

Mikroszkópikus ékszerészet

Készítette:

Radnai András 11B

Német Nemzetiségi Gimnázium

Nagy Dóra Mária 10B, Nagy Anikó Napsugár 10B

Budapest XIV. Kerületi Teleki Blanka Gimnázium

Miért értékes a gyémánt?

- Jó hővezető
- Optikailag áteresztő
- Kémiaailag stabil



Frigyes the CVD

Növesztési
nyomásfigyelő



Gázzabályzó

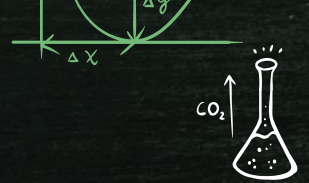
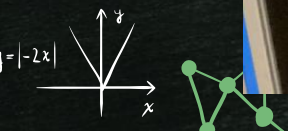
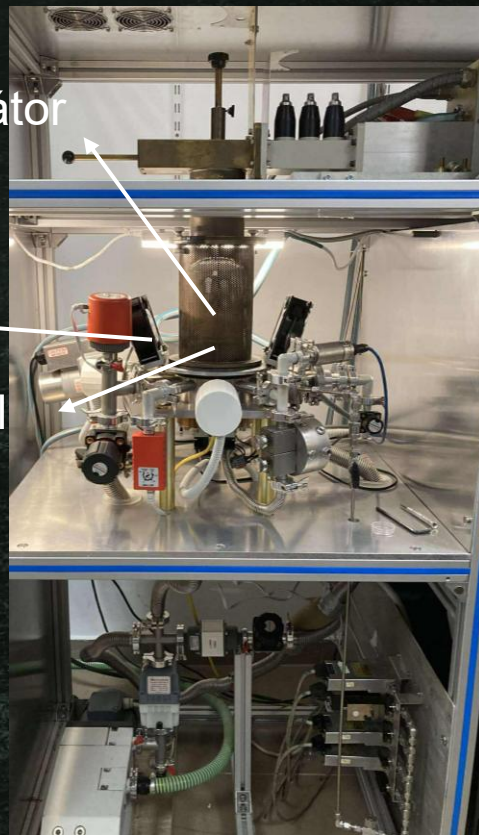
Léghűtés

Volfram fűtőszál

Bekapcsoló

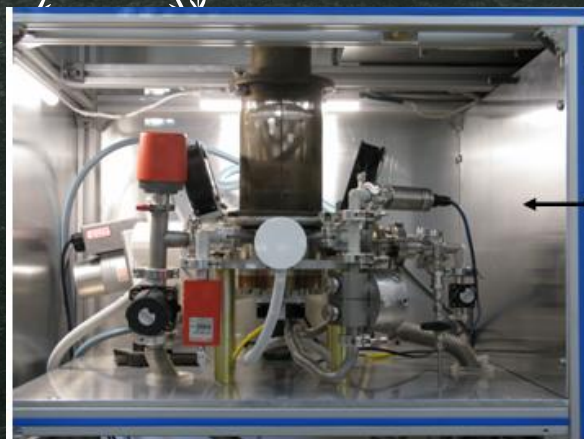
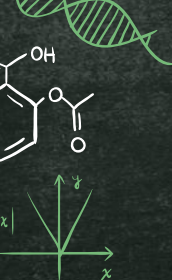
Mikrohullámú
generátor

Rezonátor

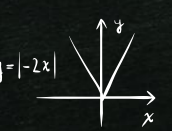
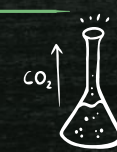


$s = ut + \frac{1}{2}at^2$
 $v = u + at$

Hand-drawn diagrams in the bottom right corner include a coordinate system with axes labeled x and y , and a molecular structure showing a chain of atoms with bonds.

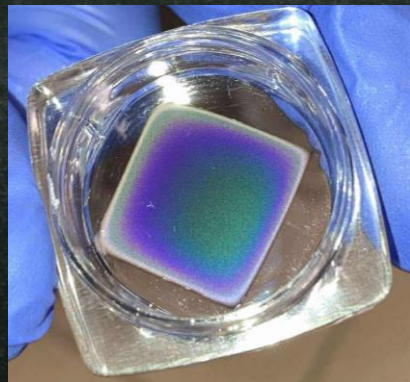


Mikrohullámú CVD-berendezés



$s = ut + \frac{1}{2}at^2$

$v = u + at$



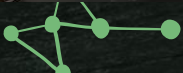
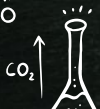
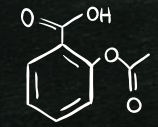
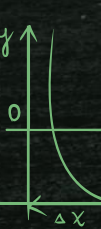
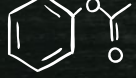
Kész minta



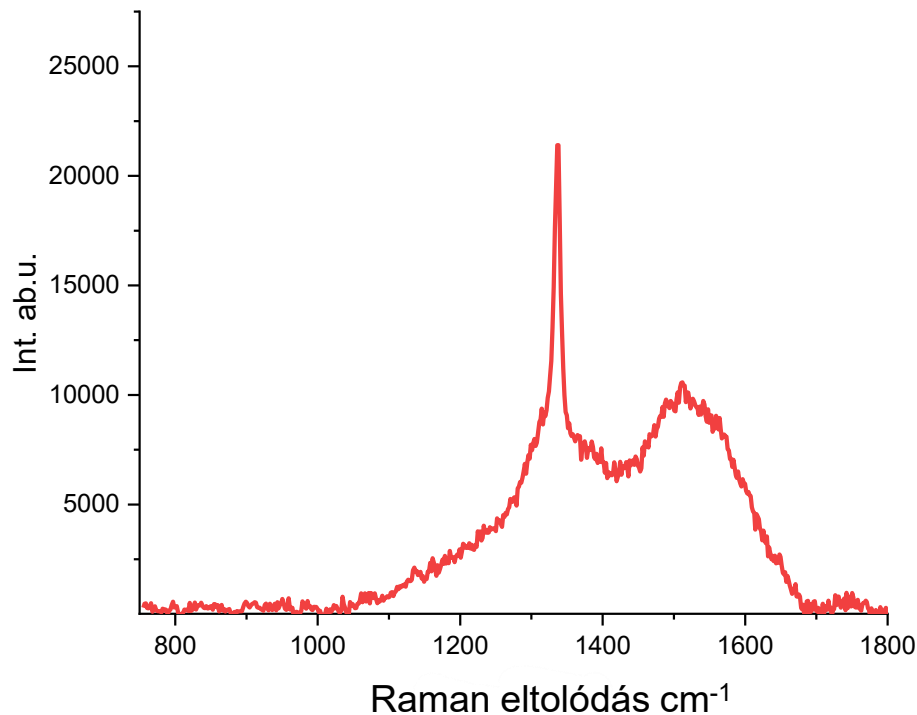
Raman spektroszkópia



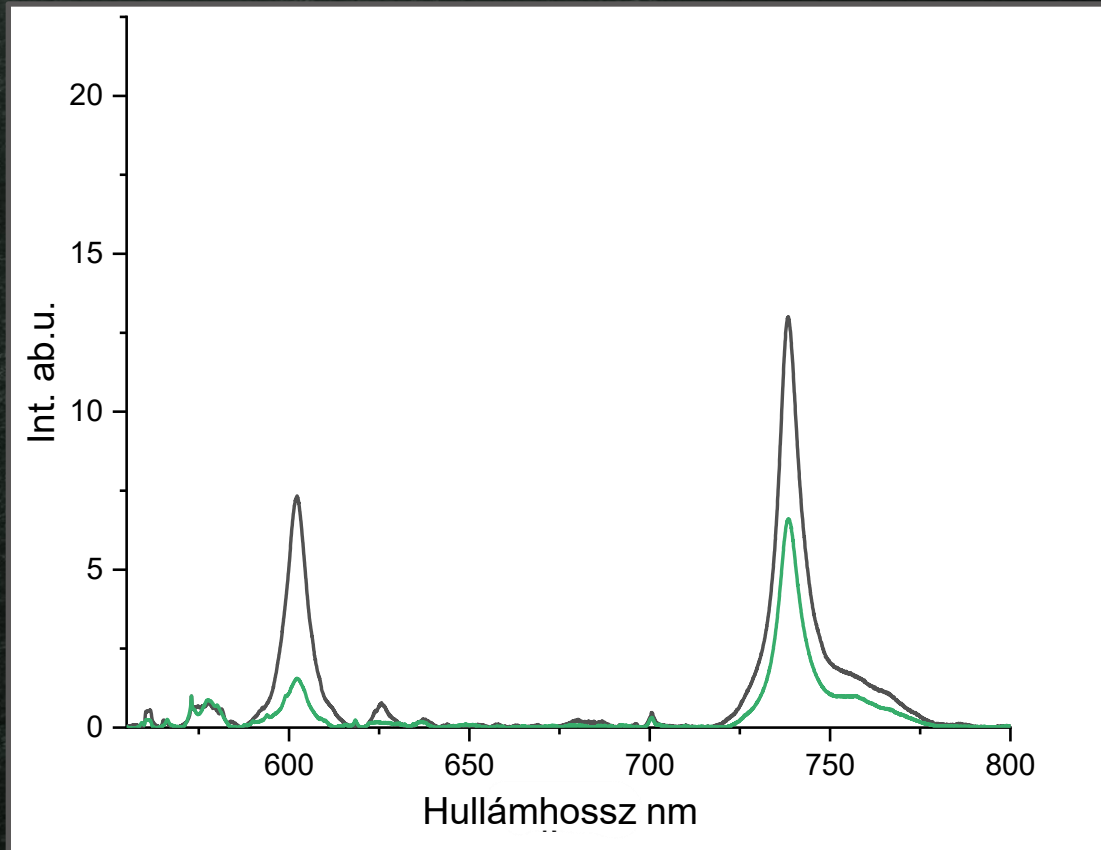
$$y = -2x$$



Nanogyémántréteg Raman-spektruma



Nanogyémánt fotolumineszcencia spektruma



Miért hasznos az arany nanorészecske?

Gyógyszer

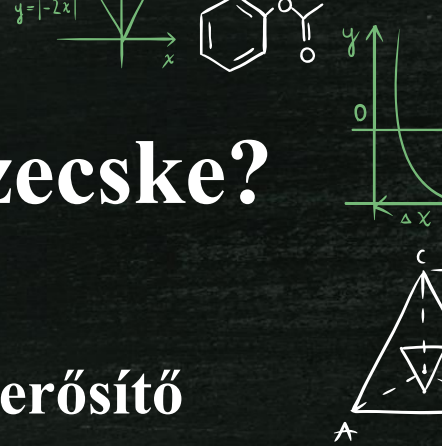
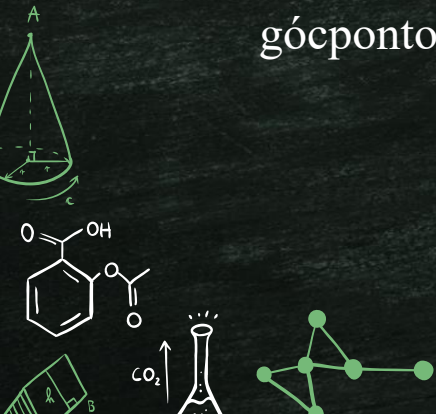
Az aranyhoz kapcsolt
gyógyszermolekulákat
célszántan el lehet juttatni a
gócpontokhoz

Rákkutatás

Infravörös sugárral
megvilágítva a rákos
sejtek elpusztíthatóak

Jelerősítő

Erősítik a felületi
plazmonrezonanciát
-> Raman



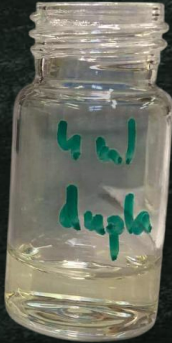
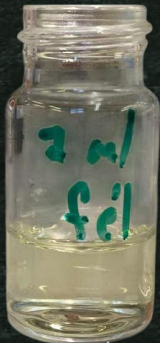
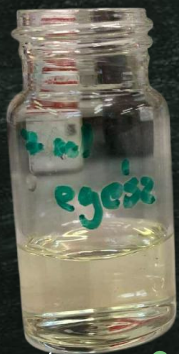
UV-VIS-spektroszkópia

Arany kolloid
oldat
elkészítése

Redukálószer
feloldása

Oldat
forralása

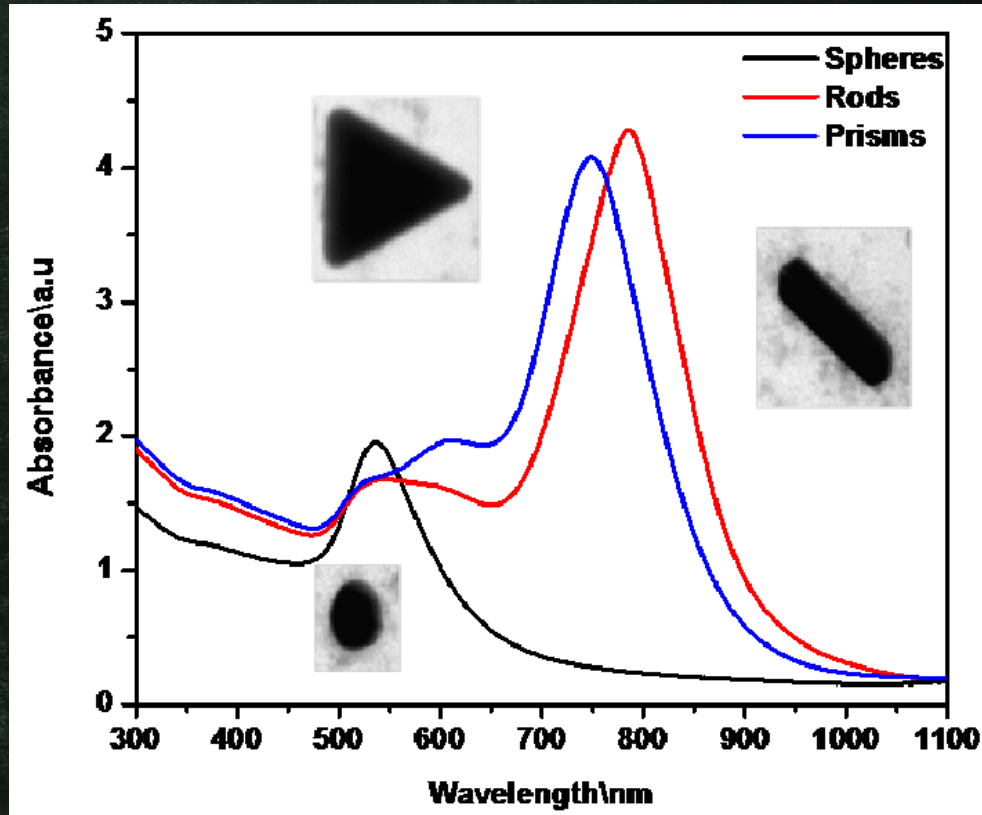
Redukálószer
hozzáadása



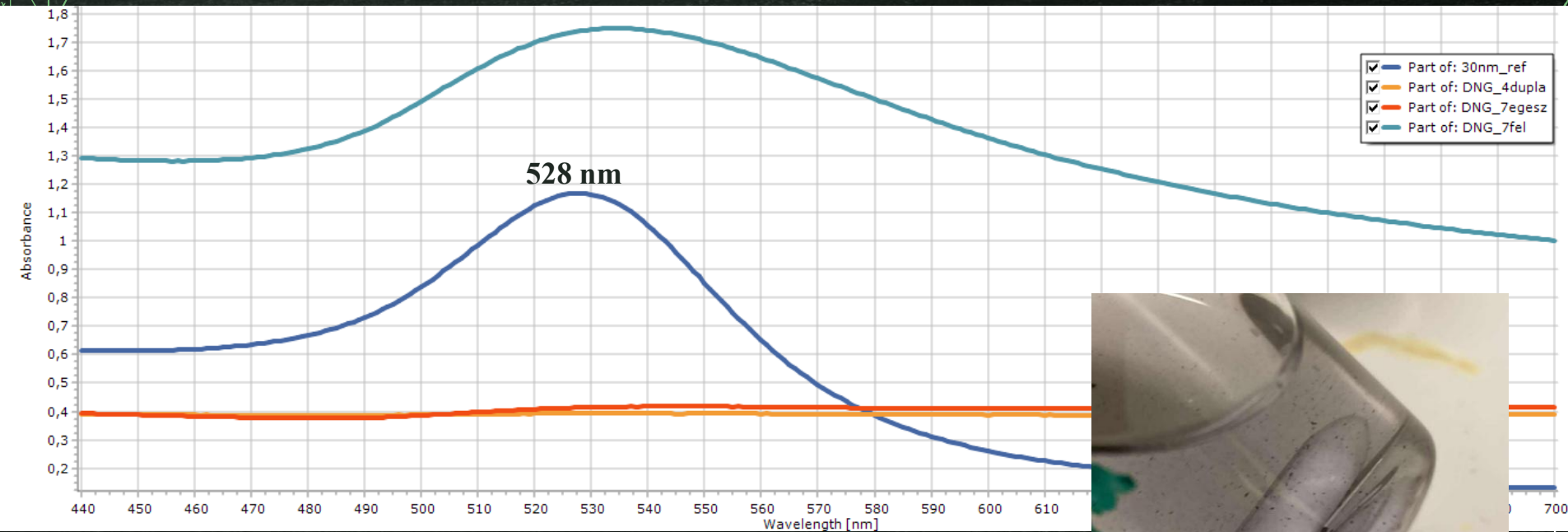
Cary UV-VIS-spektroszkópia



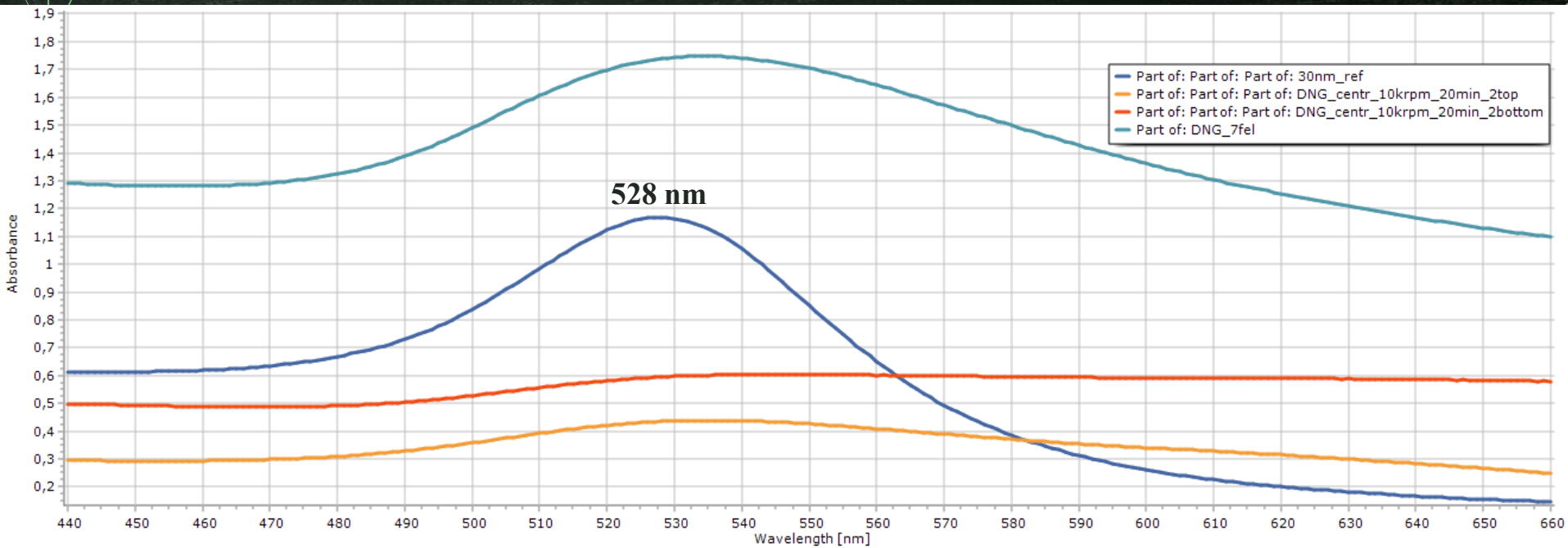
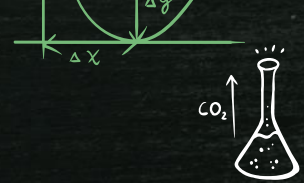
Arany nanorészecskék jellemzése



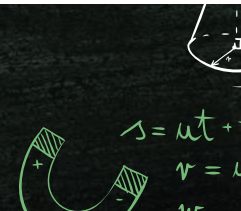
Abszorpciós mérések eredményei

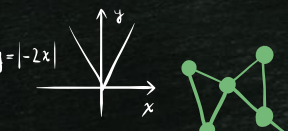
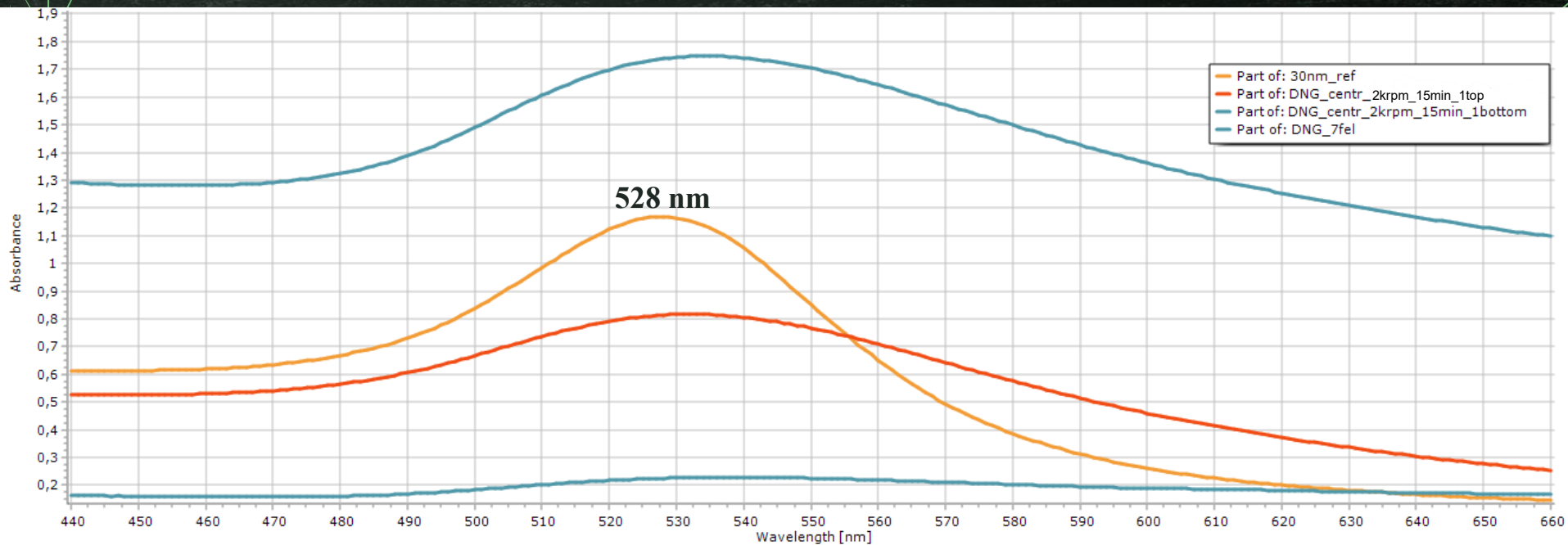
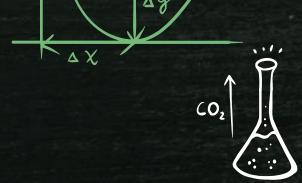


440-700 nm

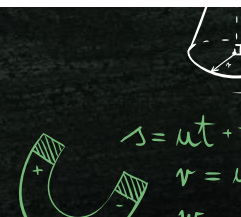


440-700 nm

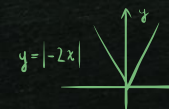
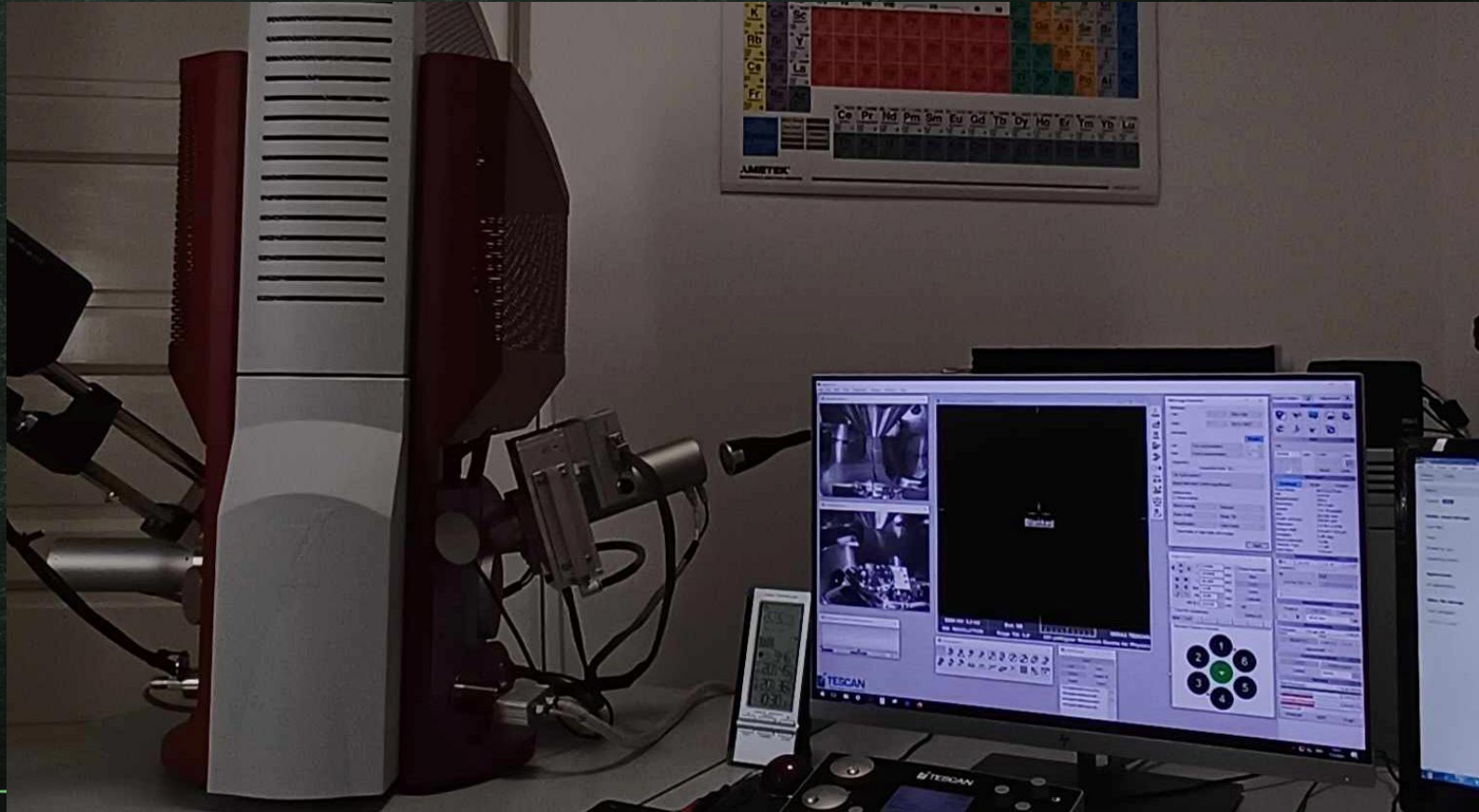


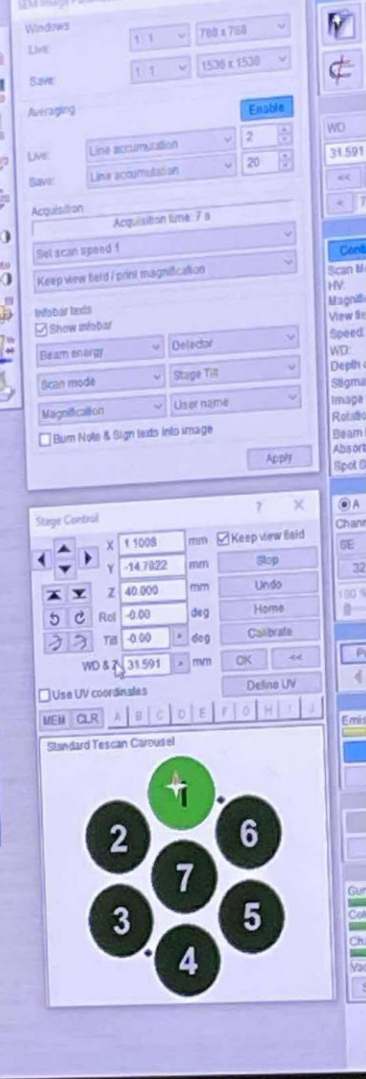
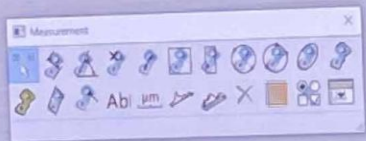
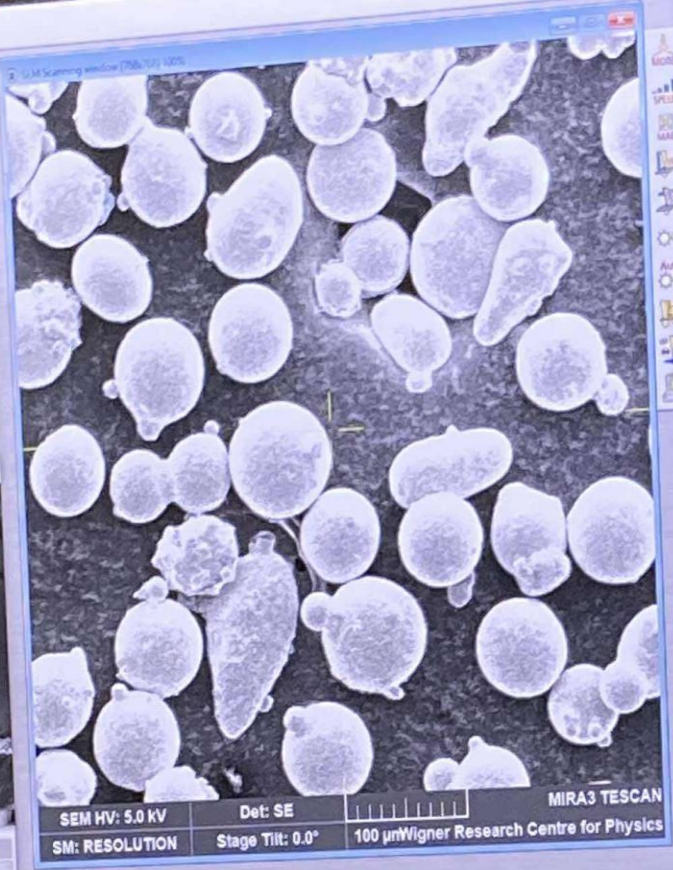


440-700 nm

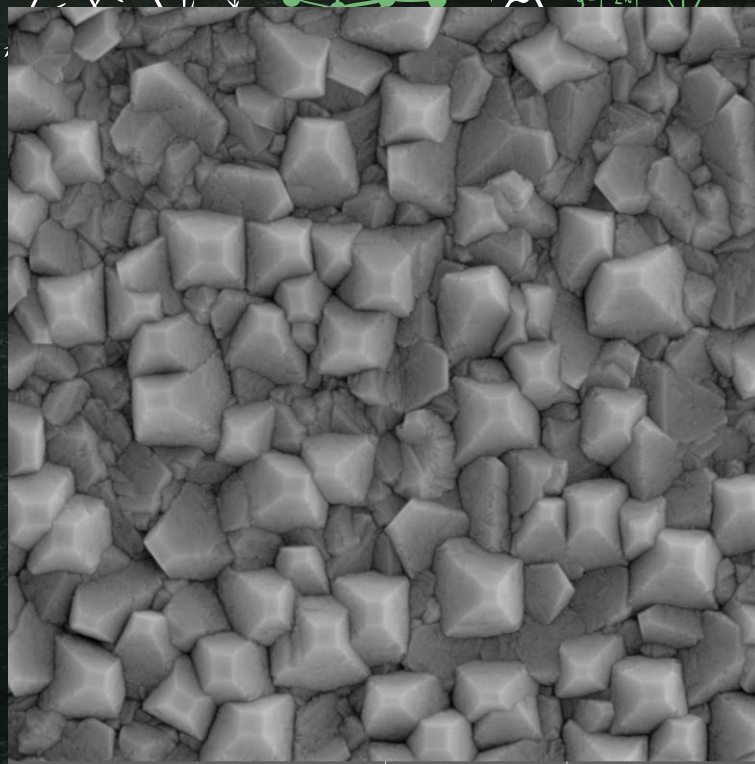
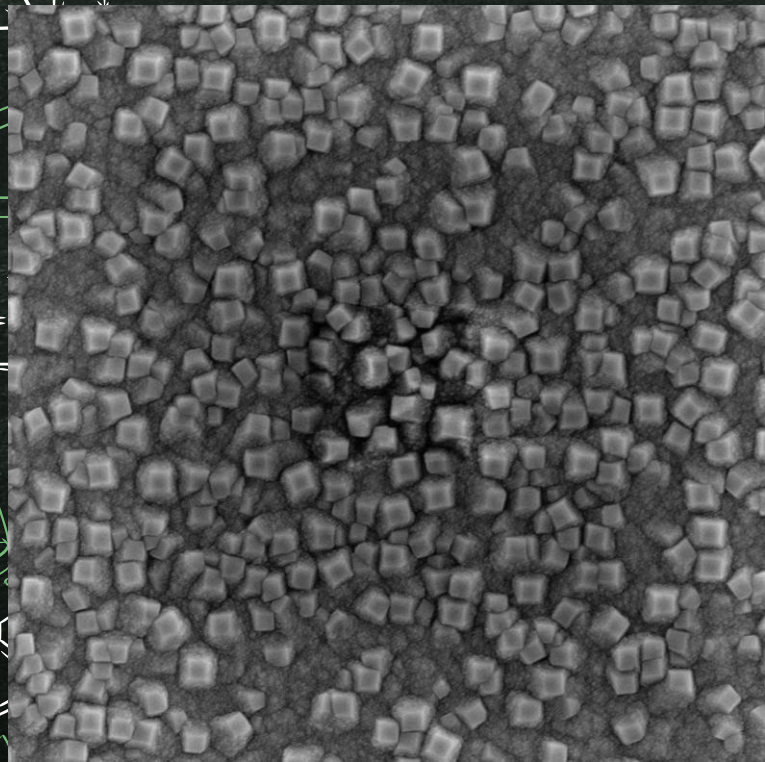


Pásztázó Elektronmikroszkóp (SEM)





Gyémánt SEM alatt



Köszönjük a figyelmet

Utóképek: életfeltételünk; a Kávé

