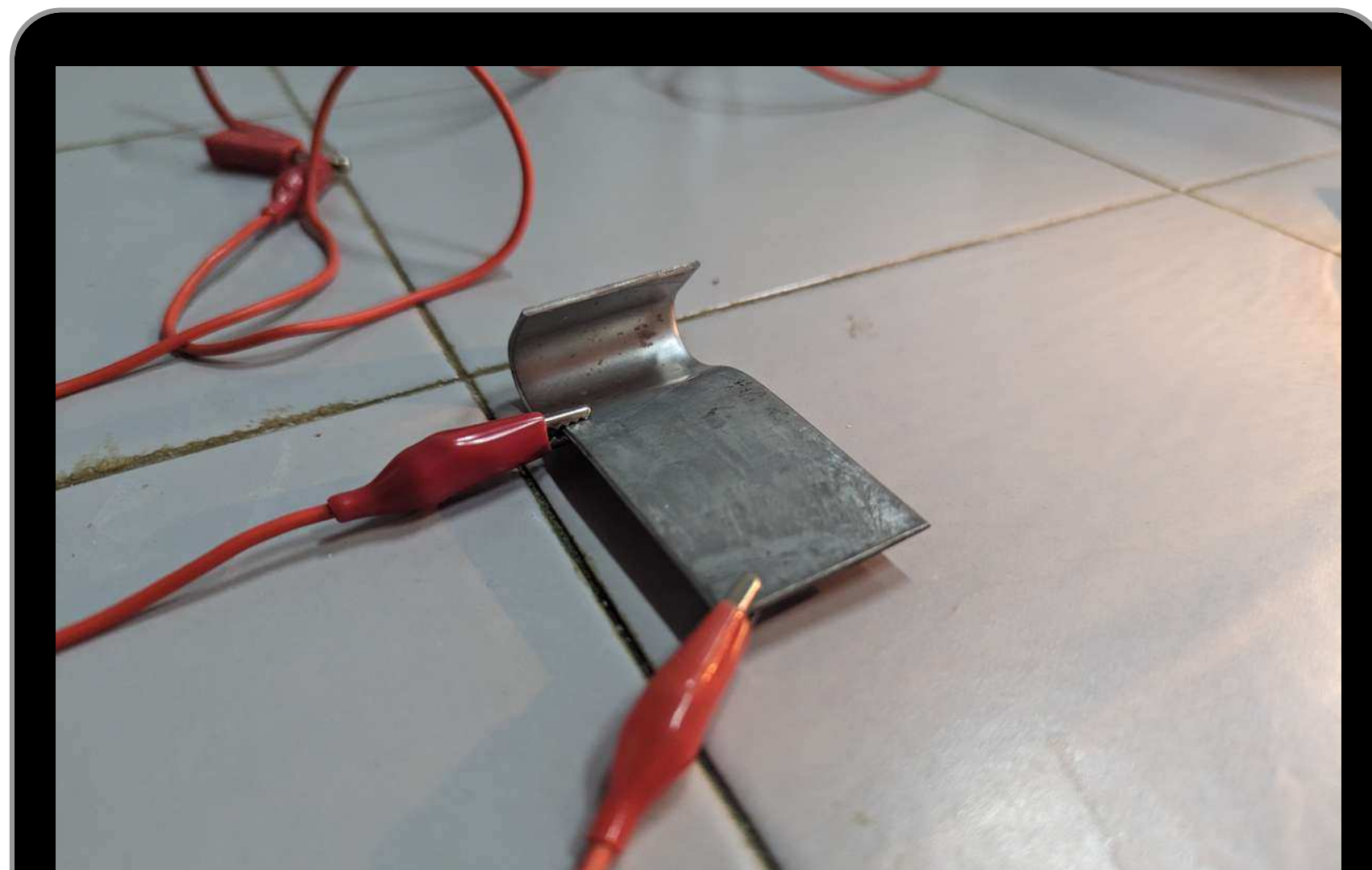
## LAMPADINA ACCESA





# SOSTANZA

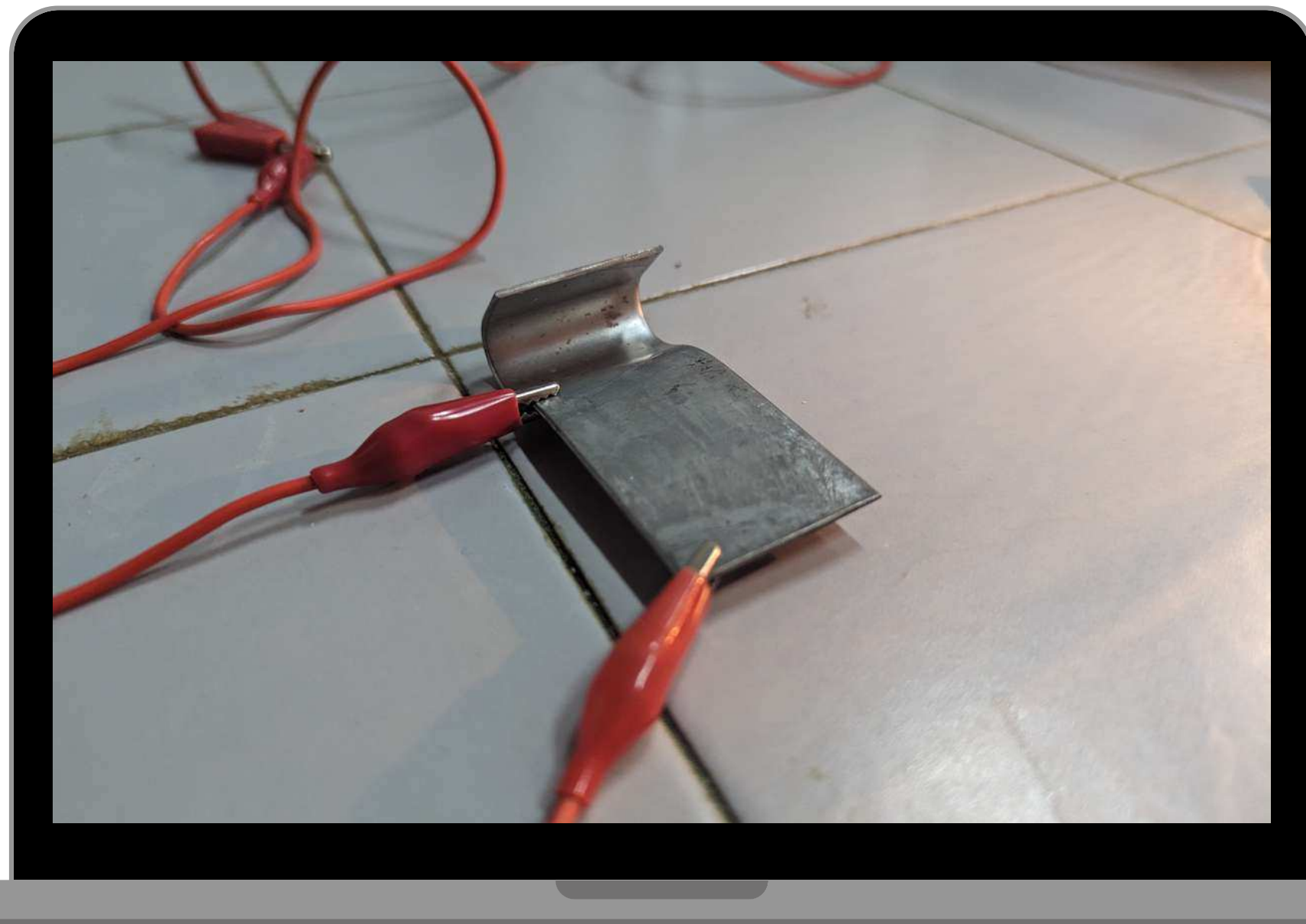
Zinco (Zn)





# LEGAME

## Metallico

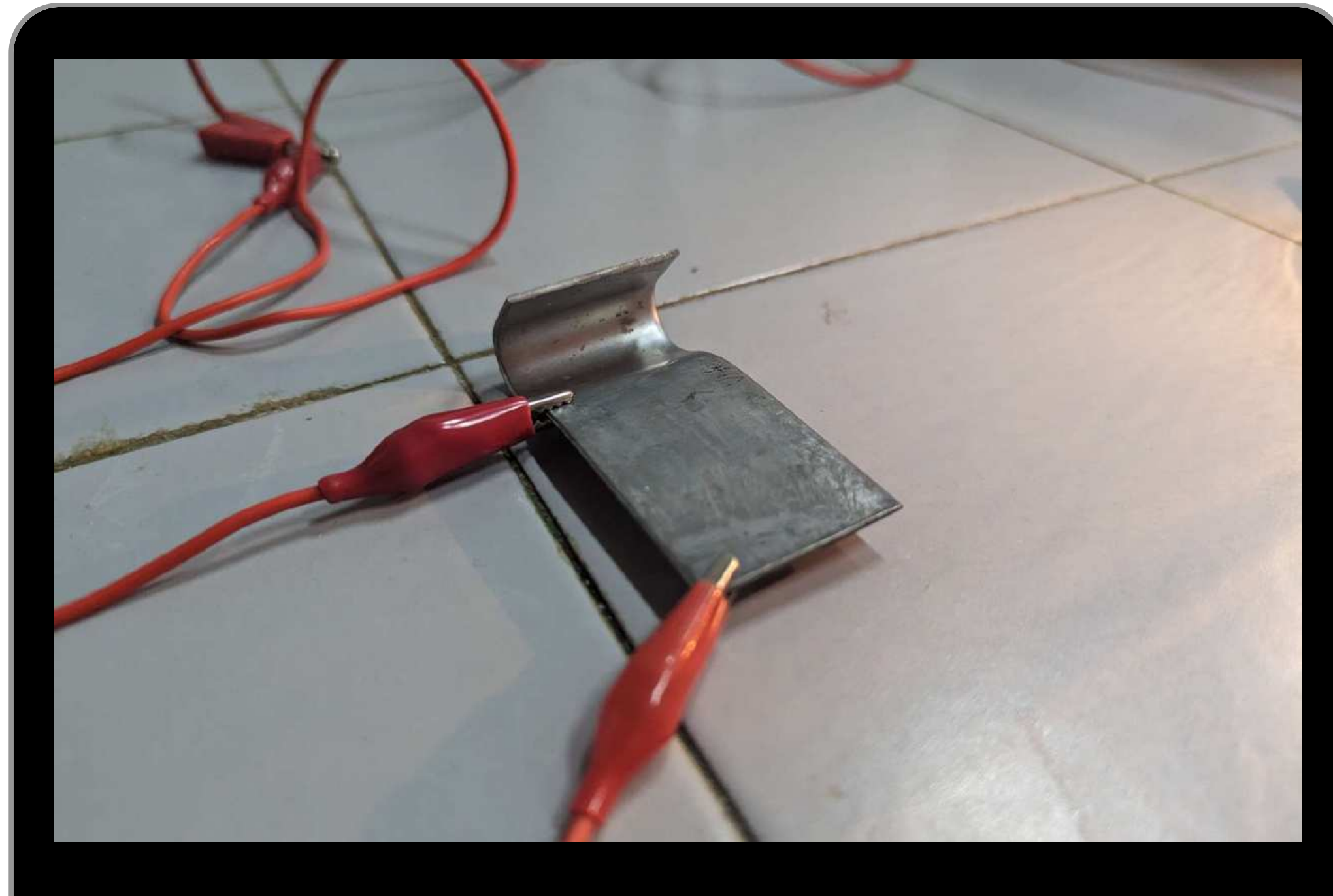




# CONDUCE?

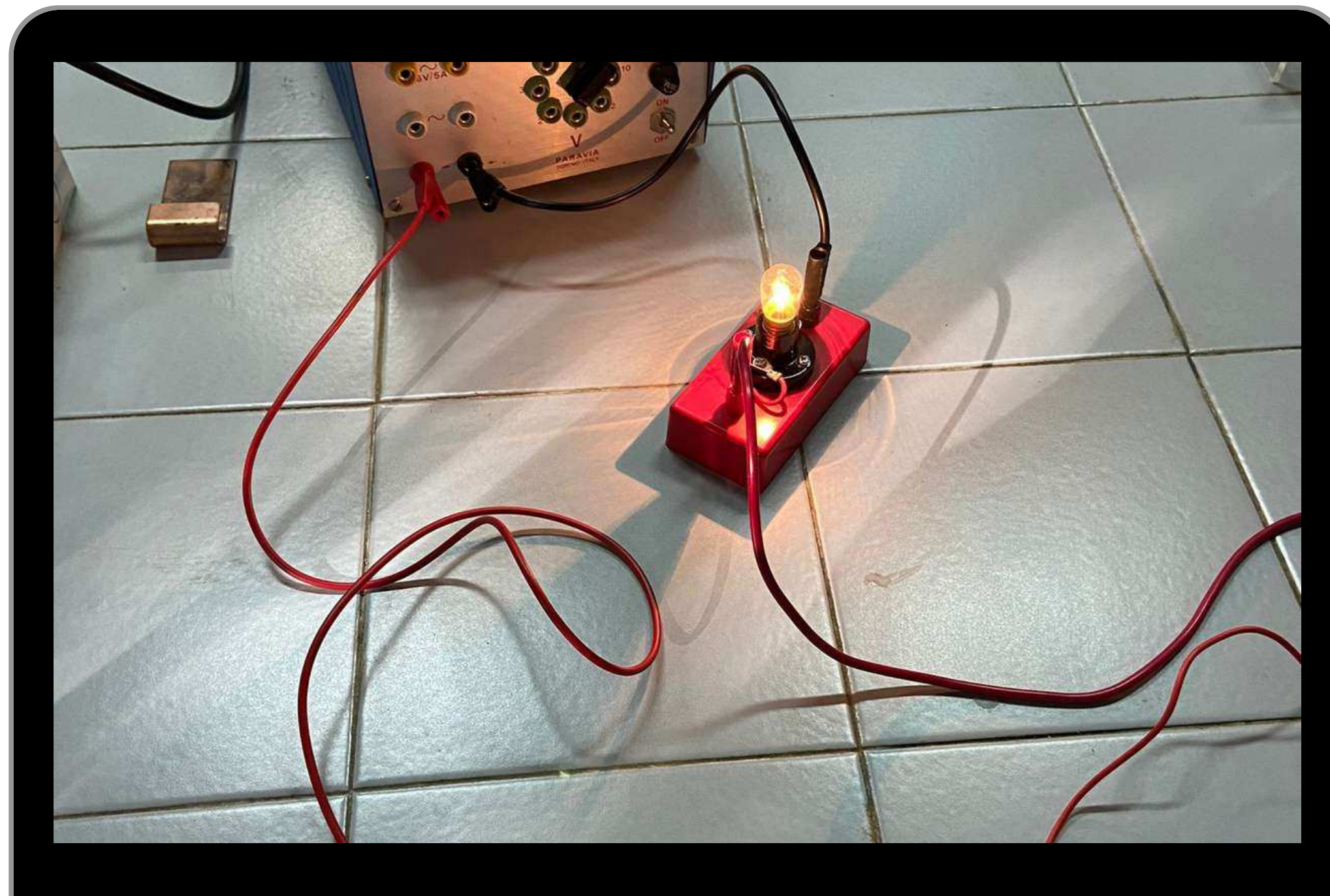
## Si

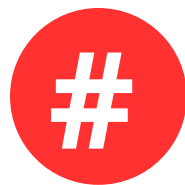






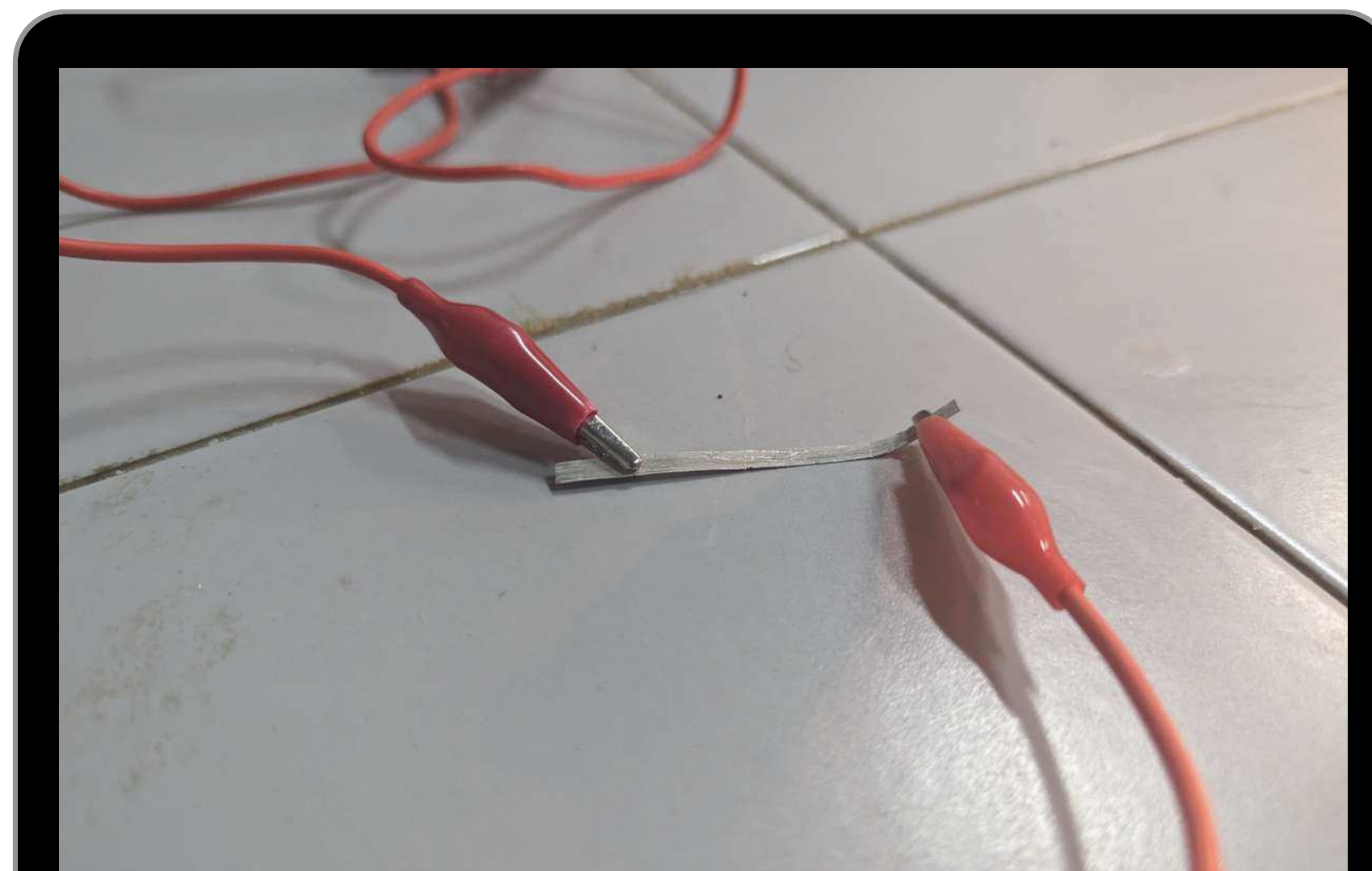
## LAMPADINA ACCESA





# SOSTANZA

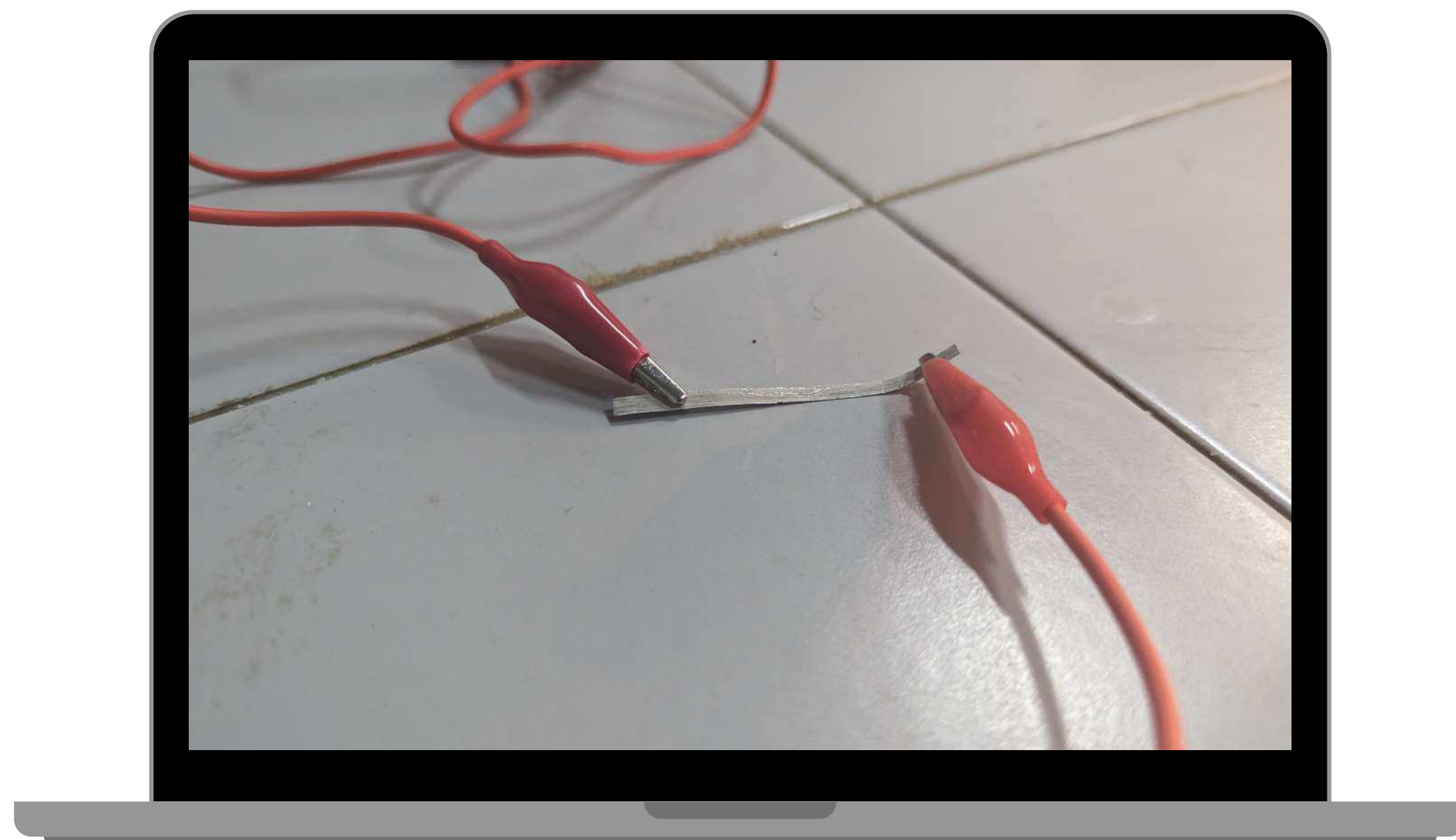
Magnesio (Mg)



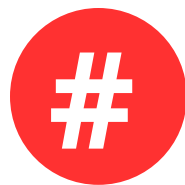


# LEGAME

## Metallico

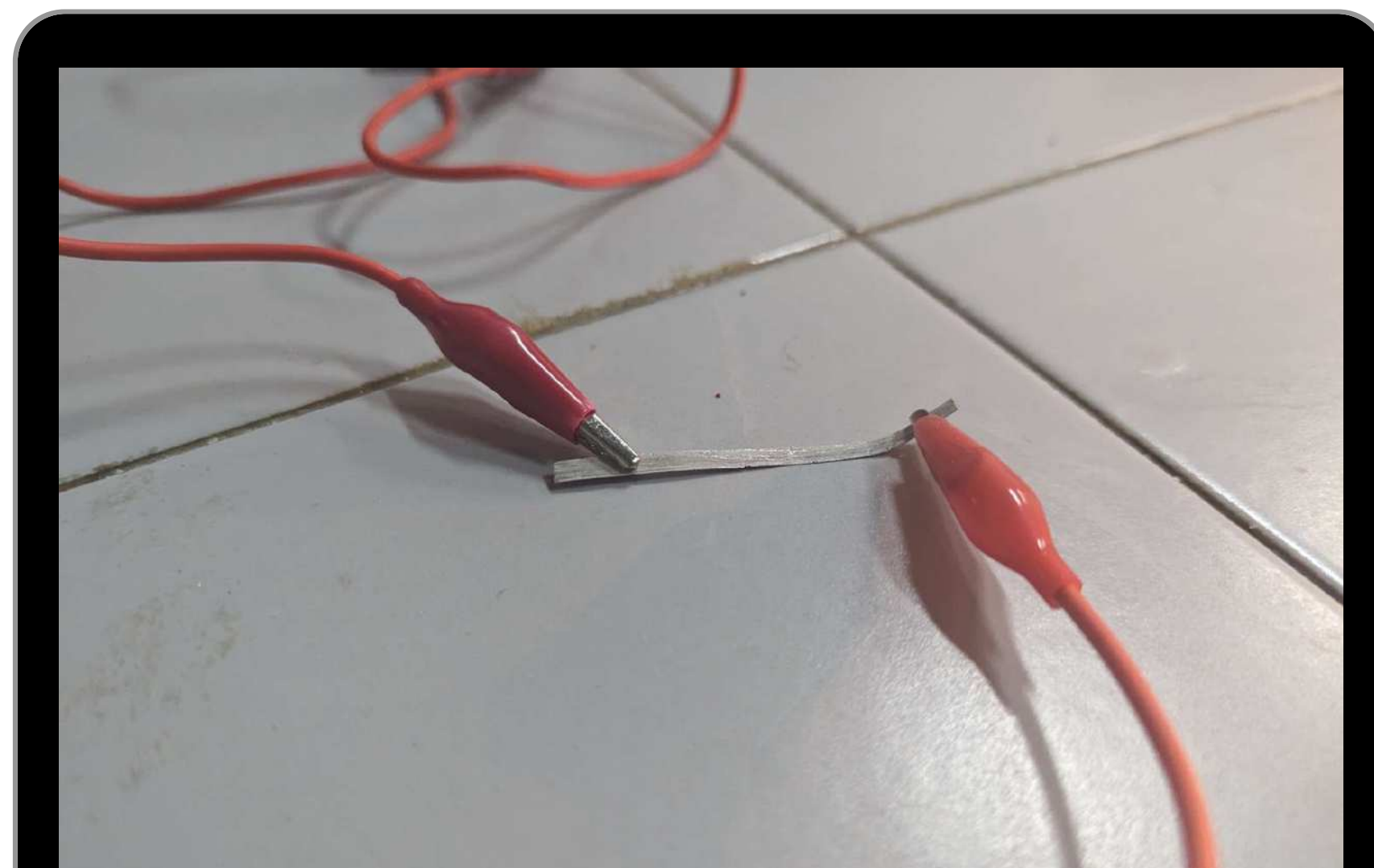


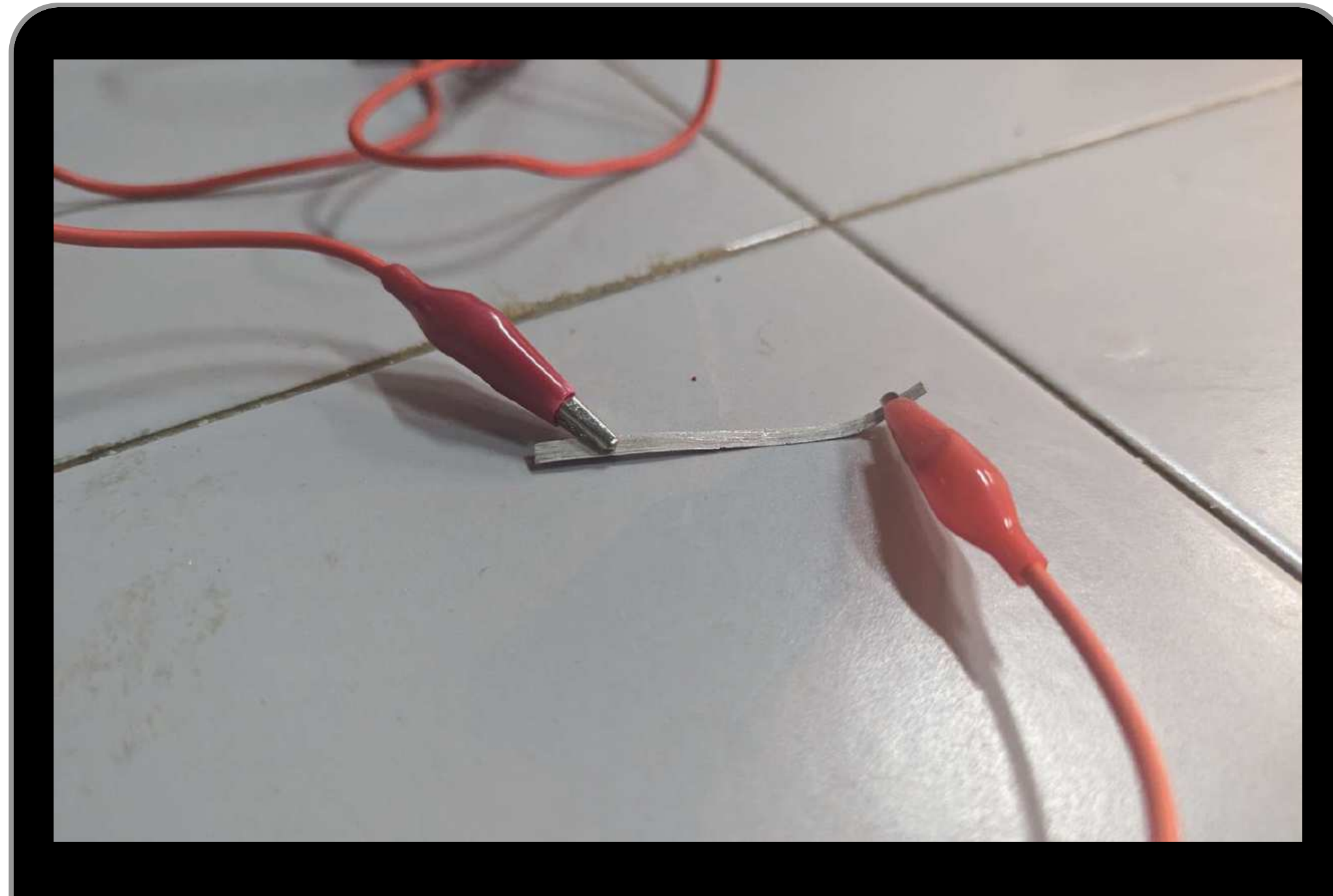




# CONDUCE?

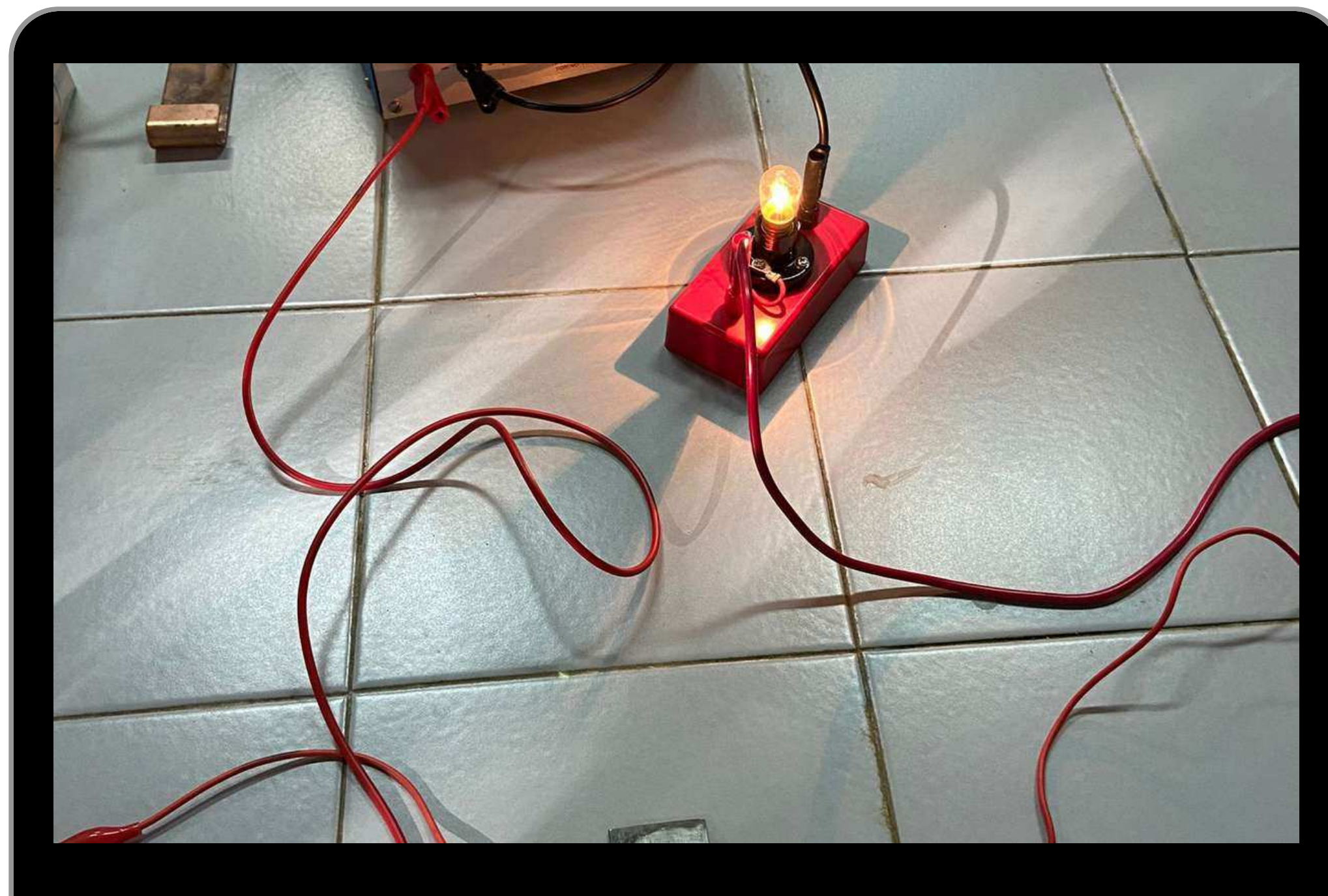
## Sì







## LAMPADINA ACCESA

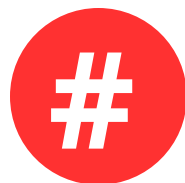




# SOSTANZA

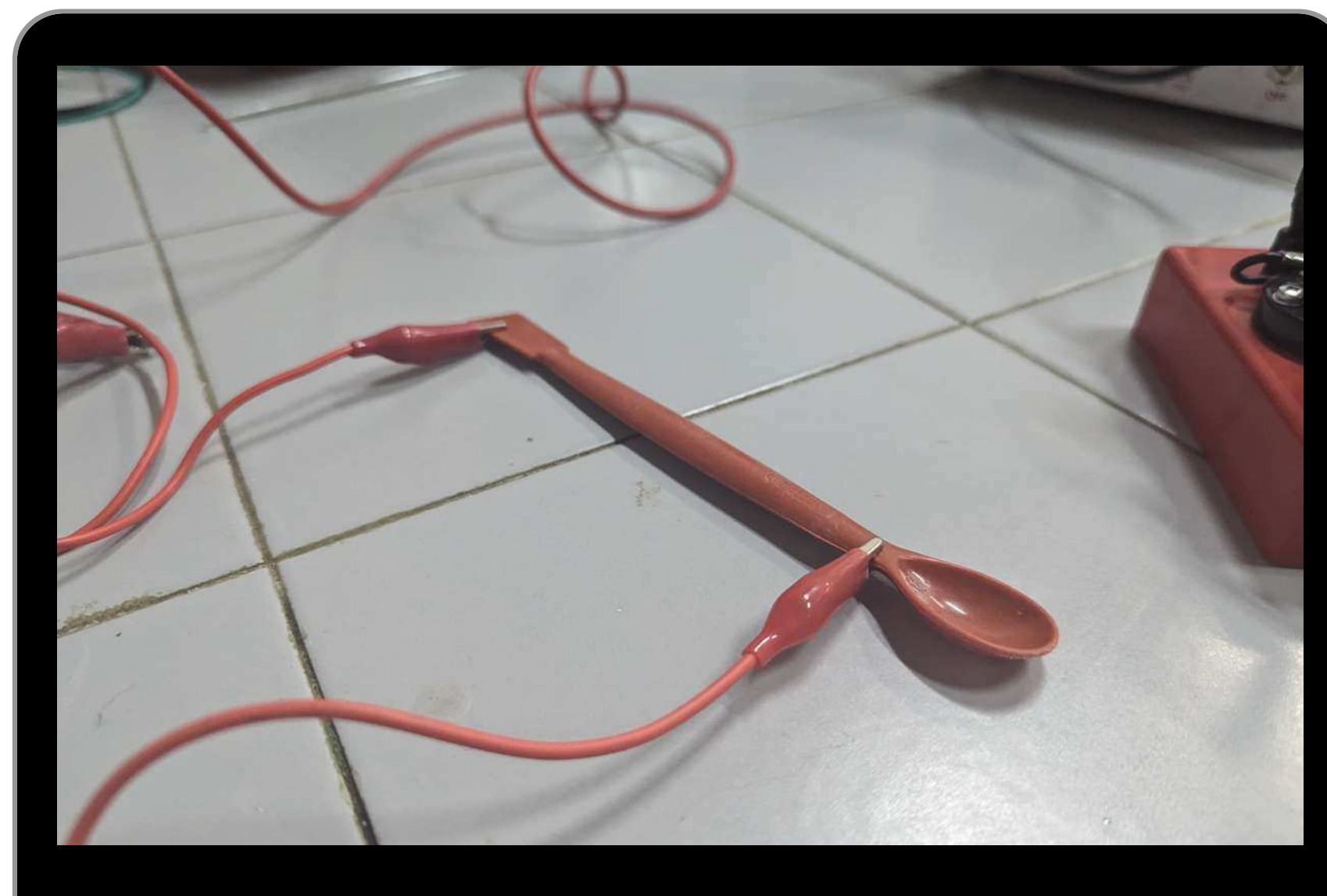
## Spatola (Plastica)

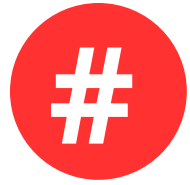




# LEGAME

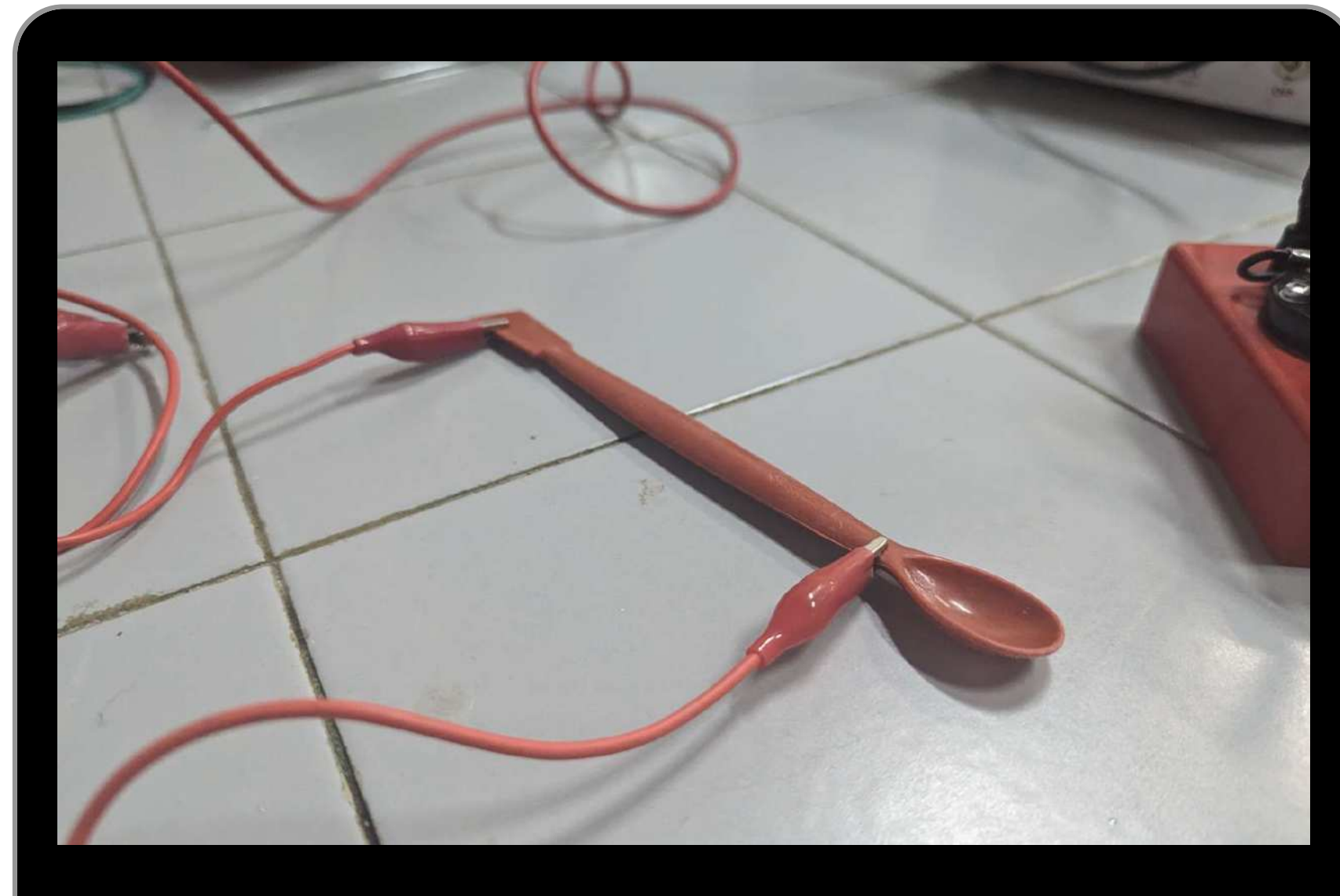
## Covalente Polare

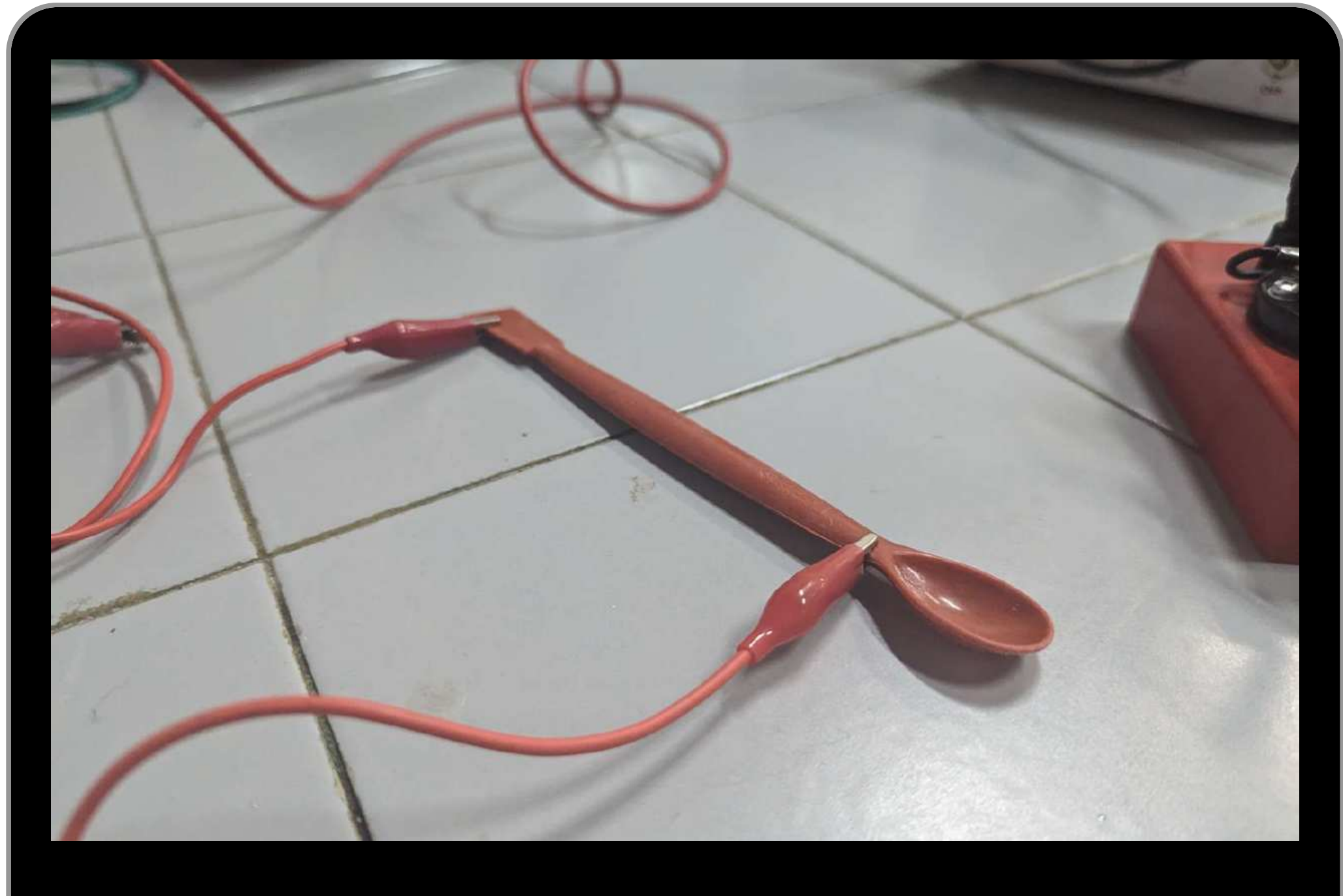


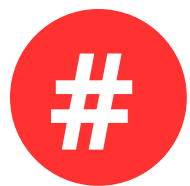


# CONDUCE?

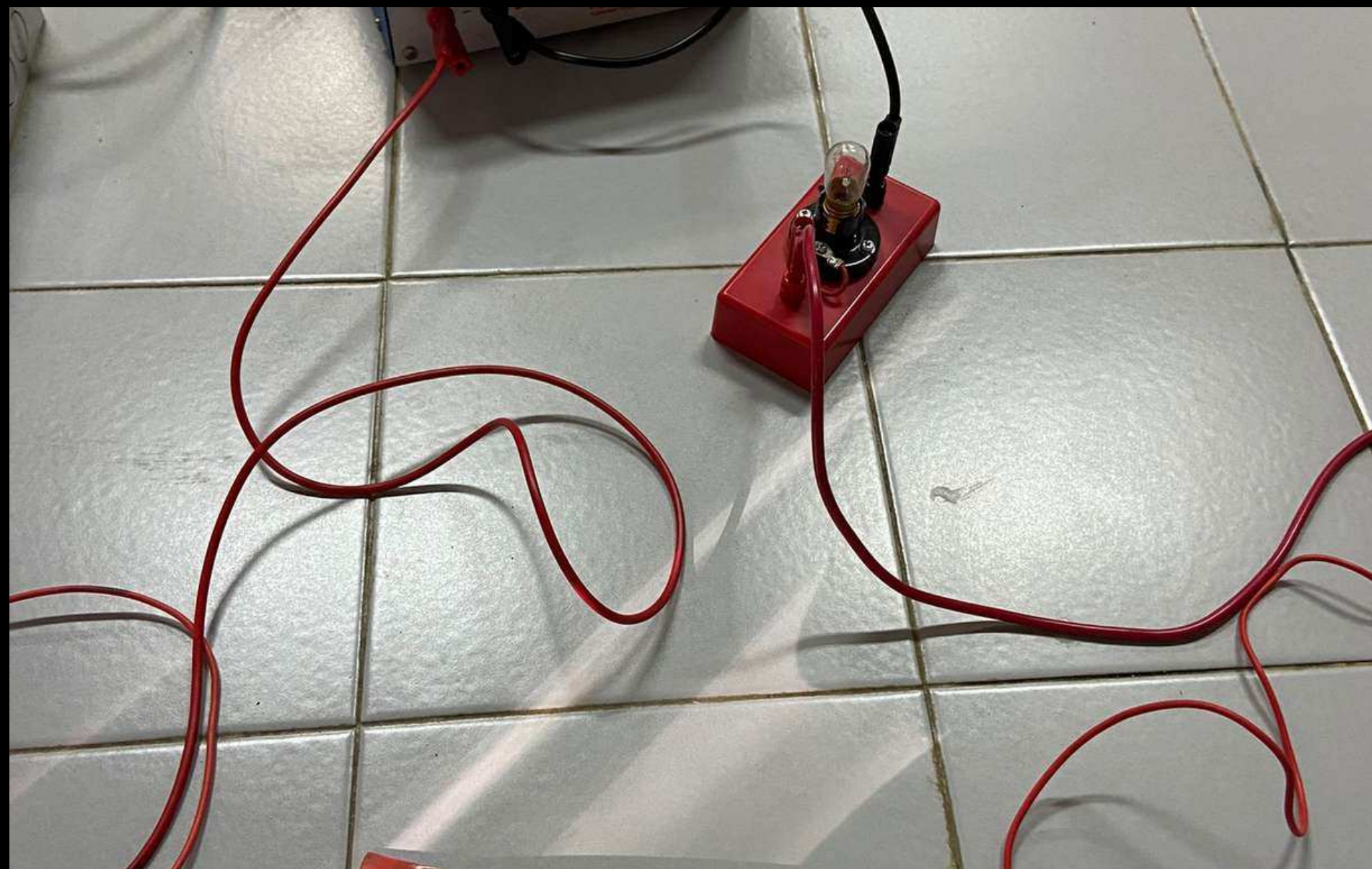
No







 LAMPADINA SPENTA

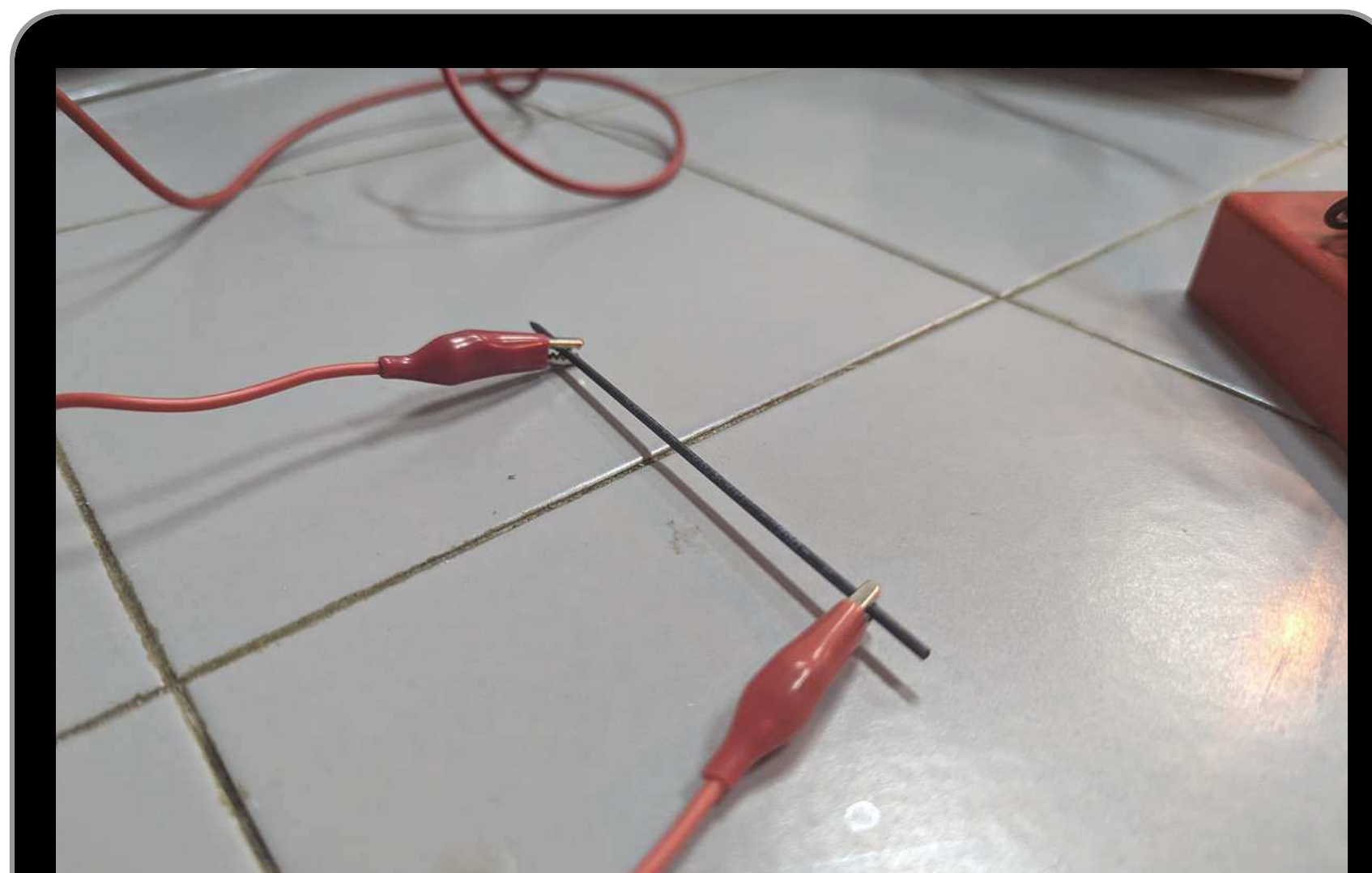


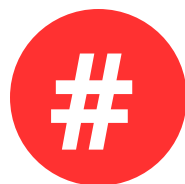




# SOSTANZA

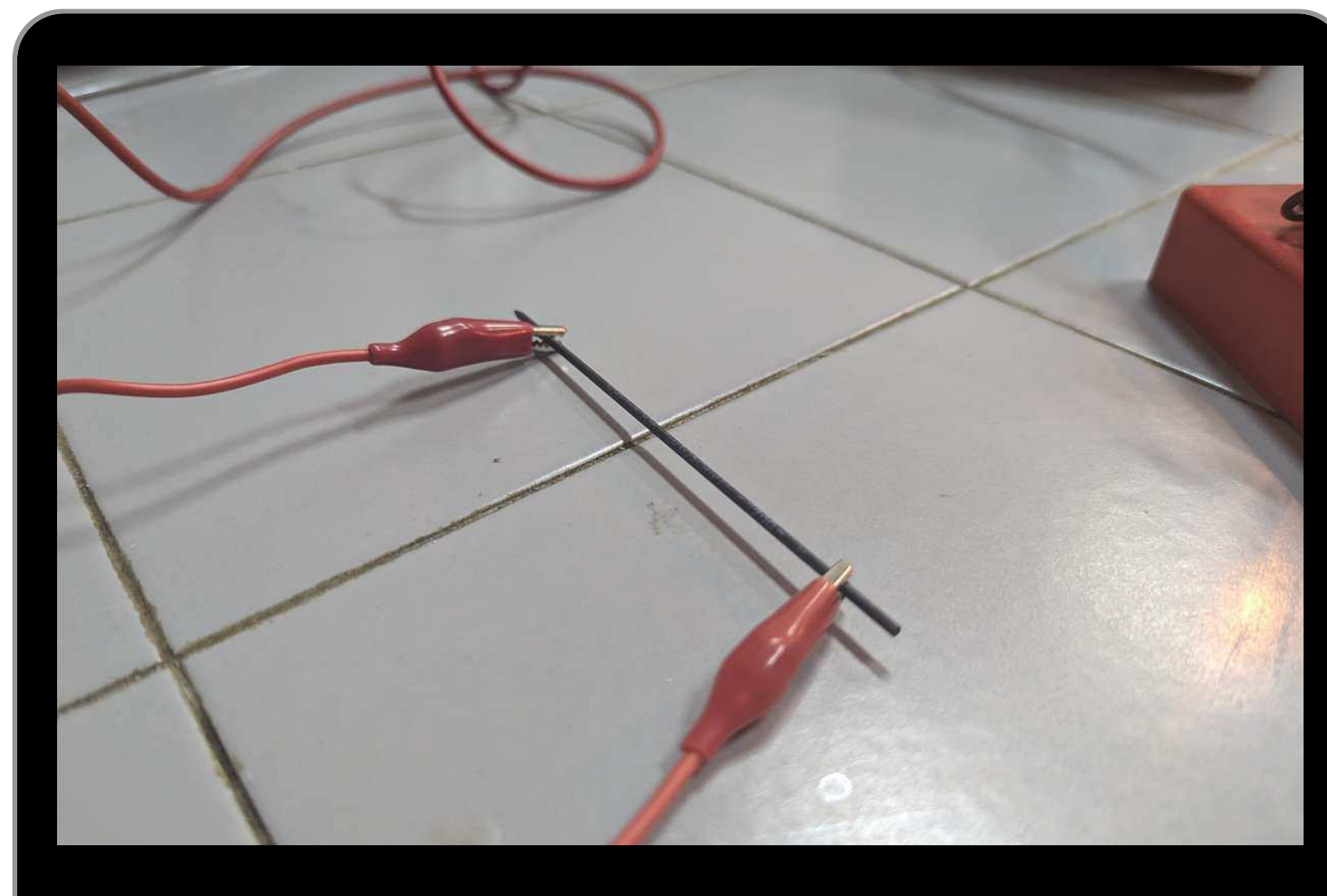
## Grafite





# LEGAME

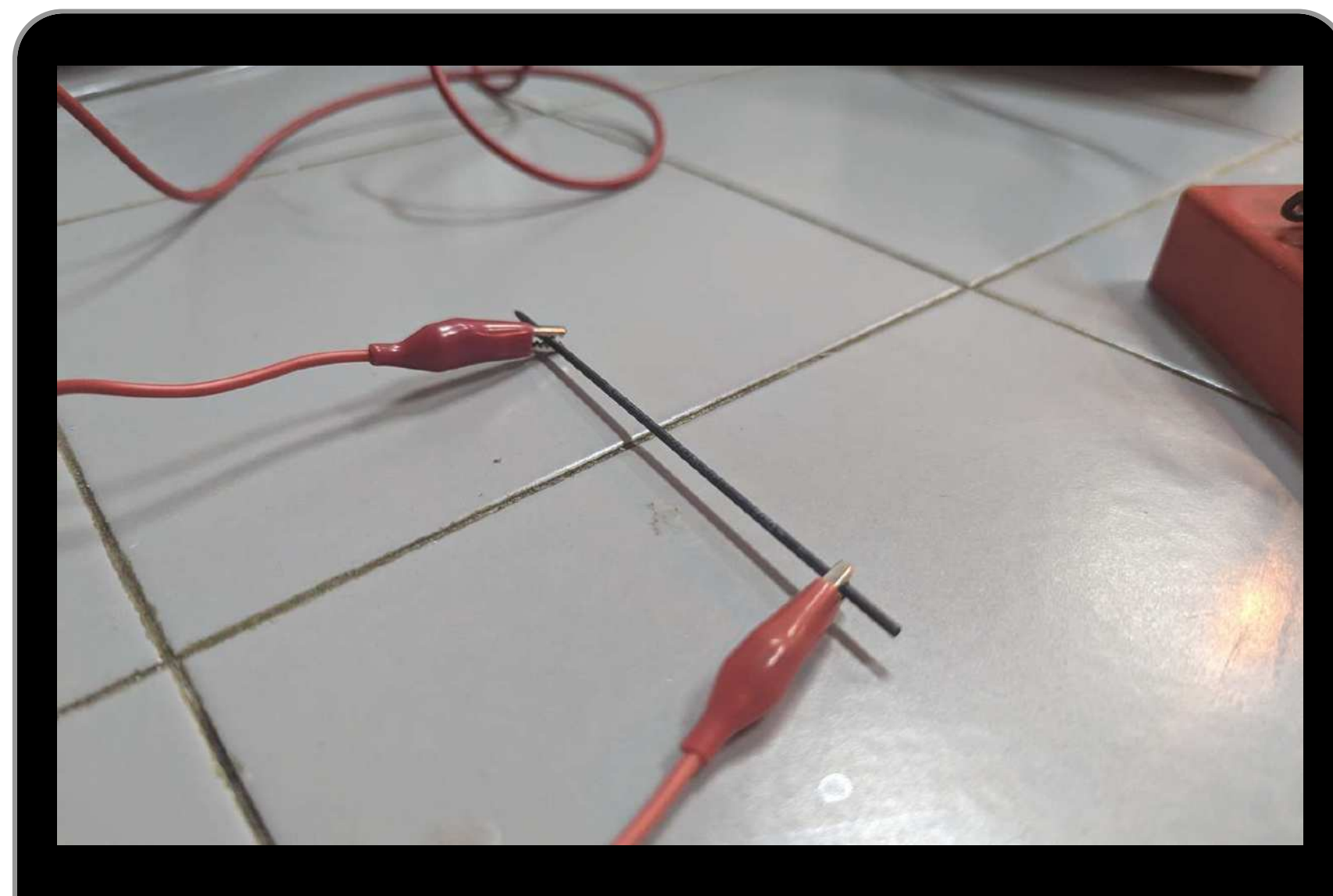
## Covalente Puro

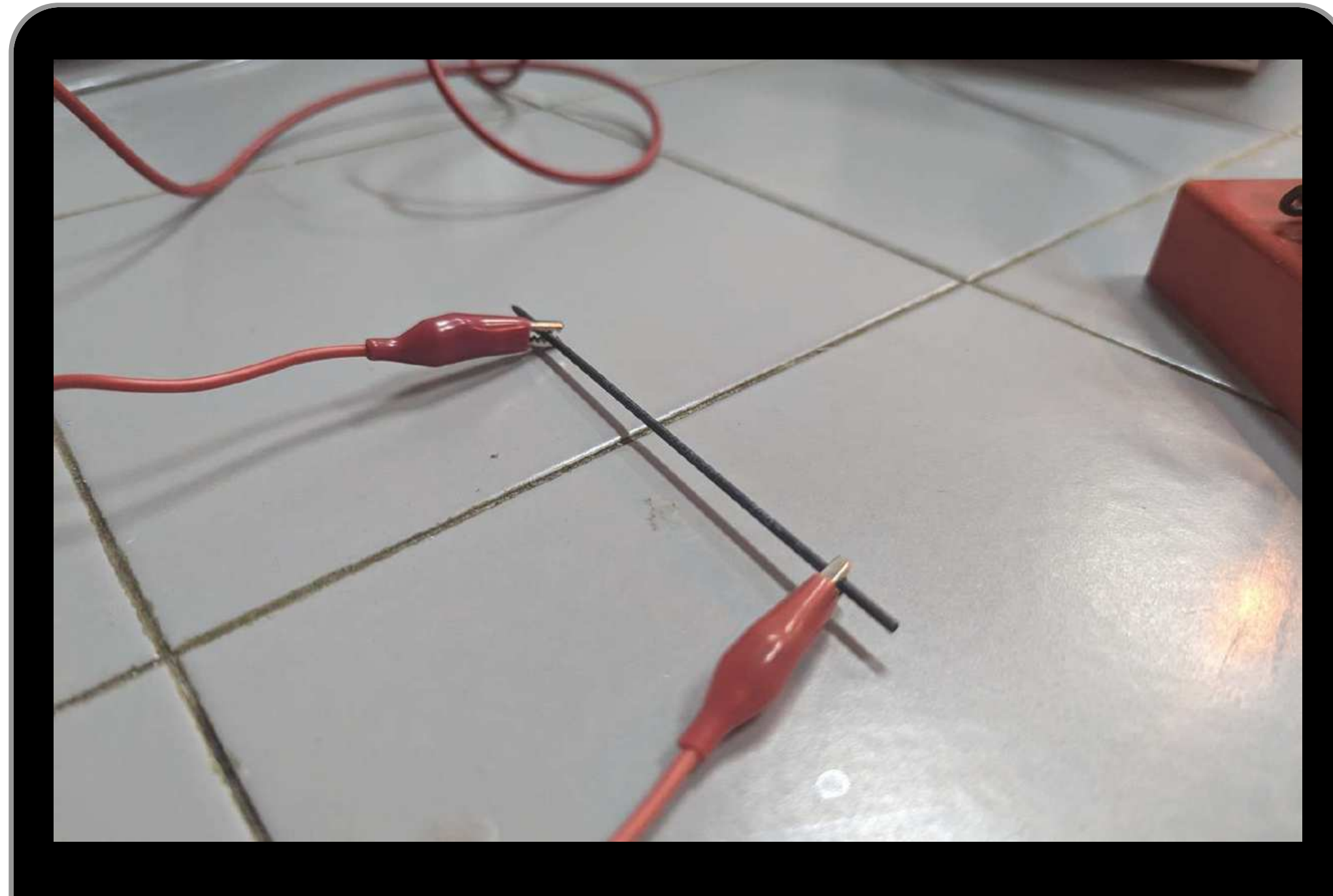




# CONDUCE?

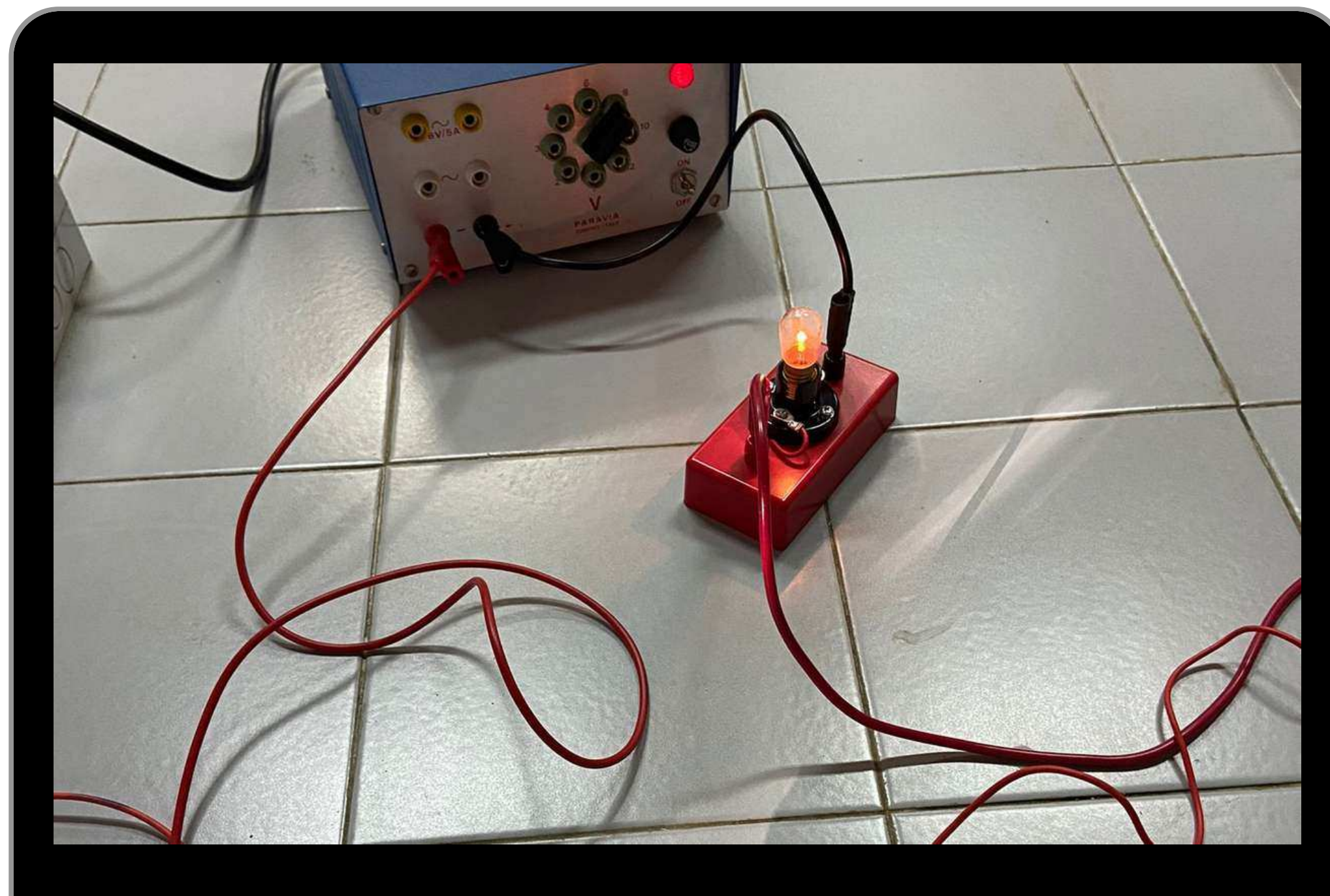
## Sì







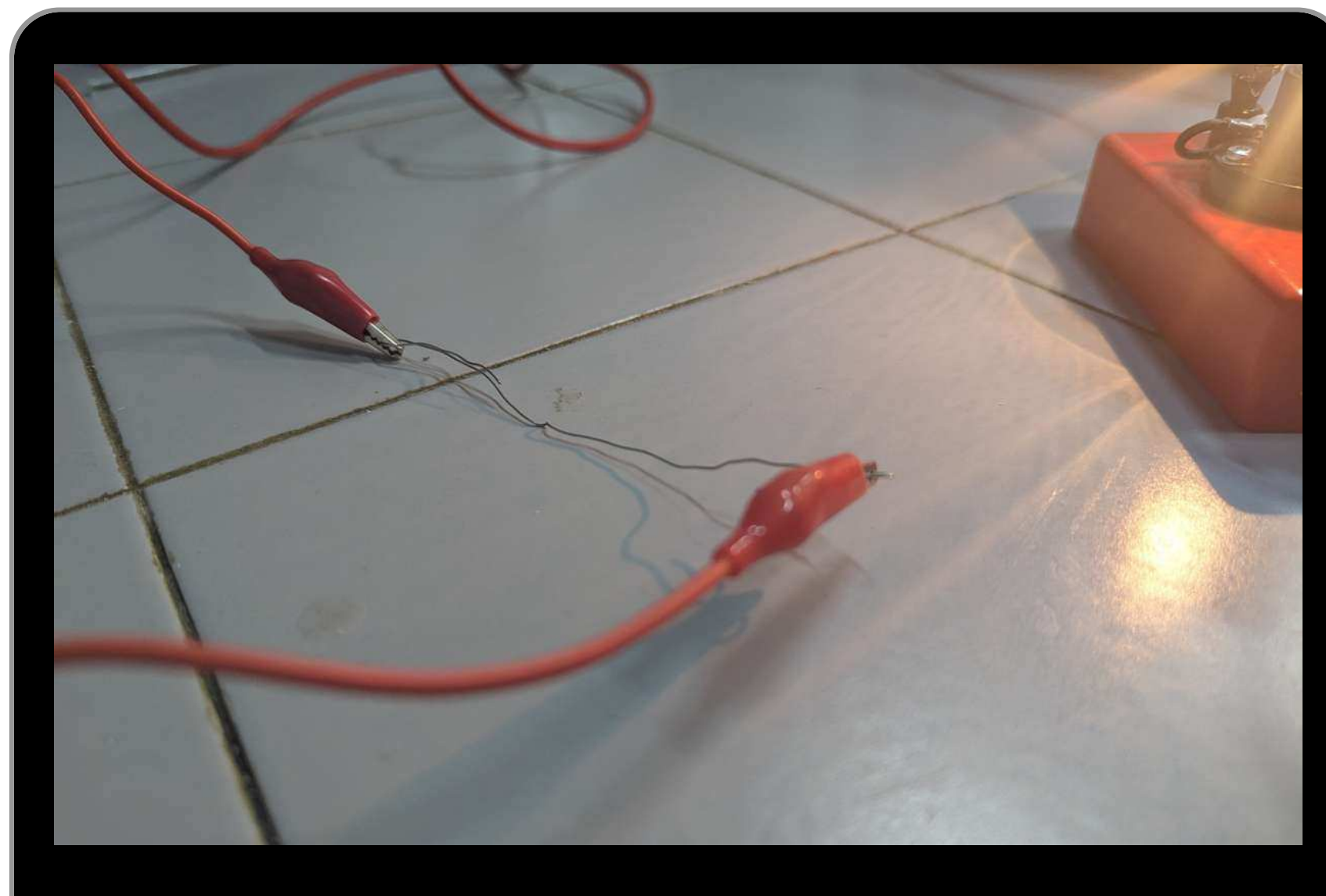
## LAMPADINA ACCESA





# SOSTANZA

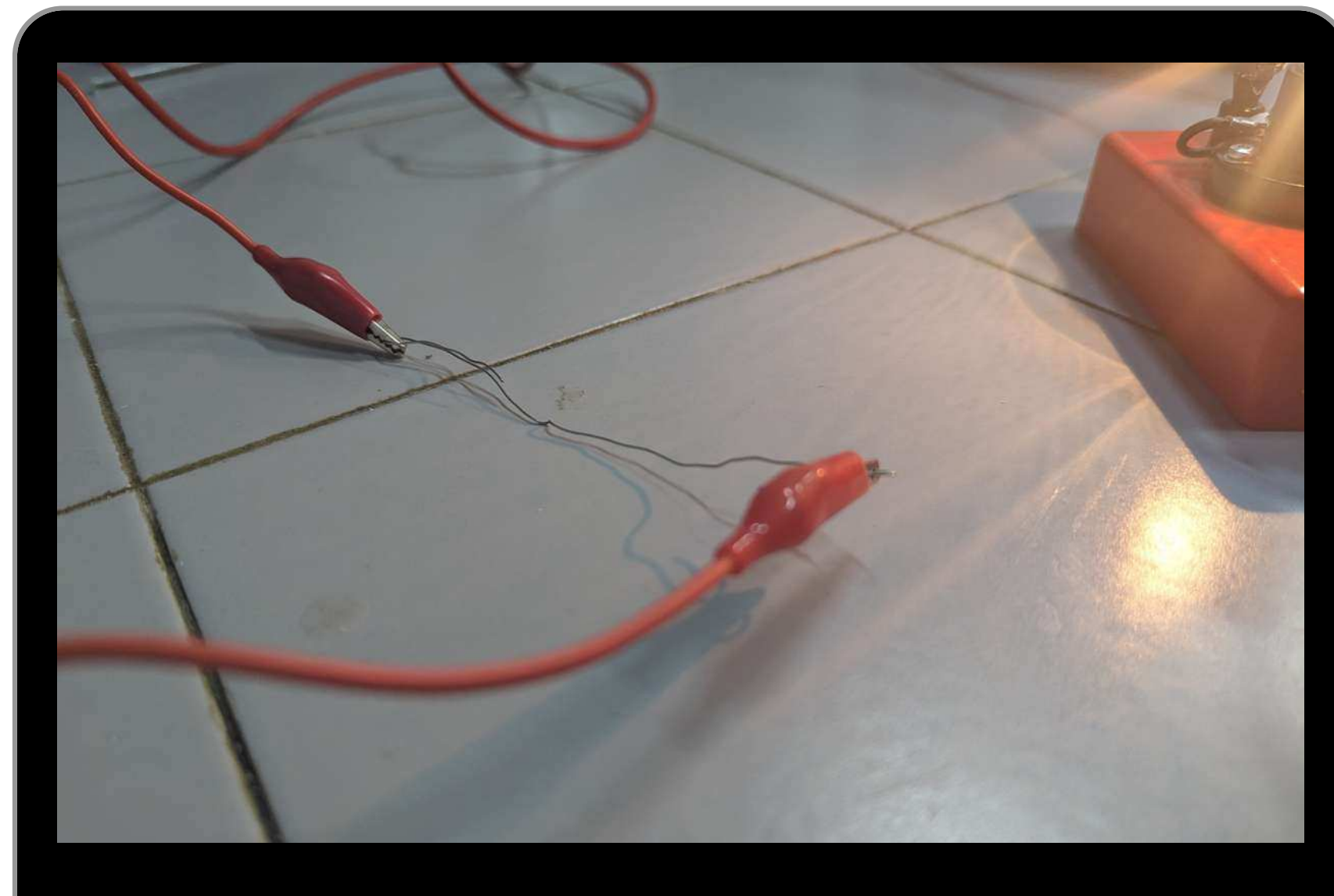
## Filo Nichel-Cromo





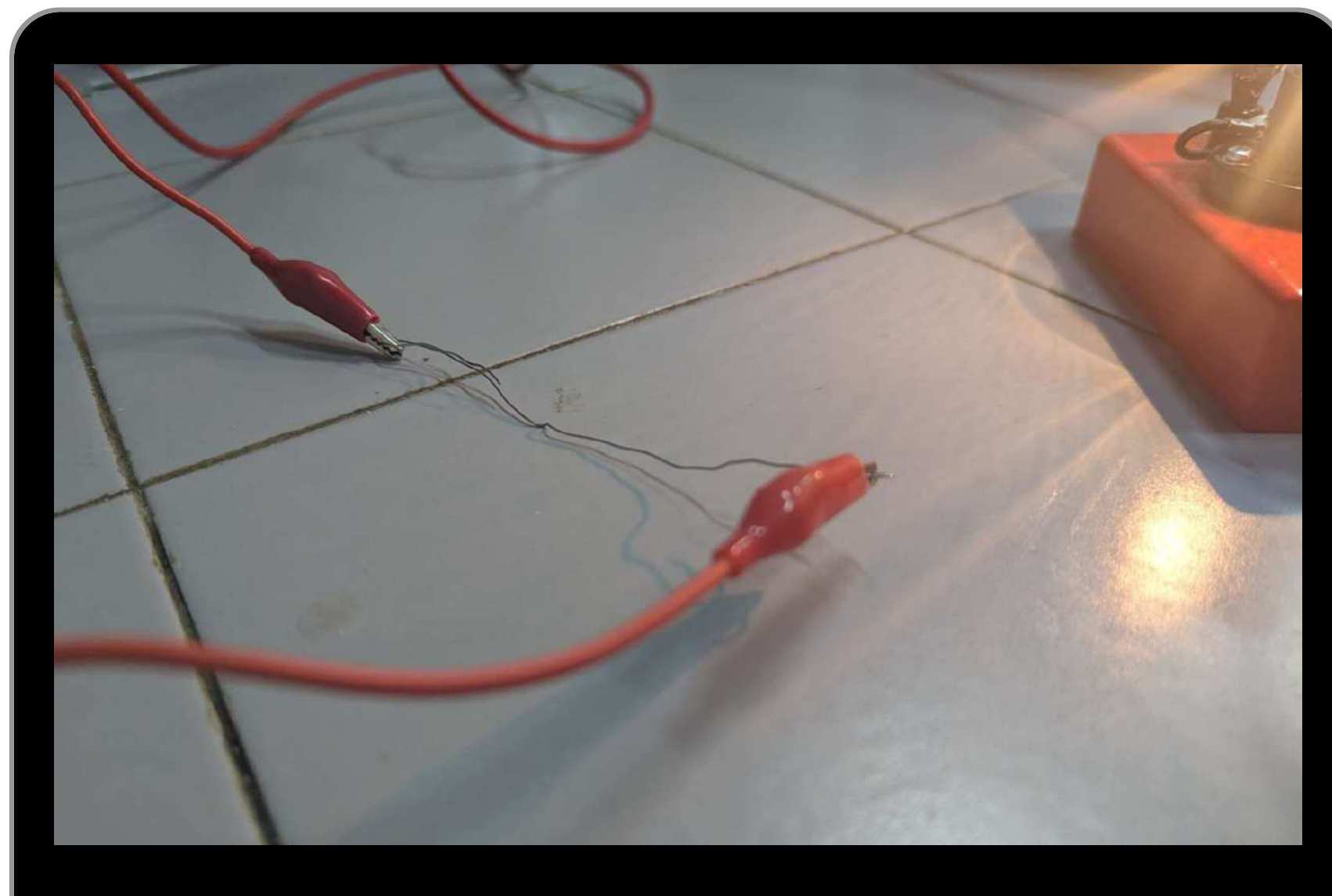
# LEGAME

## Metallico

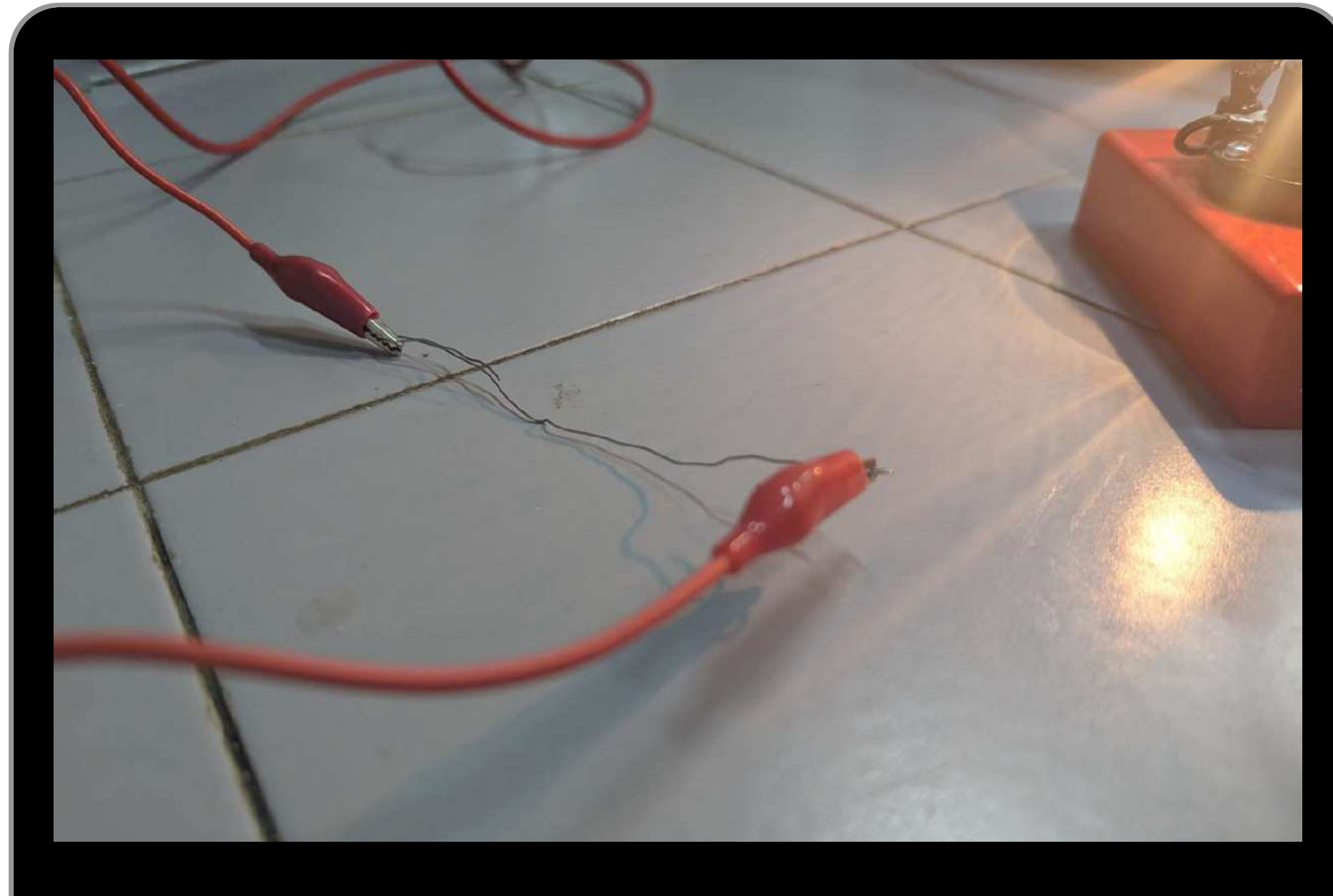


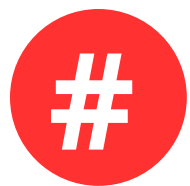


# CONDUCE? Sì

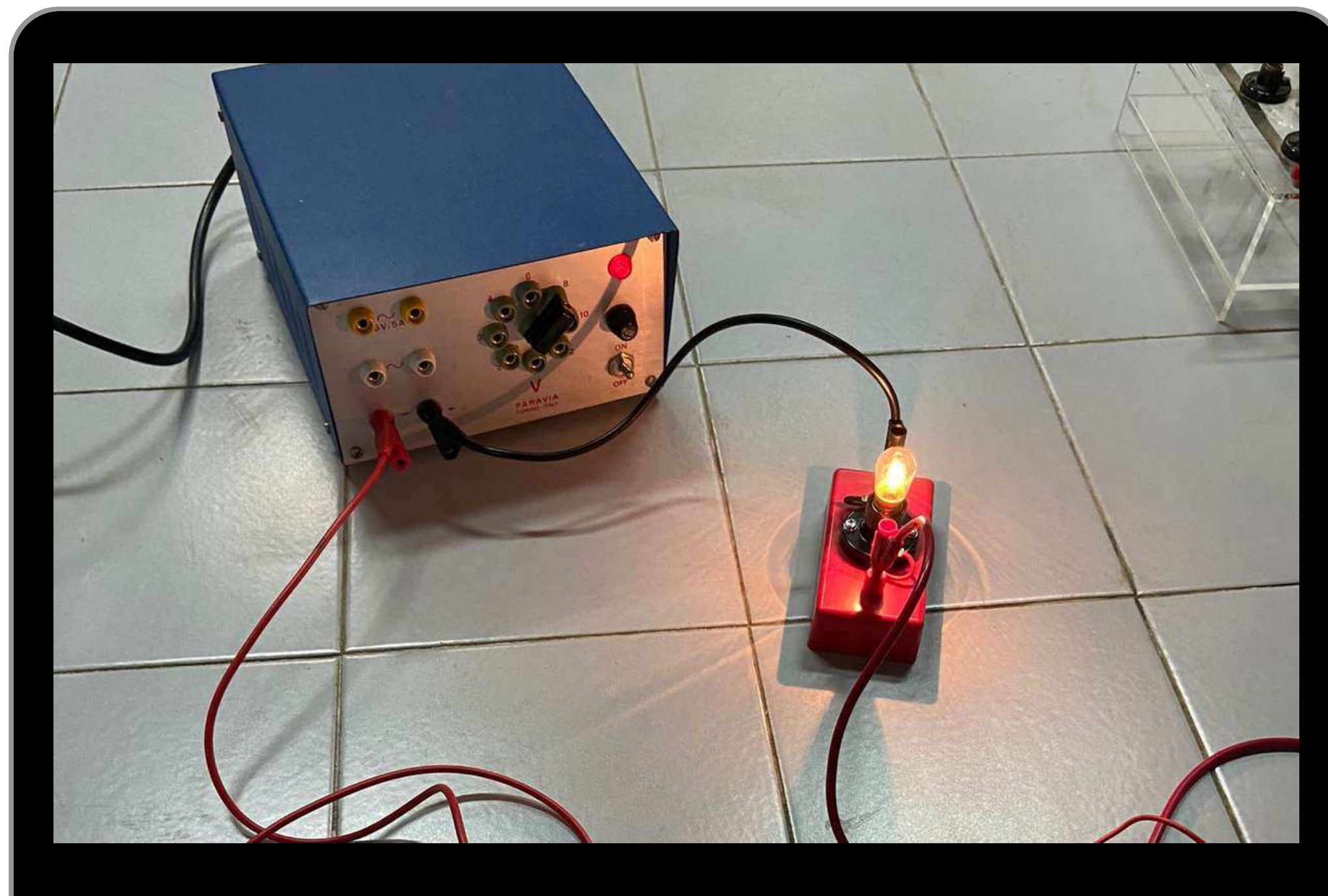


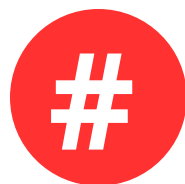






## LAMPADINA ACCESA





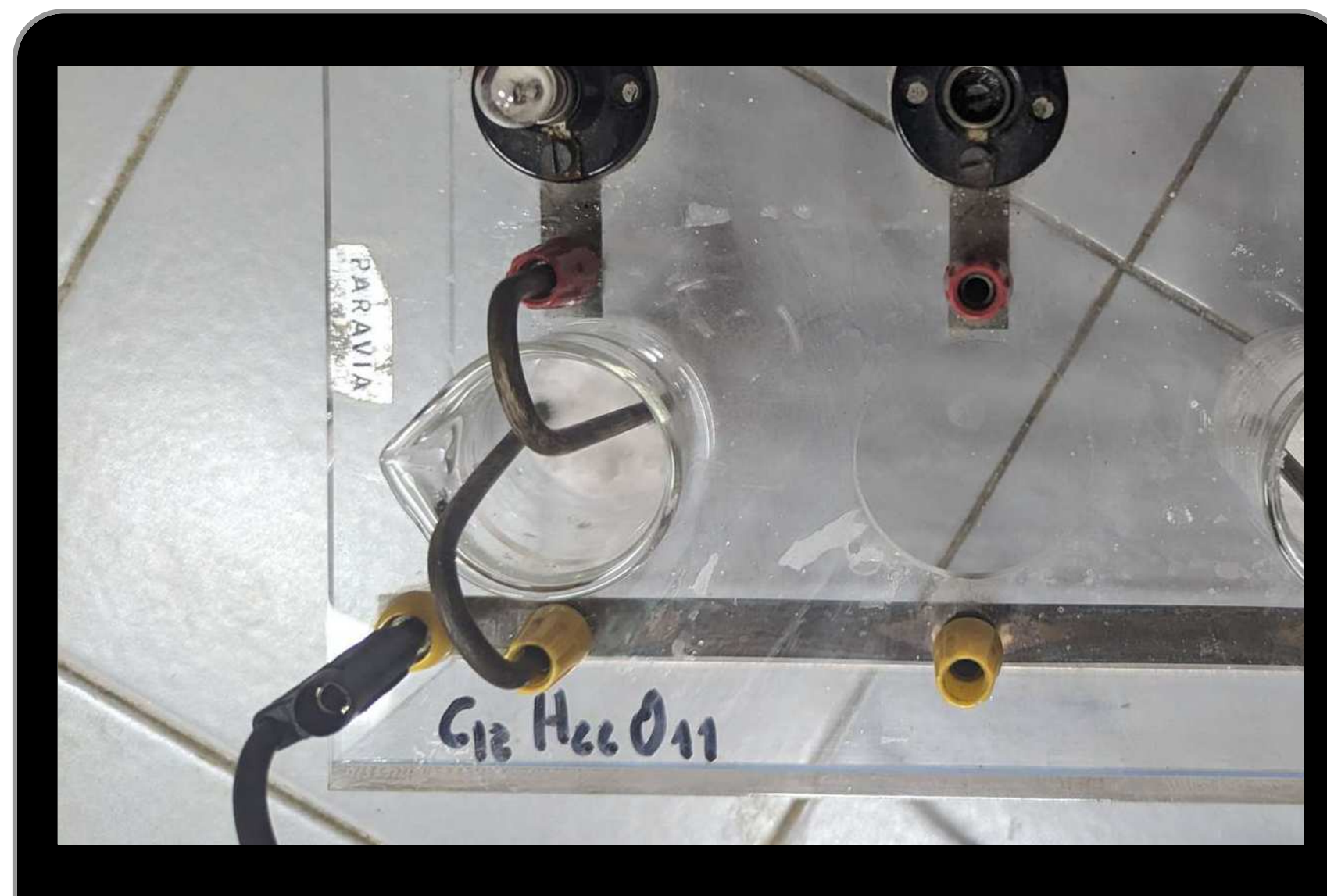
# SOSTANZA

Saccarosio (Solido)





# LEGAME Glicosidico

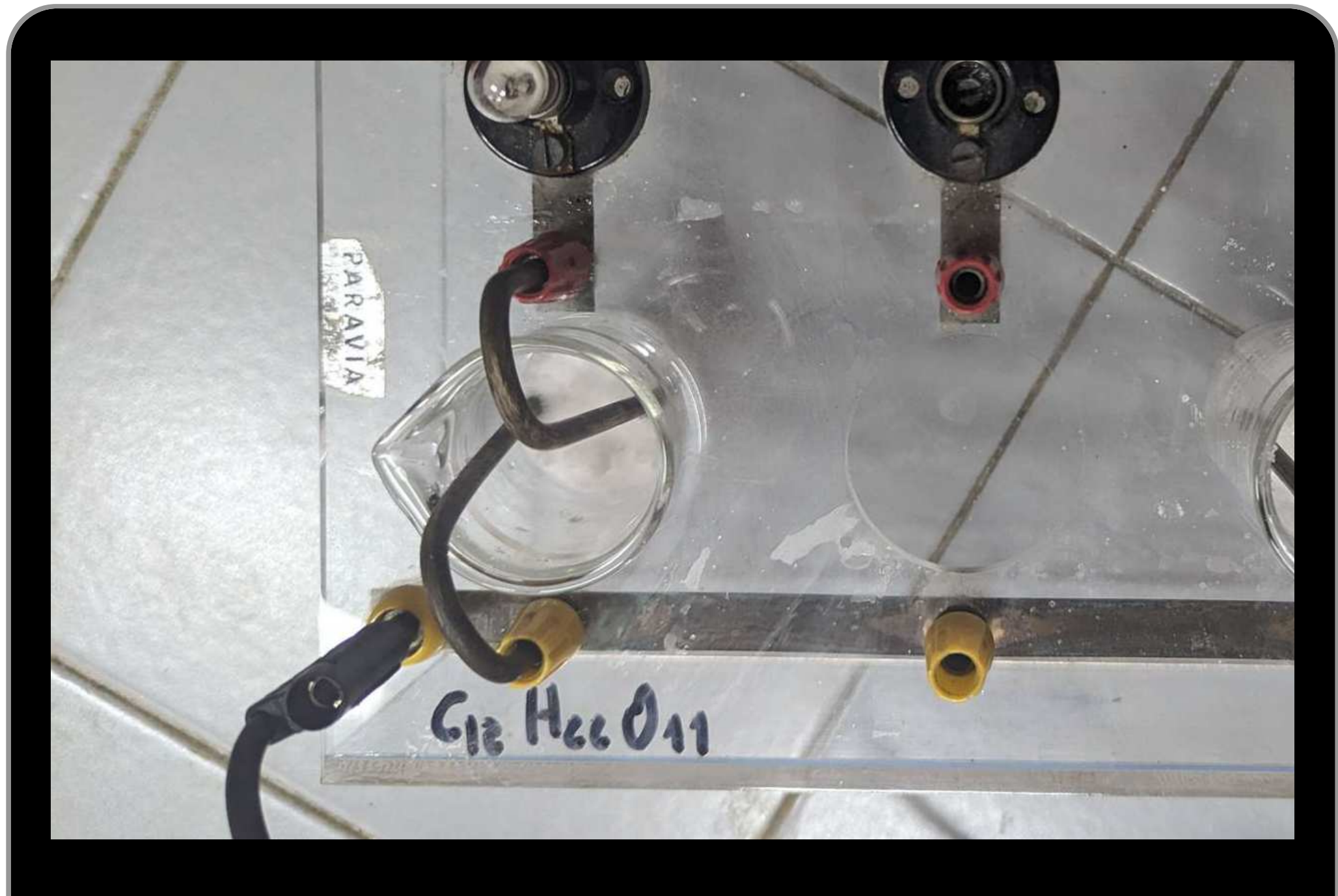


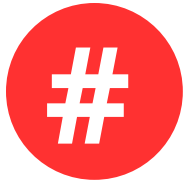


# CONDUCE?

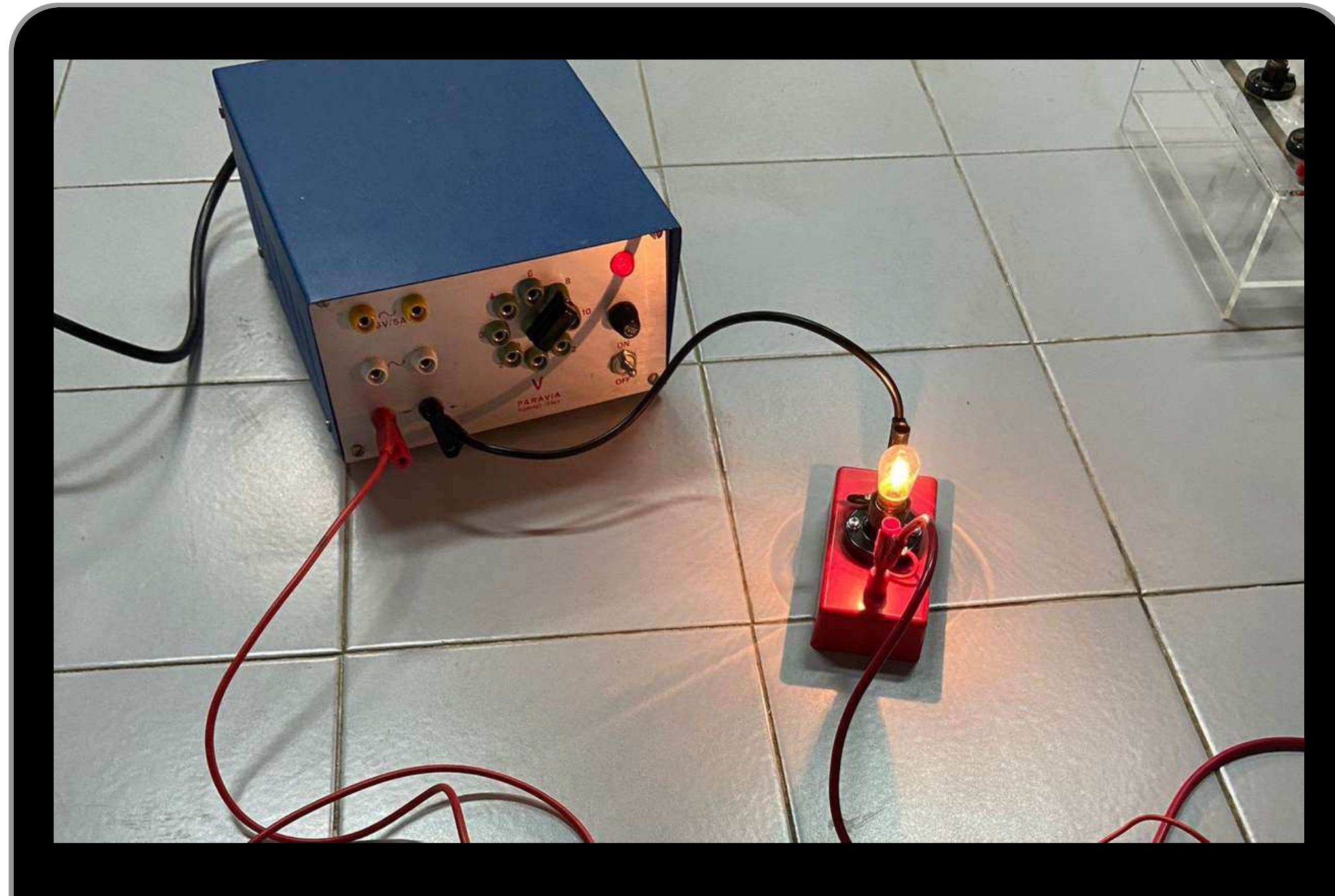
No







 LAMPADINA SPENTA



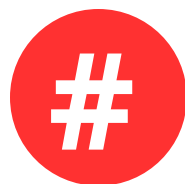


# SOSTANZA

## Saccarosio (In soluzione)







# LEGAME

## Dipolo-Dipolo





# CONDUCE?

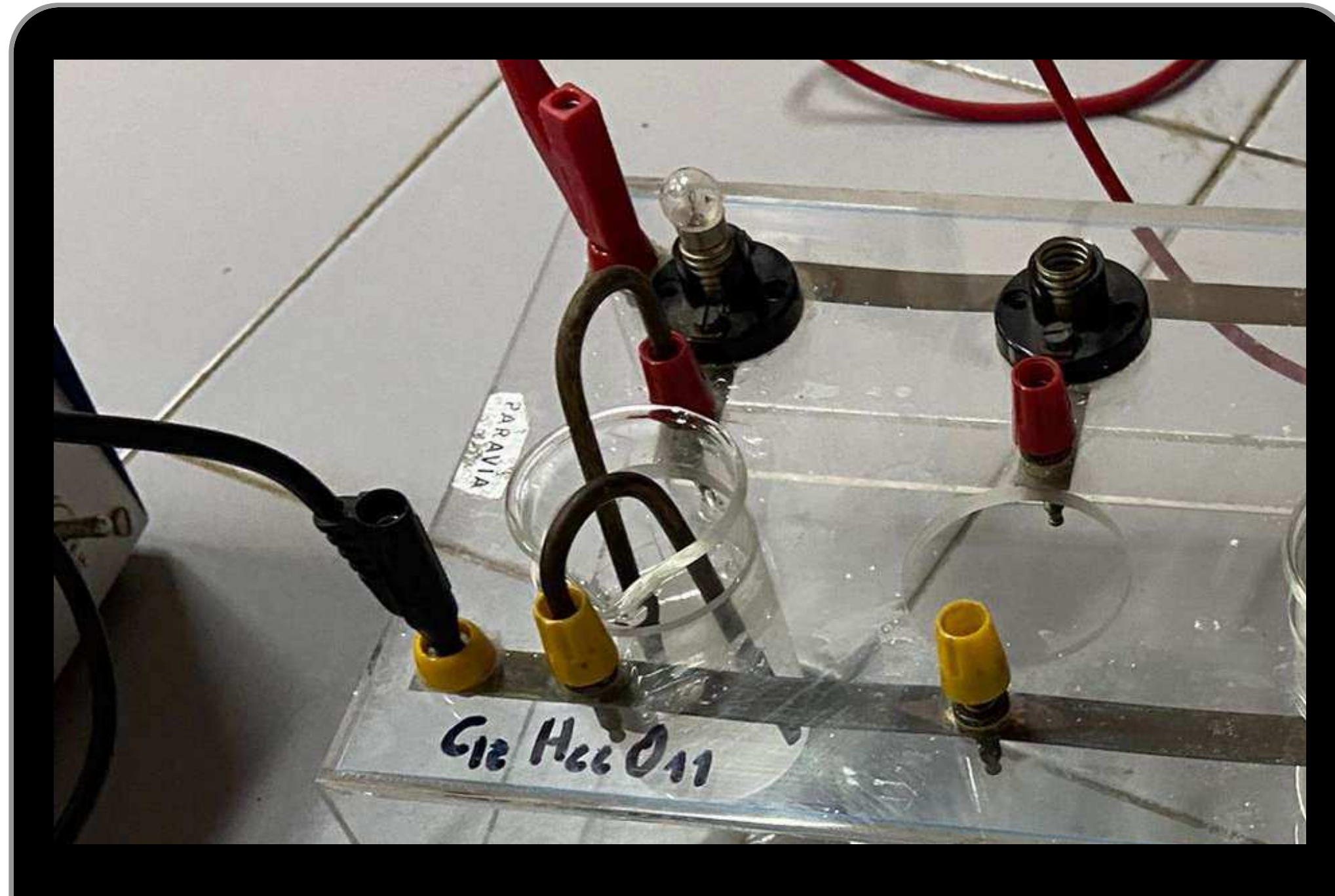
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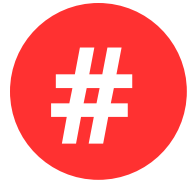






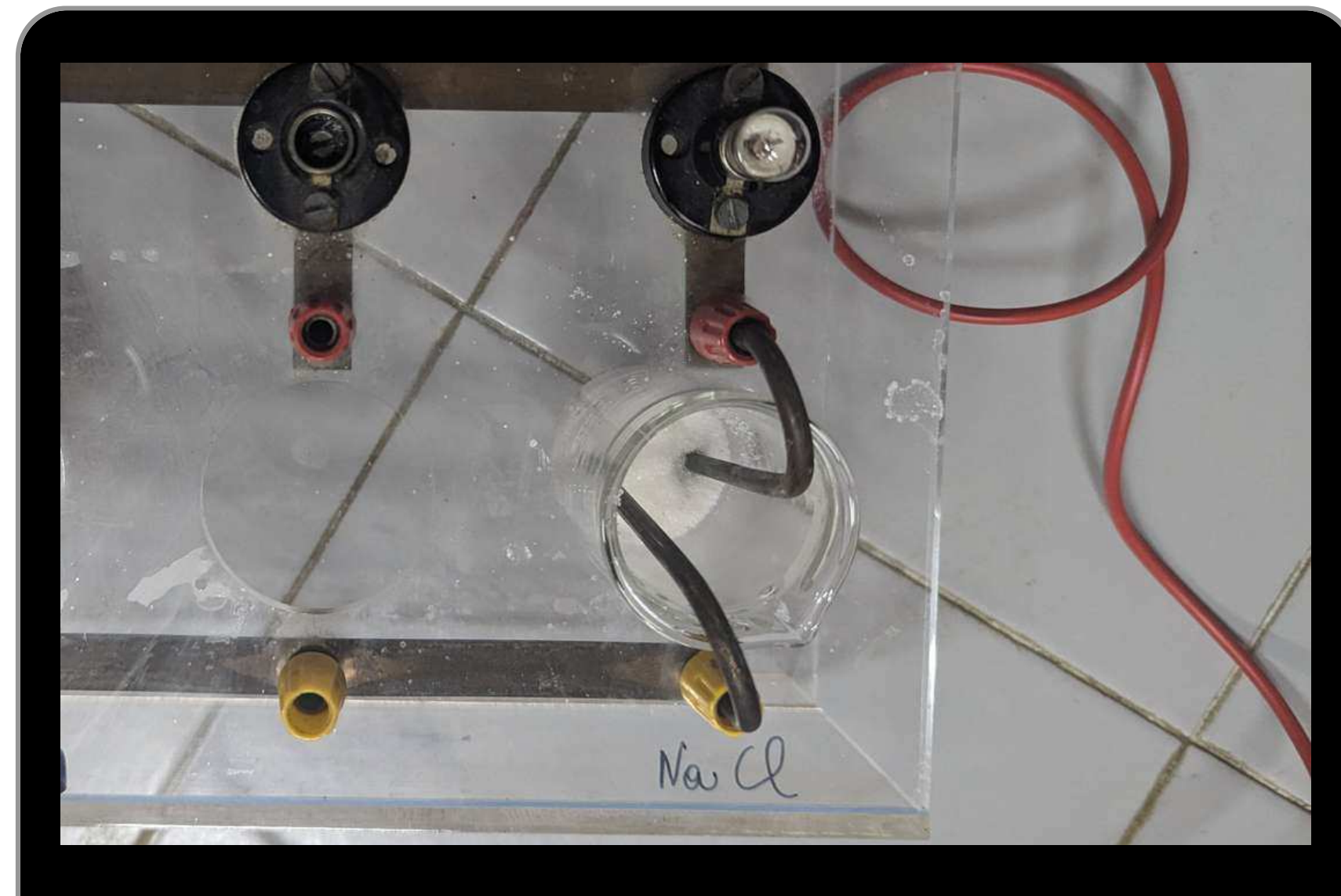
💡 LAMPADINA SPENTA





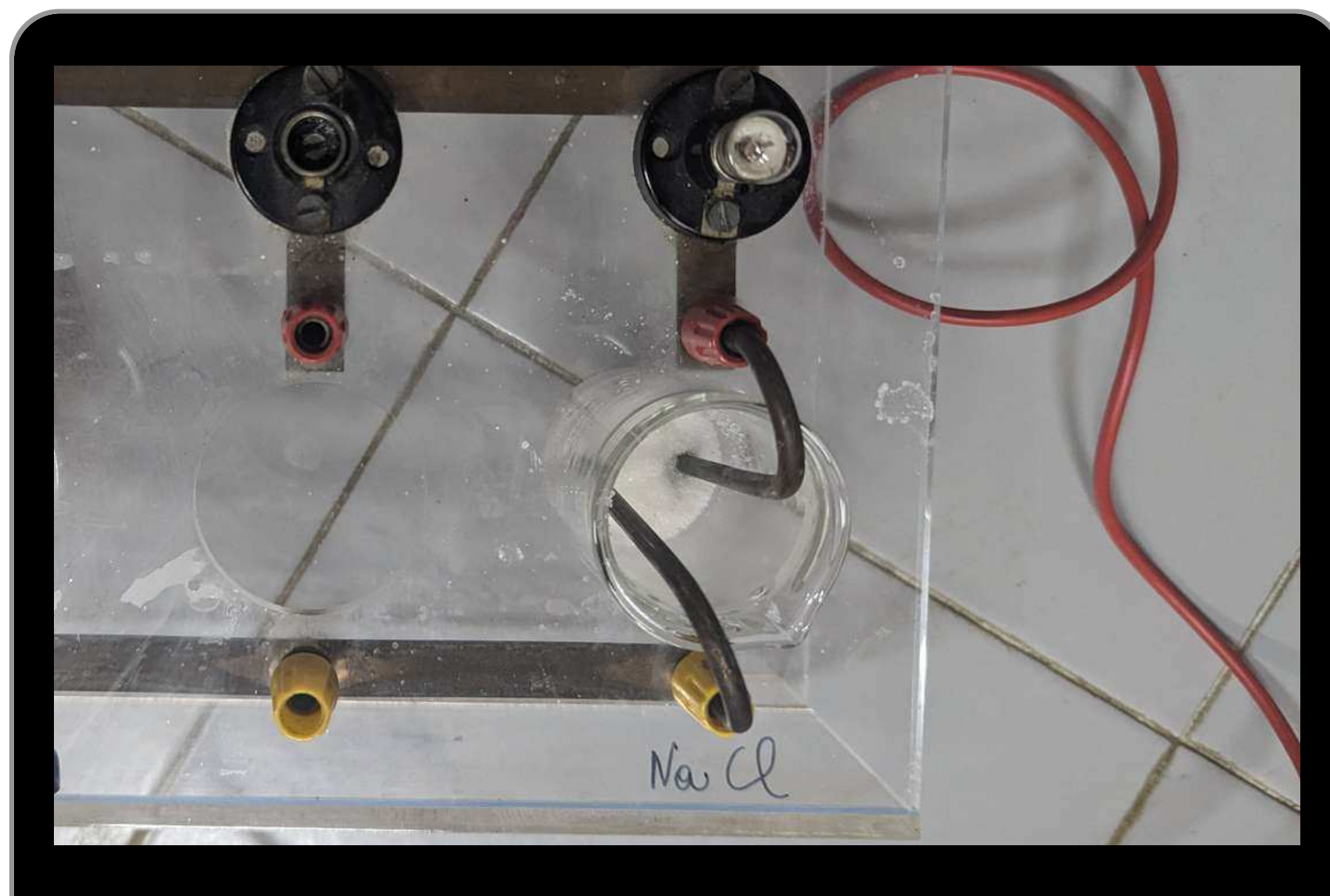
# SOSTANZA

Sale (Solido)





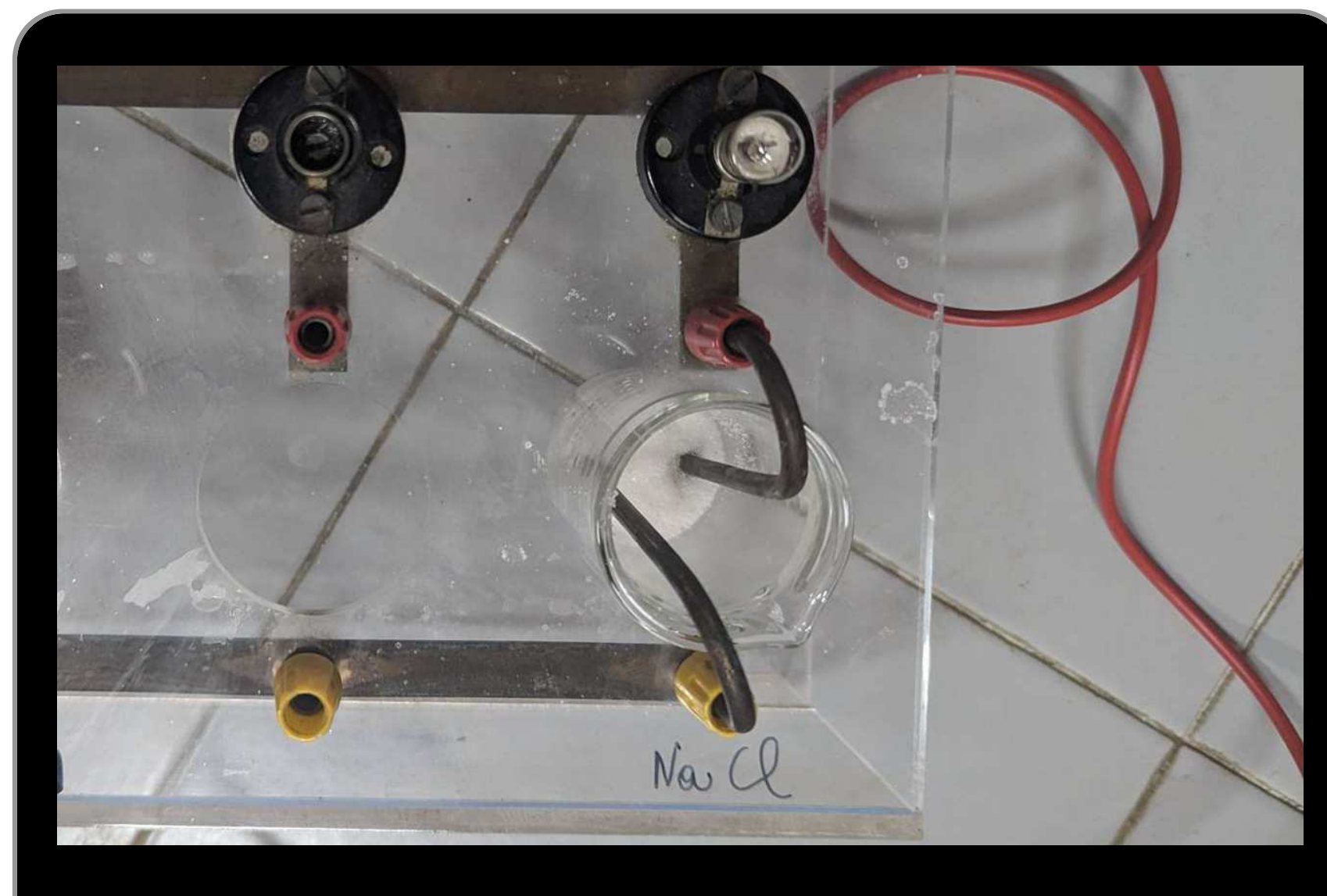
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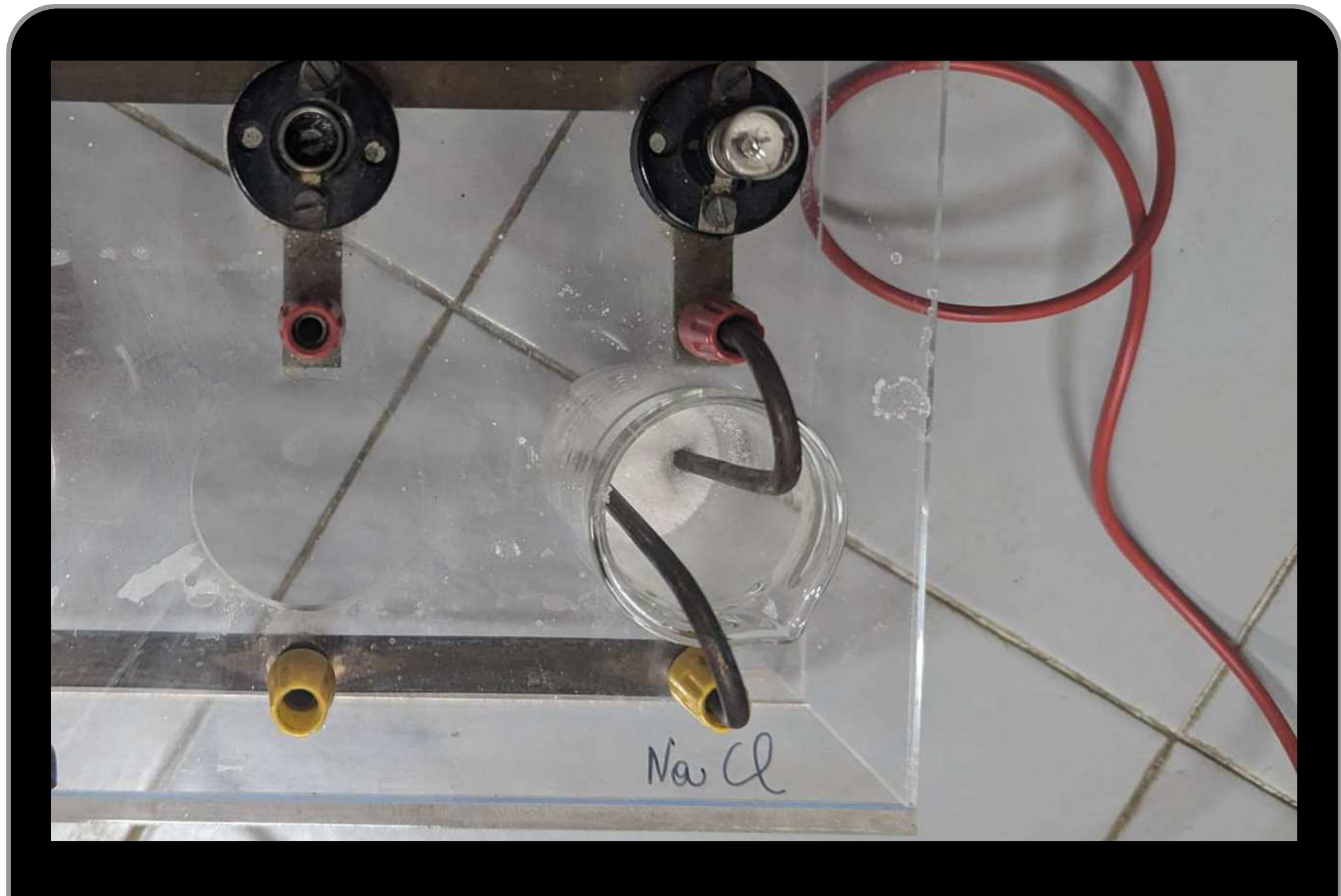




# CONDUCE?

No

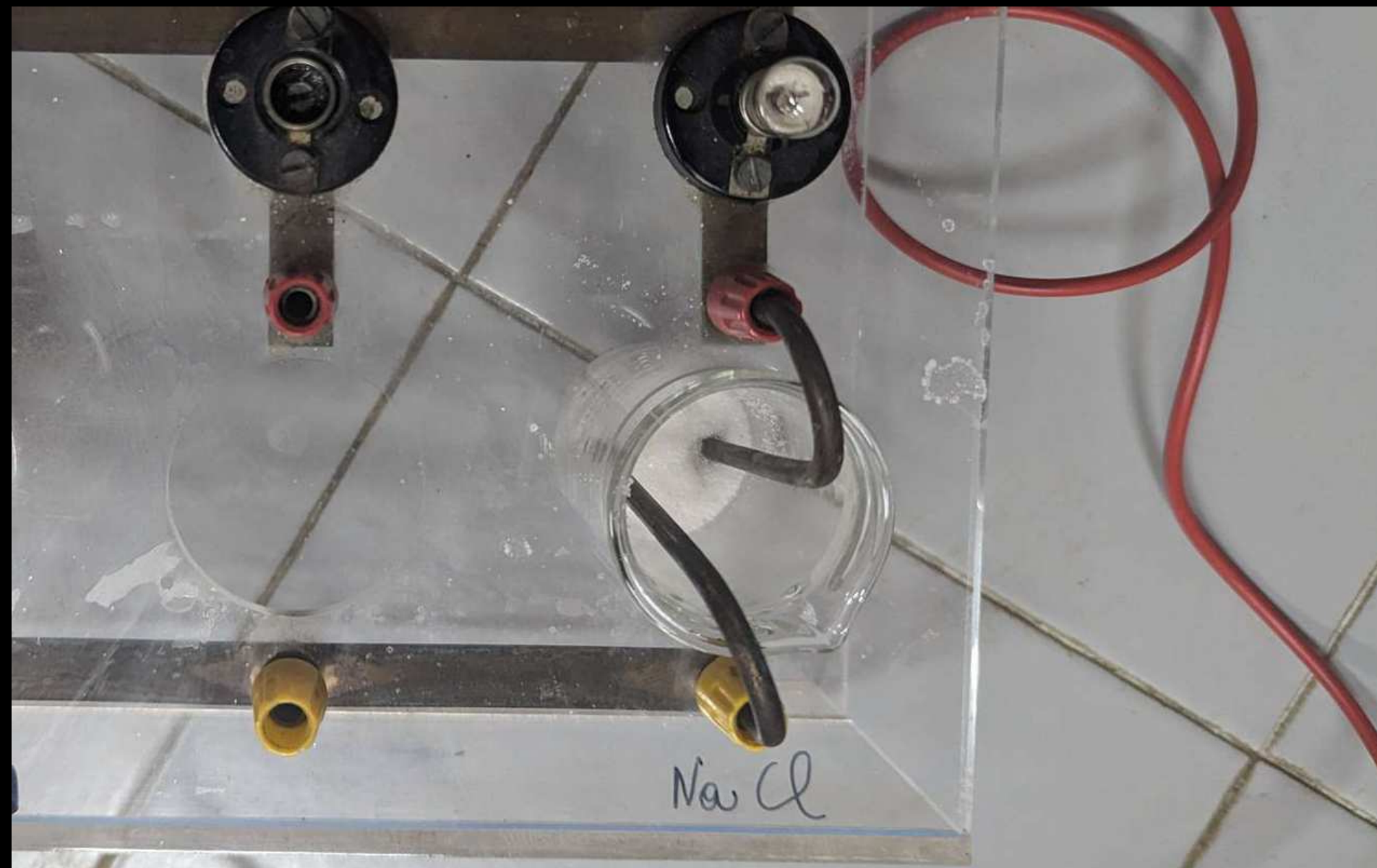








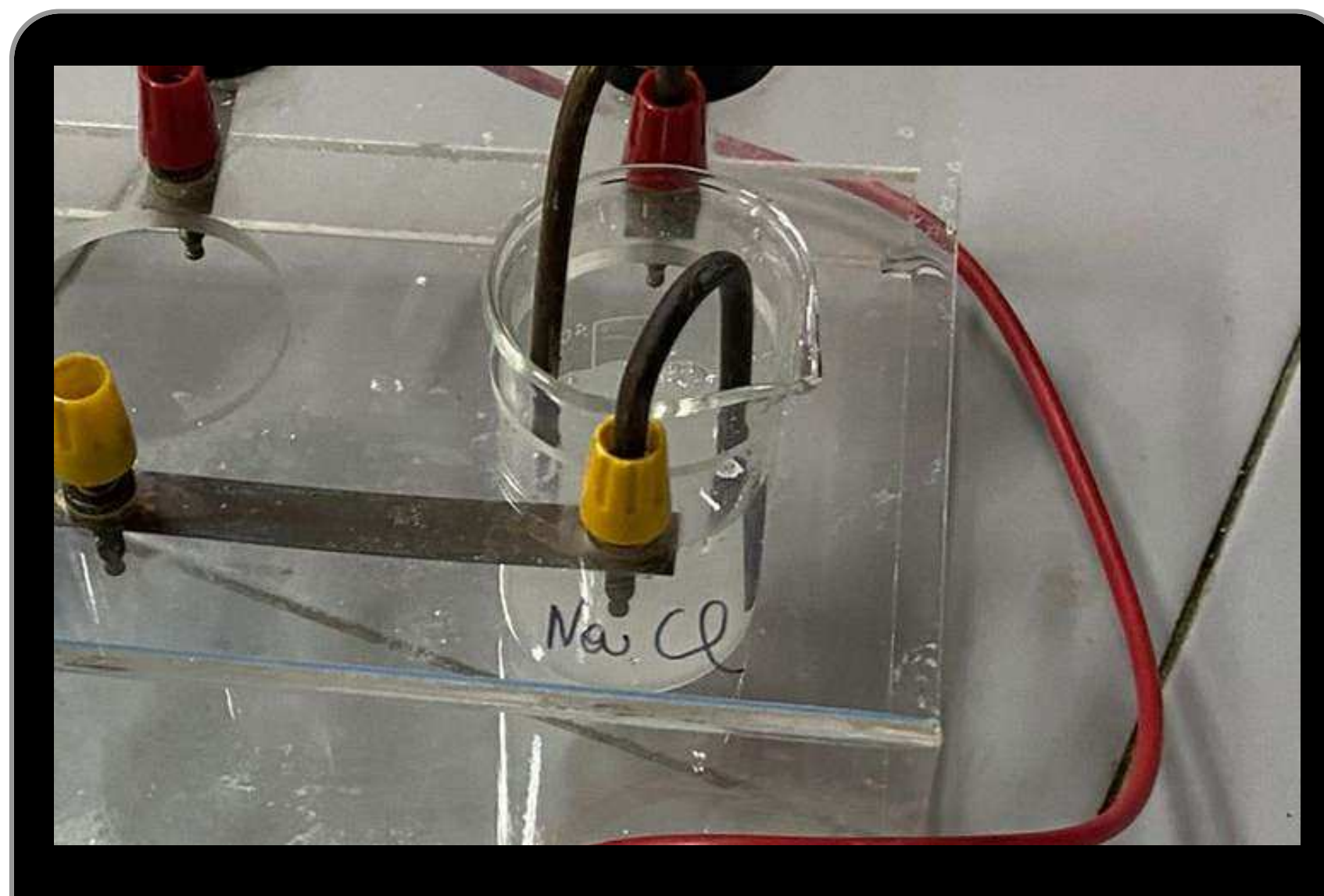
💡 LAMPADINA SPENTA

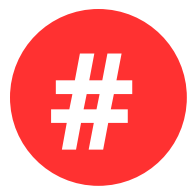




# SOSTANZA

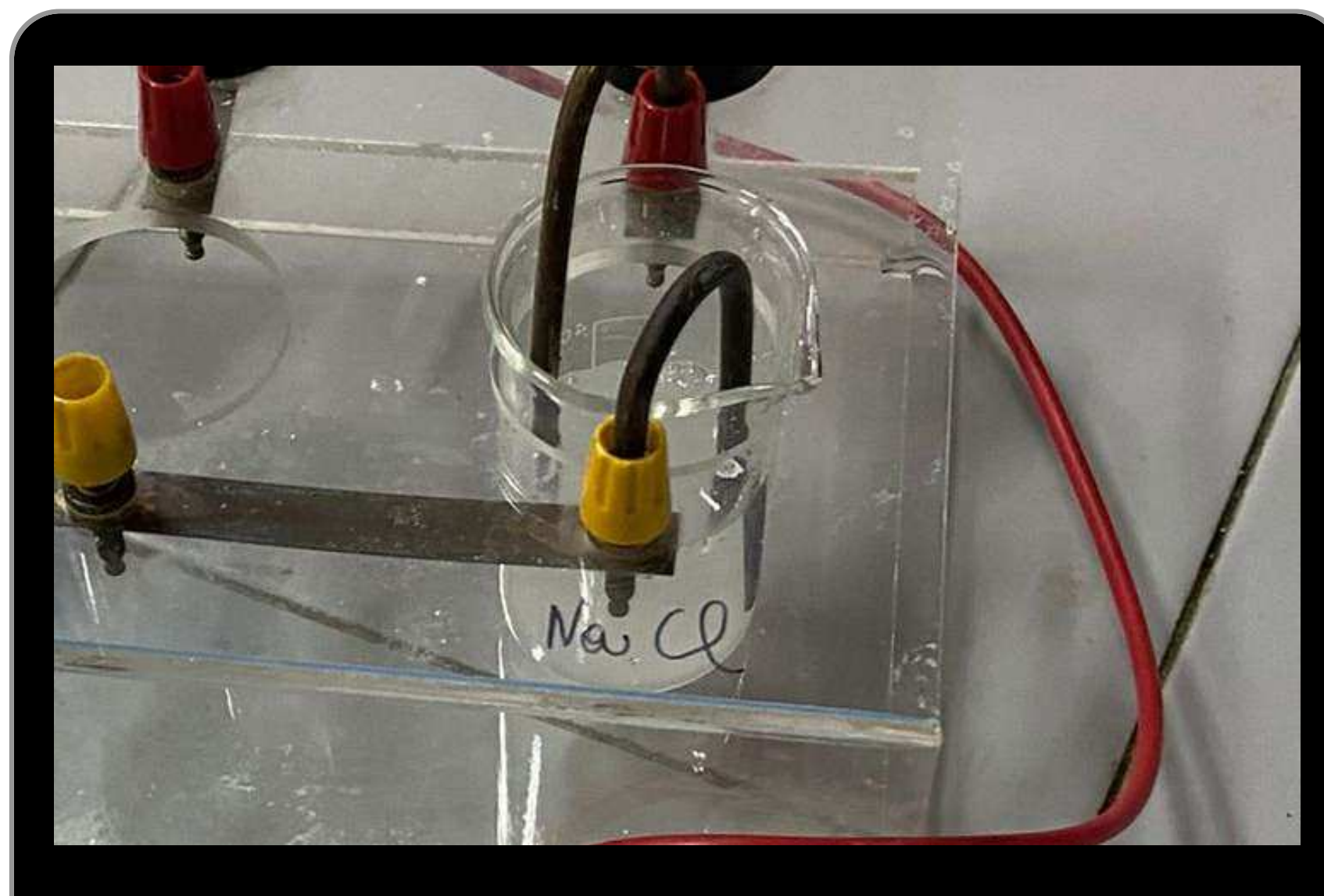
Sale (in soluzione)





# LEGAME

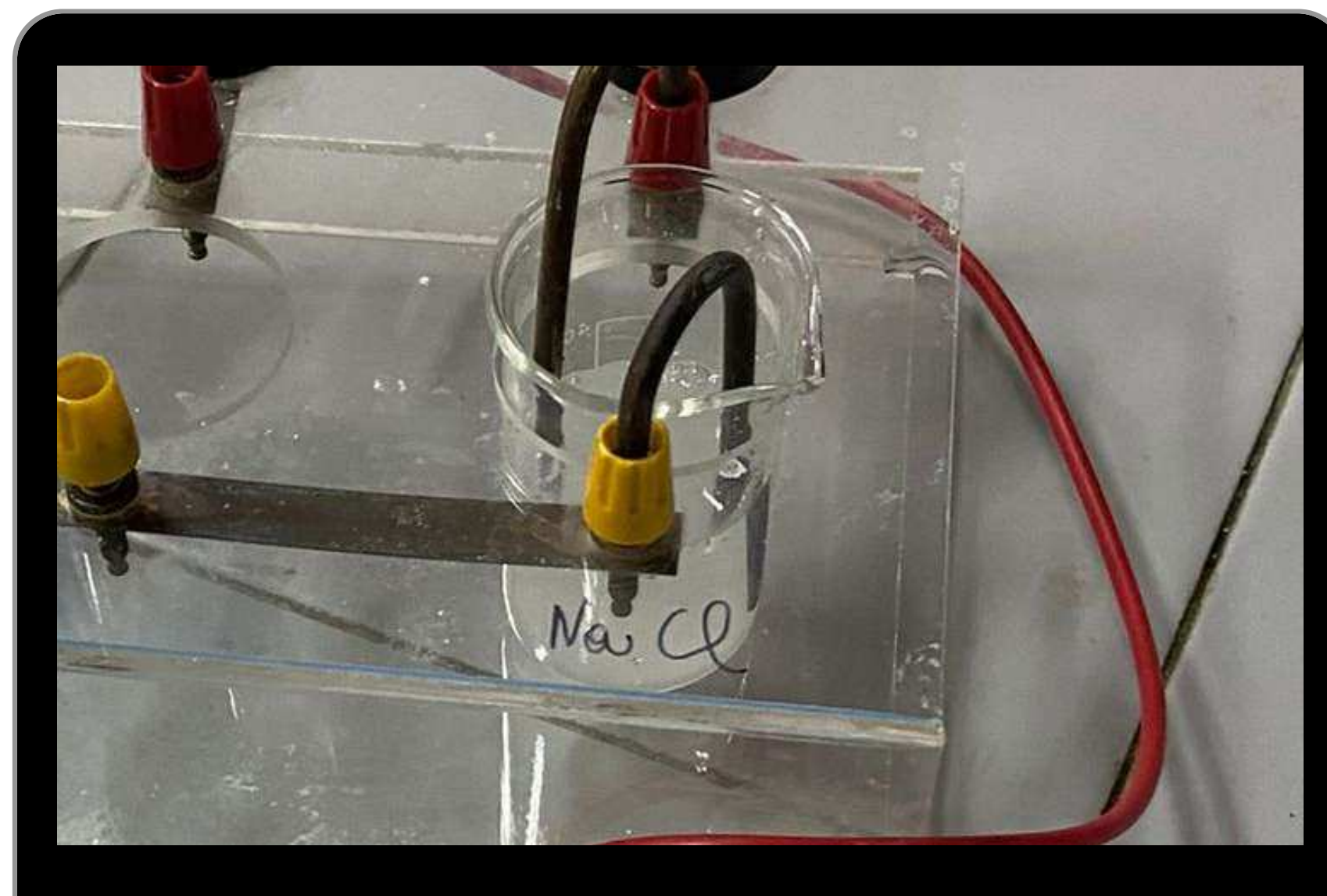
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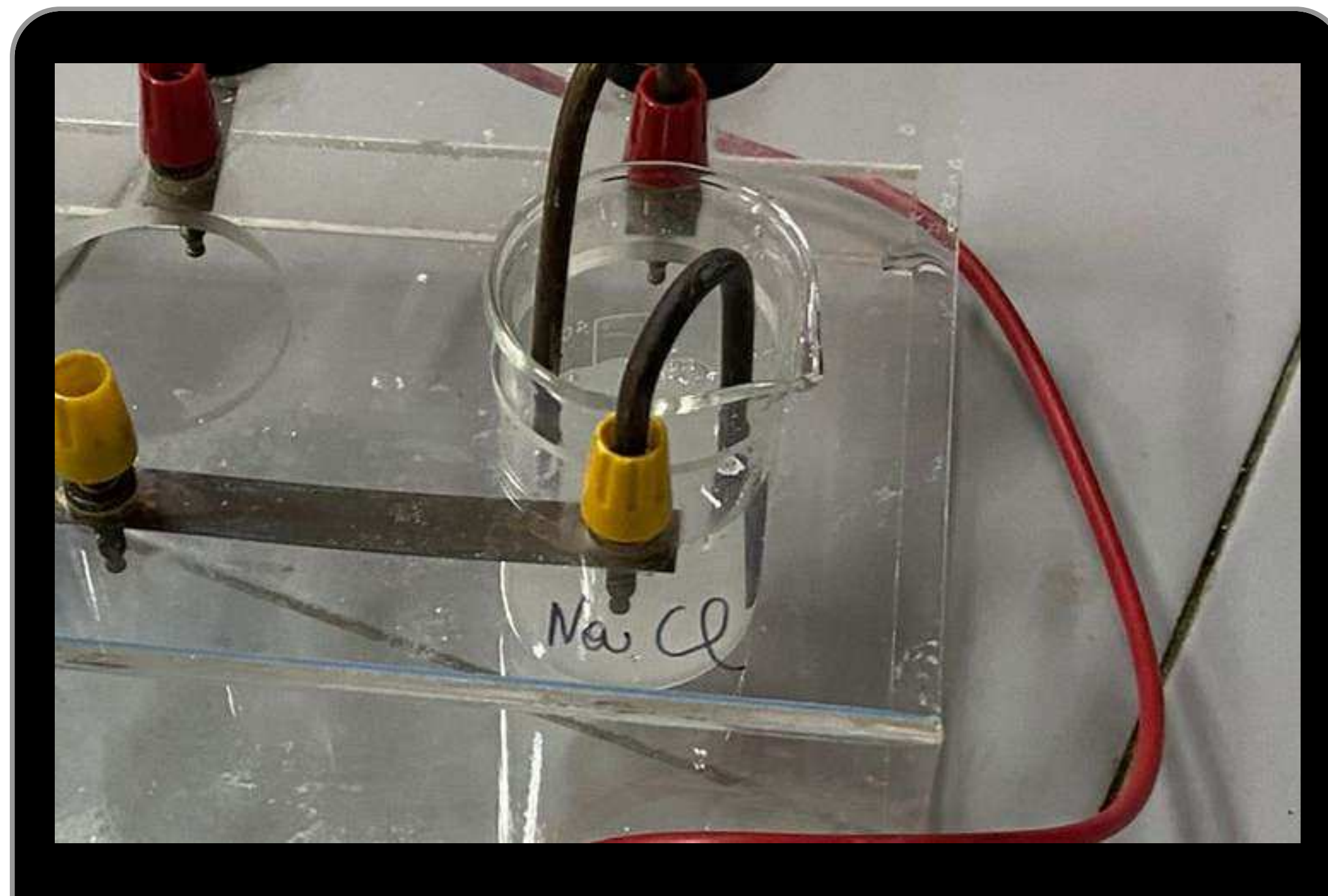
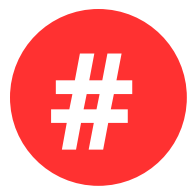




# CONDUCE?

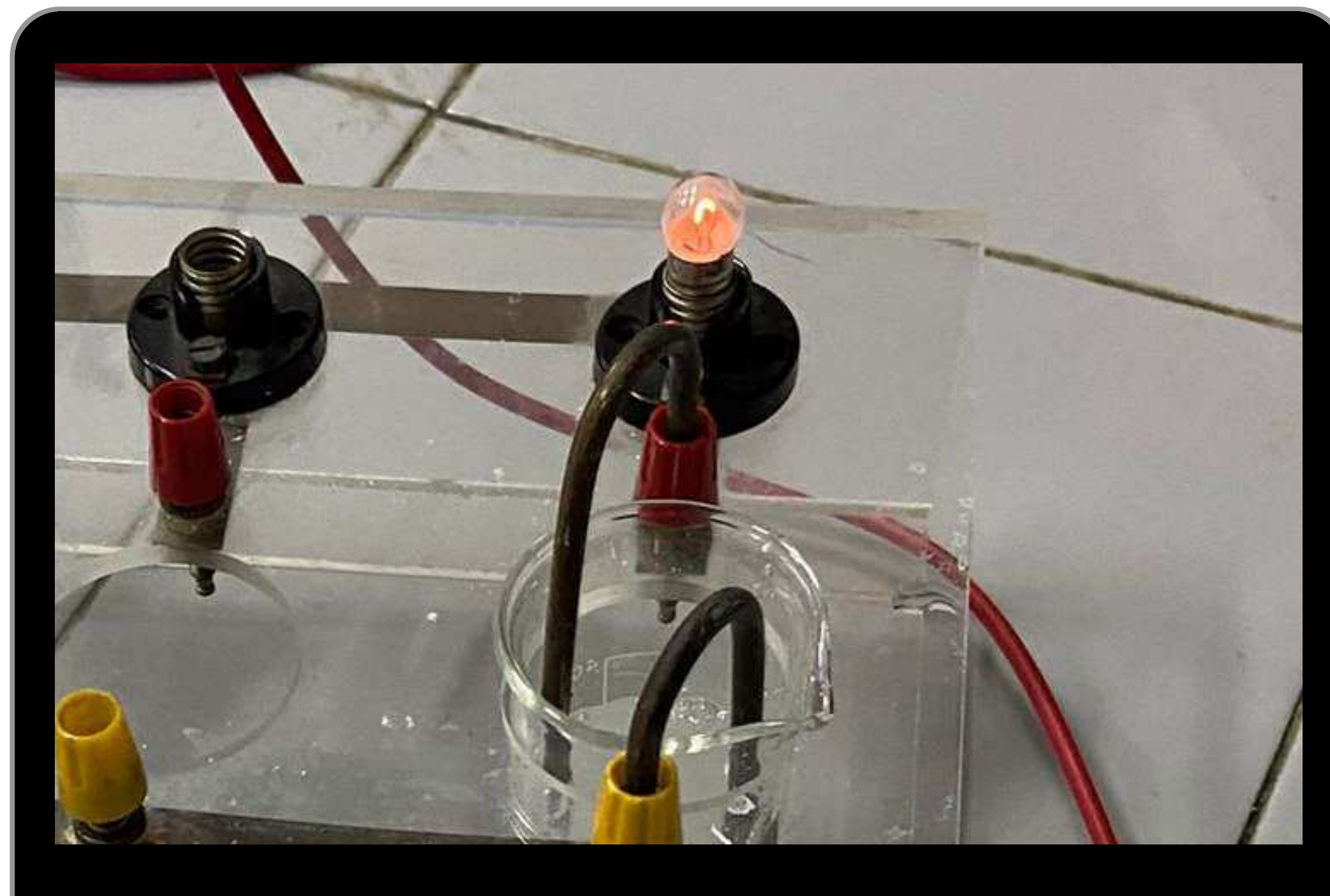
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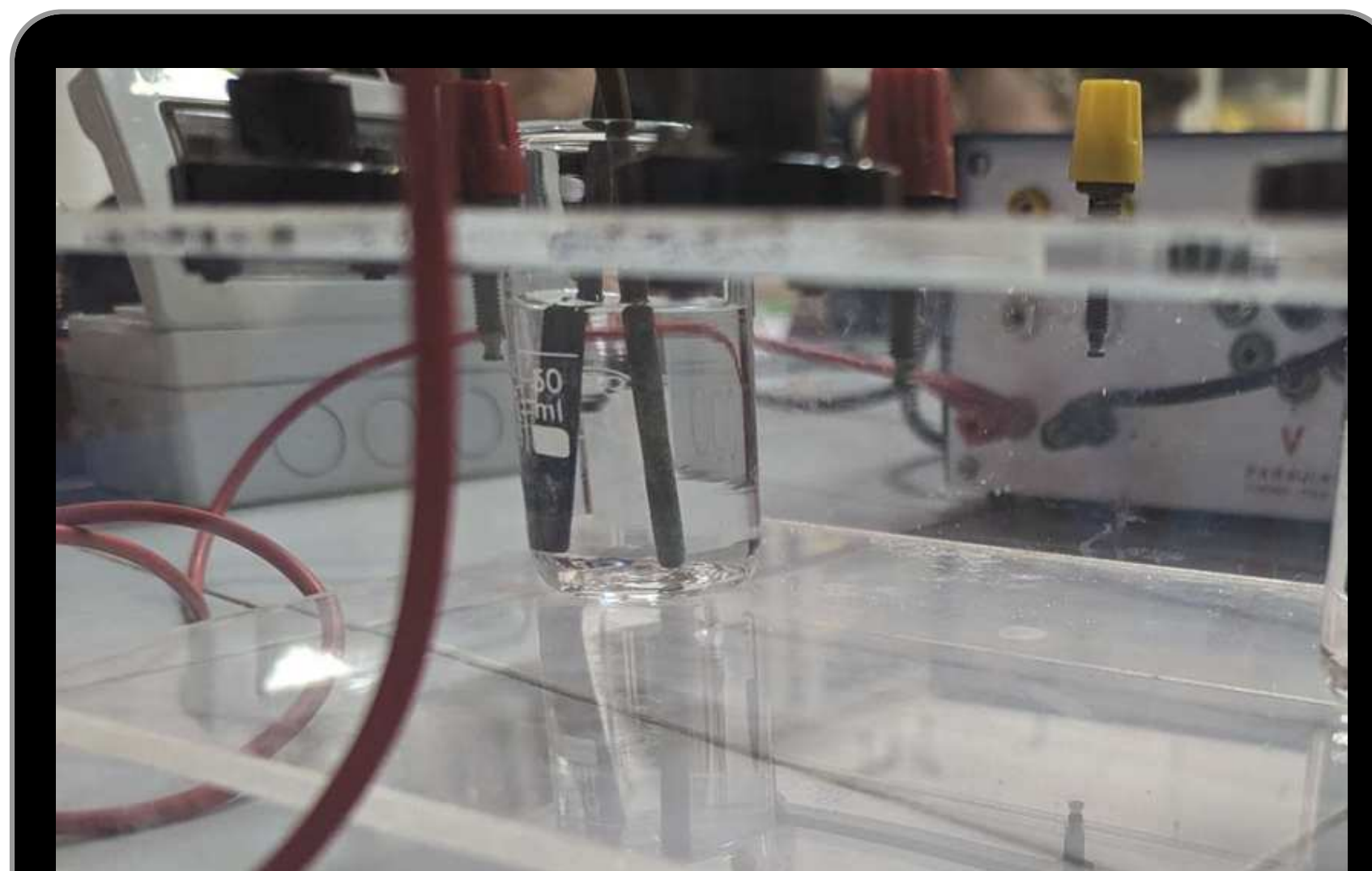
## LAMPADINA ACCESA





# SOSTANZA

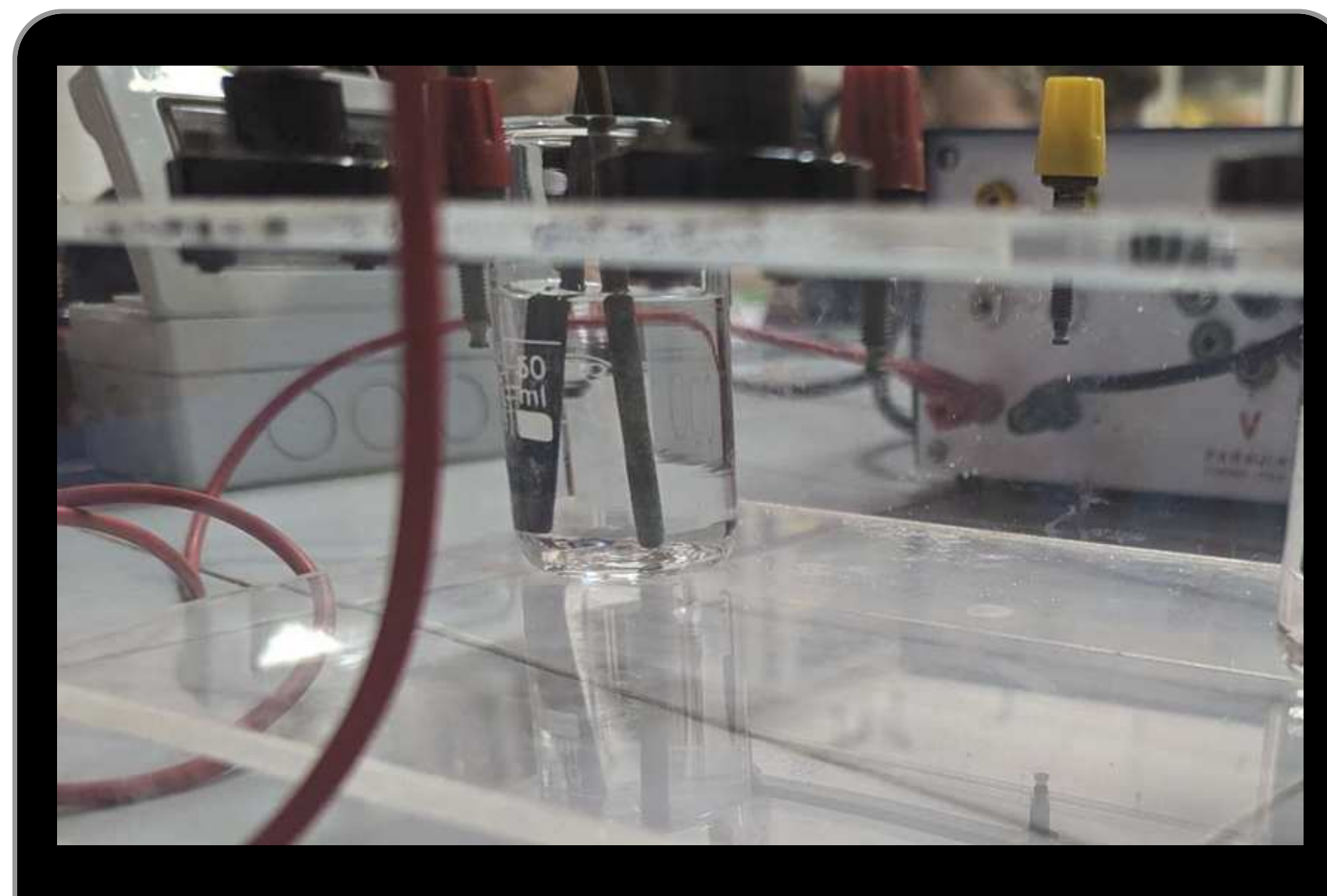
Acqua distillata





# LEGAME

## Covalente polare



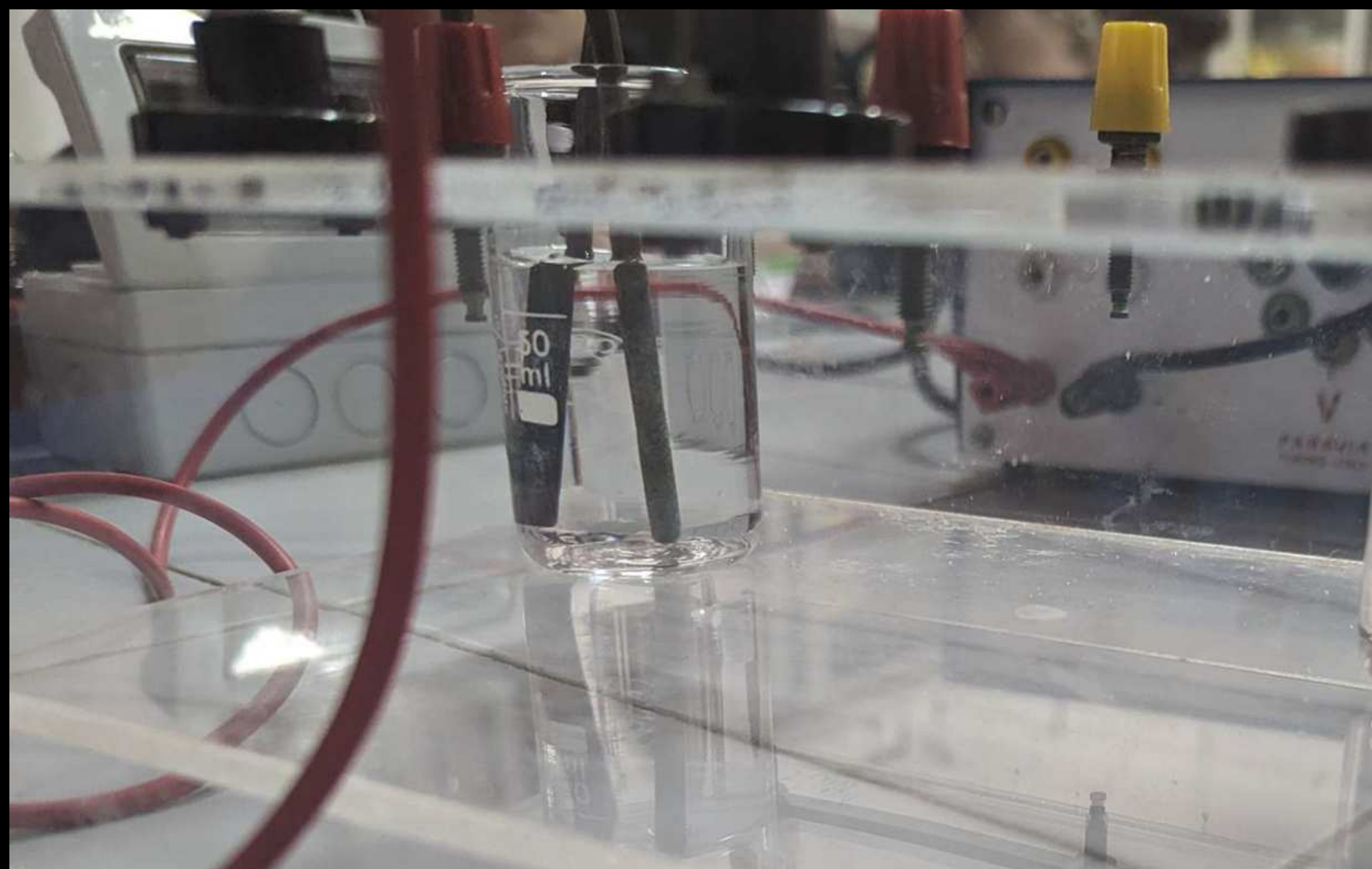


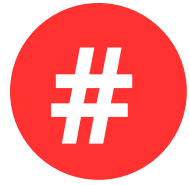


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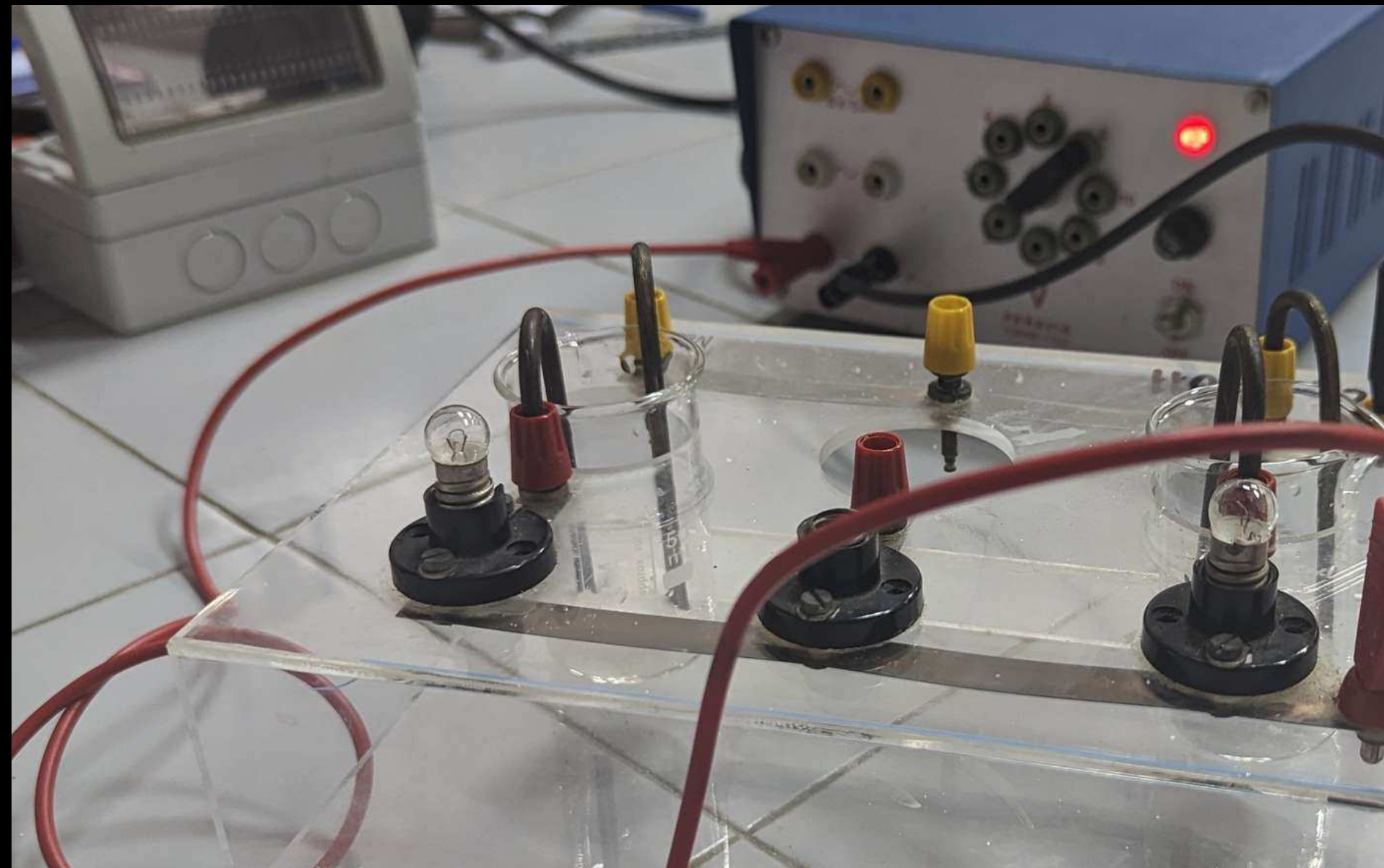
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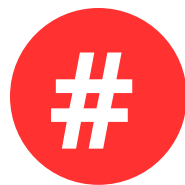






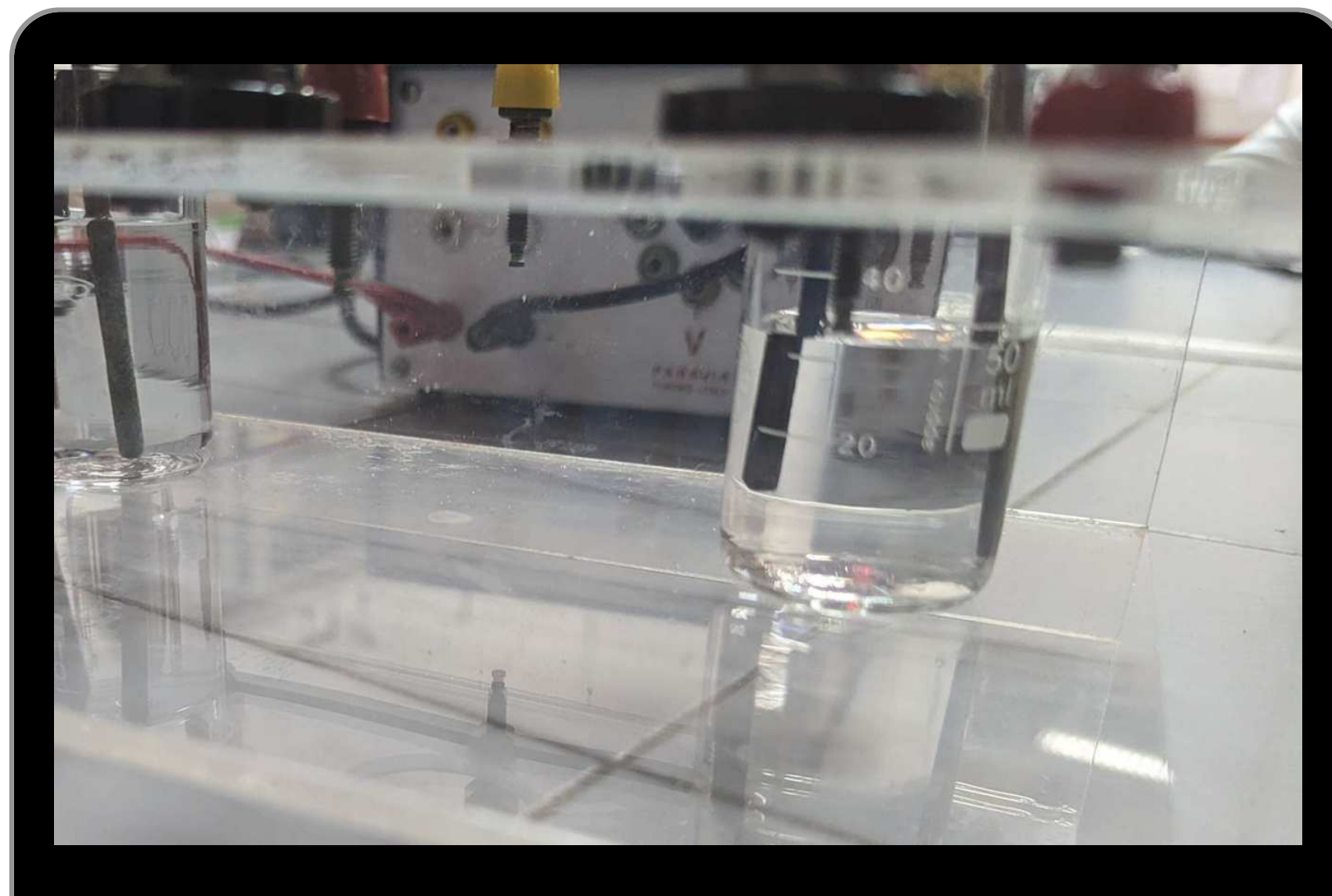
 LAMPADINA SPENTA

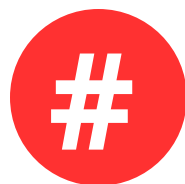




# SOSTANZA

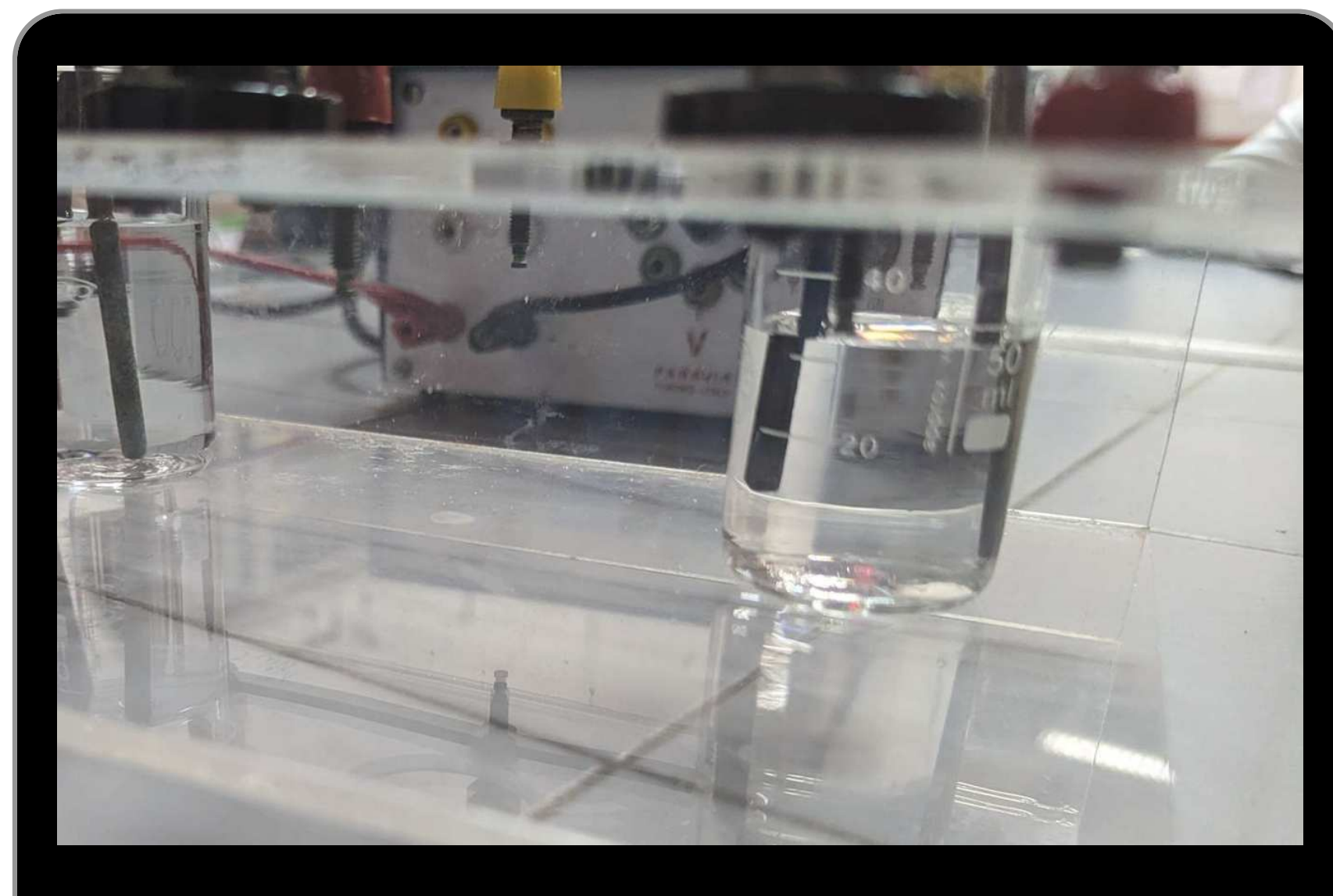
Acqua di rubinetto





# LEGAME

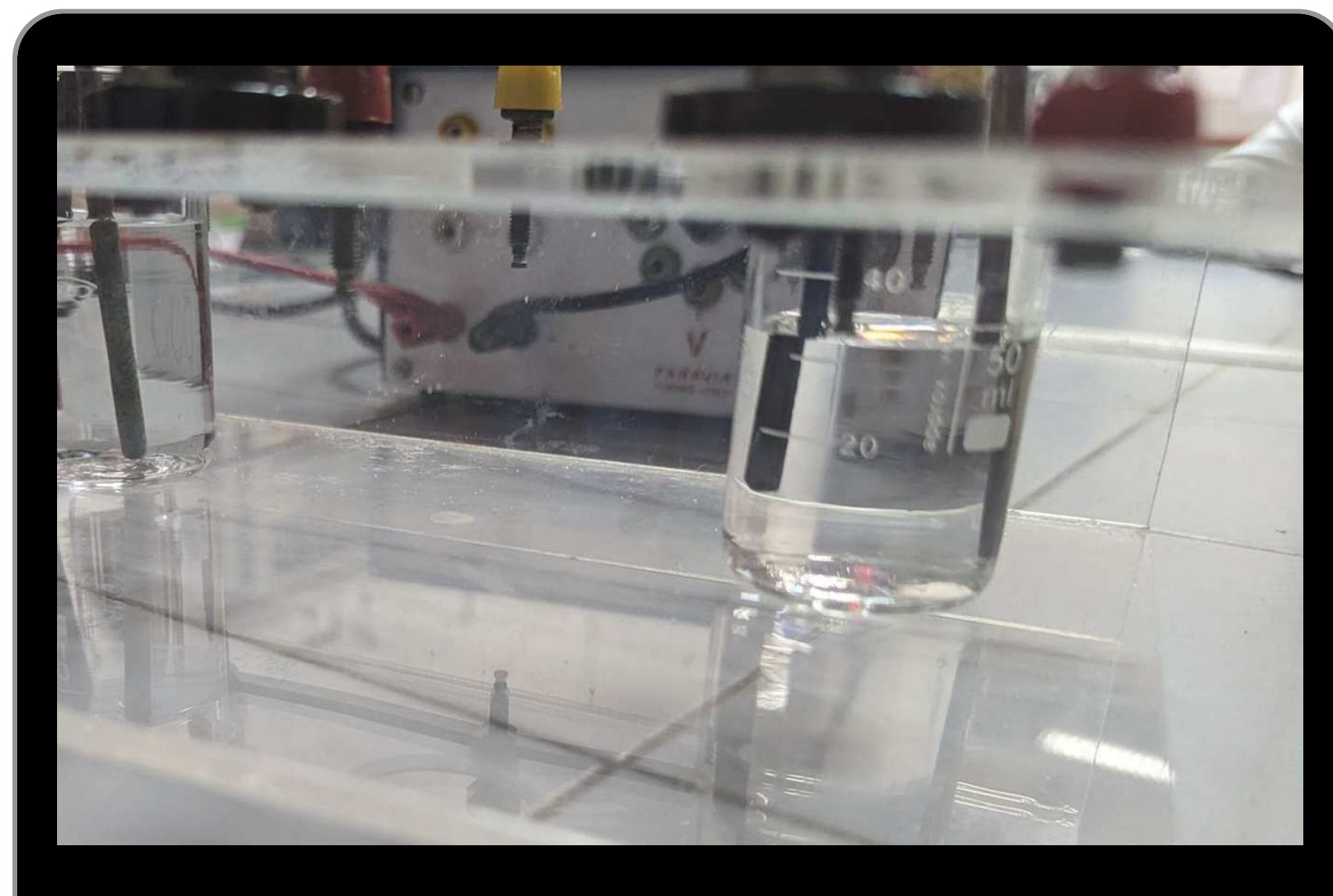
## Covalente polare





# CONDUCE?

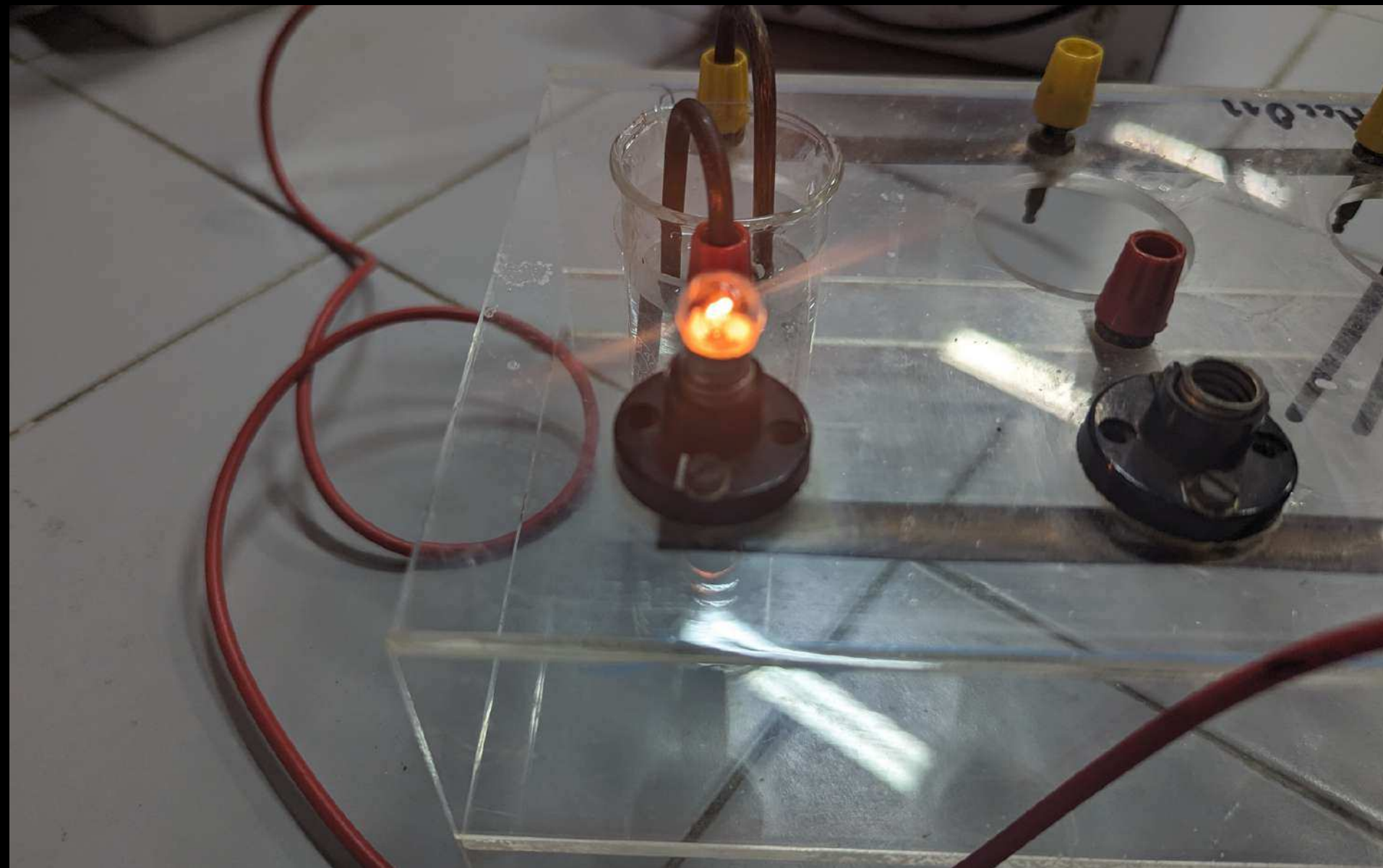
## Sì







 **LAMPADINA ACCESA**







**FINE**

# A cura di

Cristian Cirami, **2BIT**

Alex Lembo, **2AIT**

# Docenti

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