

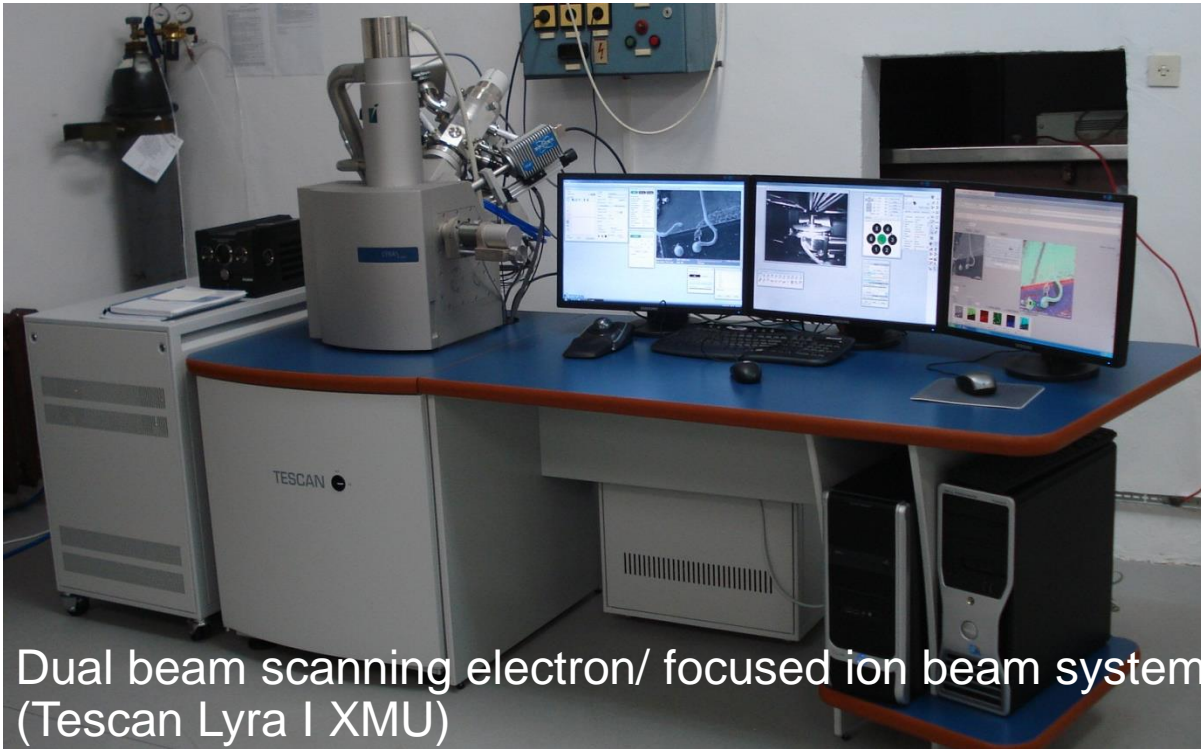
**Катедра Физика на твърдото
тяло и микроелектроника
Физически факултет**

**Лаборатории
Технология на материалите
и Елипсометрия**

Група А202

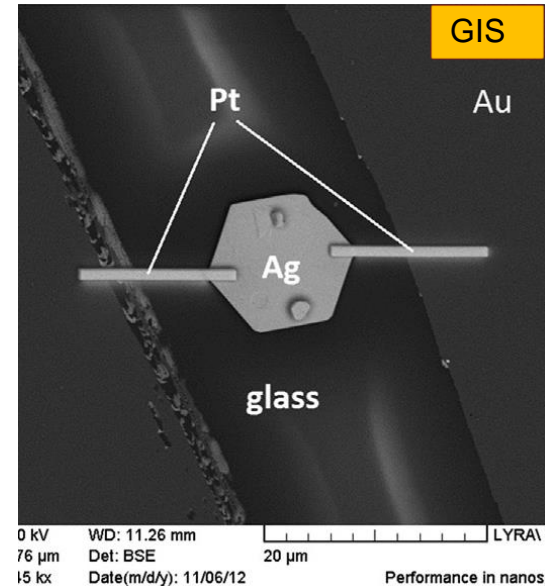
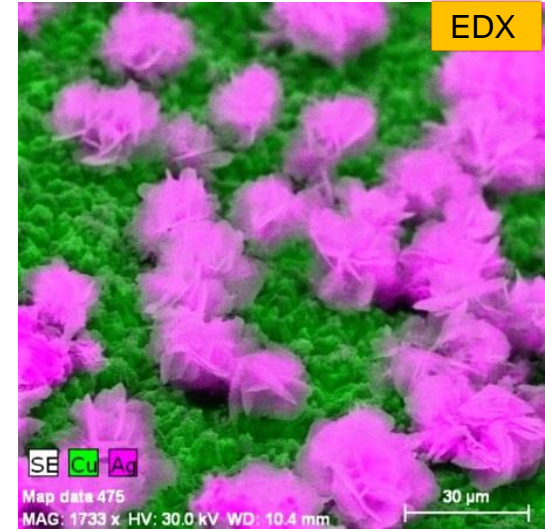
Апаратура



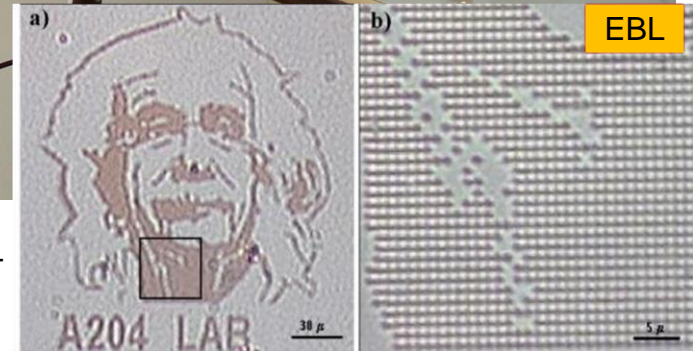


Dual beam scanning electron/ focused ion beam system (Tescan Lyra I XMU)

- ☑ **SEM** (with High / Medium / Low vacuum mode up to 500 Pa) ▪ SE ▪ BSE
- ☑ **EDX** (Energy-dispersive X-ray spectroscopy & imaging) - *Quantax 200, Bruker*
- ☑ **FIB** ▪ IB imaging ▪ IB sputtering - *Orsay Physics*
- ☑ **GIS** ▪ Deposition: W, Pt, SiO_x ▪ Etching: XeF₂, H₂O - *Orsay Physics*



SEM Hitachi S-570 (upgraded)



- ☑ **SEM** ▪ SE ▪ SE in lens ▪ digital imaging ✗ GT
- ☑ **EBL** (Electron beam lithography) ✗ GT
- ☑ **CL** (Cathodoluminescence) ✗ DD, KK
- ☑ Ideas & new experiments testing ;-) ✗ DL, KG, KK etc

DC magnetron sputtering Au K500X
(Quorum Technologies)



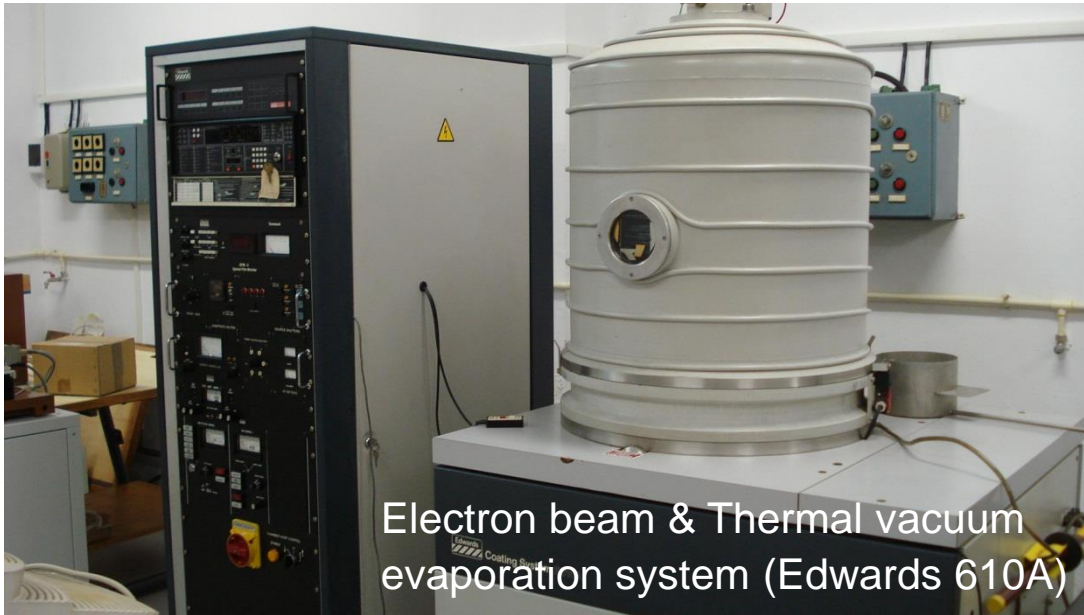
Carbon sputtering system
(Quorum Technologies)



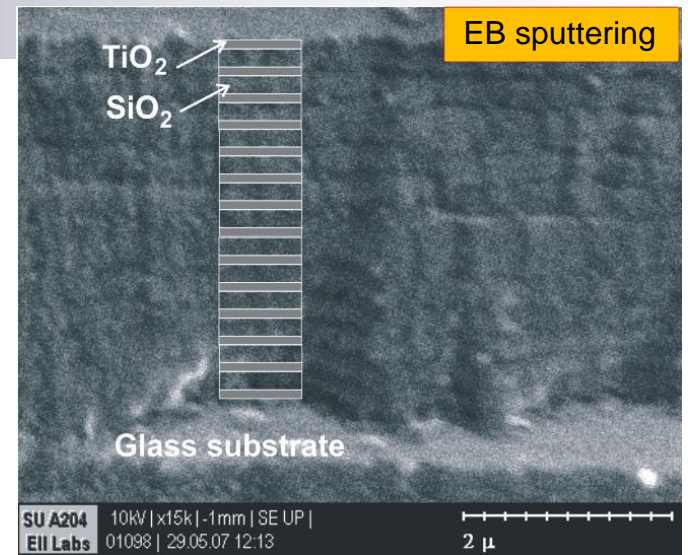
Sample preparation

- Gold
- Carbon

Equipment: Thin layers. Coating



Electron beam & Thermal vacuum evaporation system (Edwards 610A)



RF magnetron sputtering (Edwards 306A)

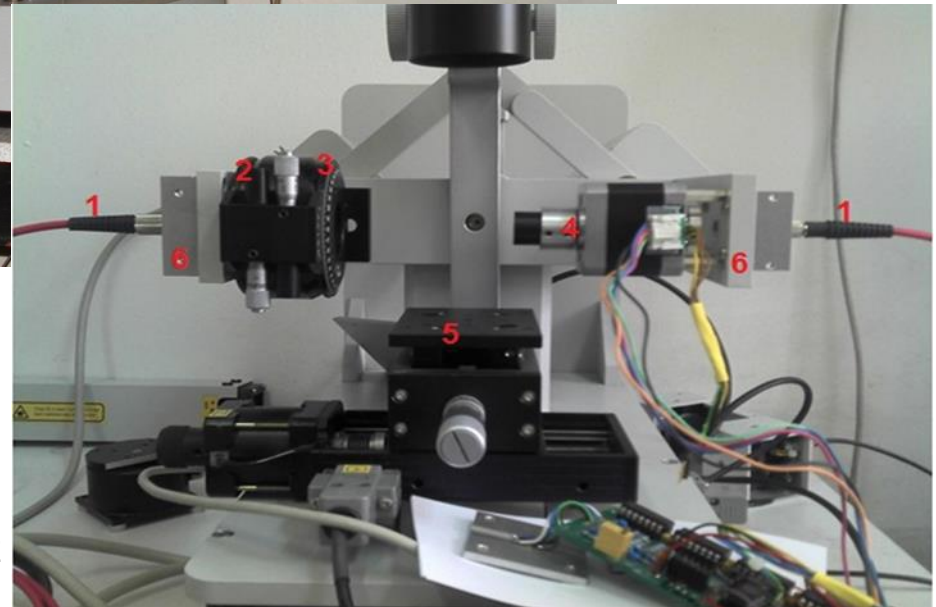


Spin coaters (Headway Research)

PCSA null & PCSrotAA multiangle spectroscopic ellipsometer



...TA,,MB...GT

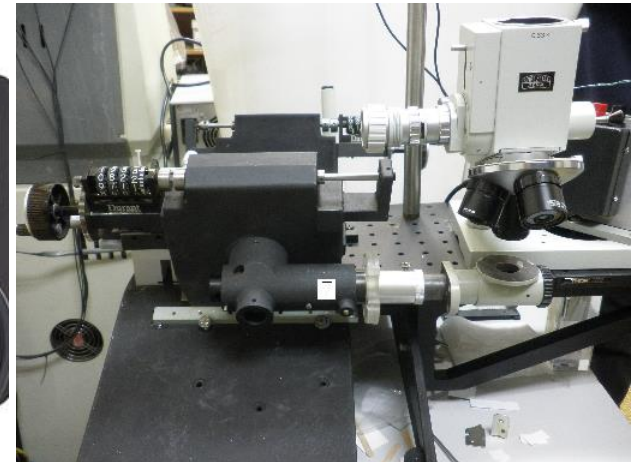


AZ


Equipment: Imaging. Spectroscopy. Plasmonics



AZ



DL

Water purification



Chem. preparation



Vacuum drying

Weighing



U-sonic cleaning



Centrifugation

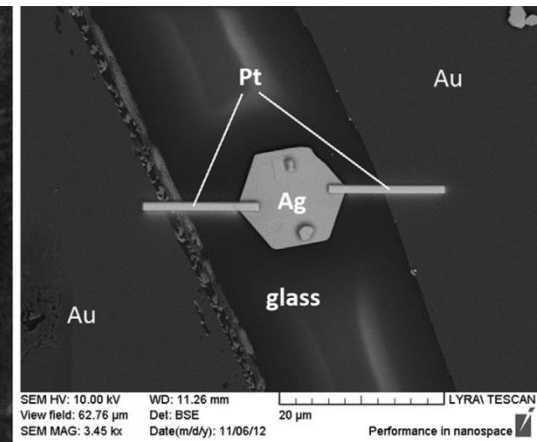
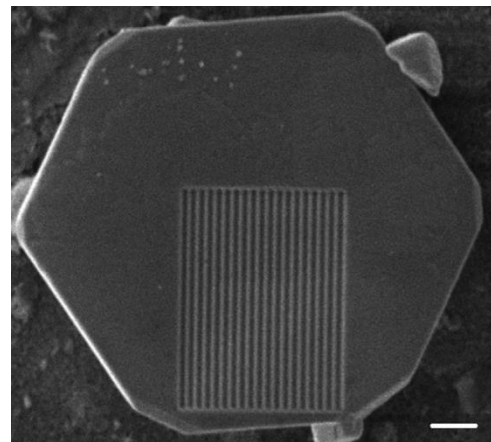
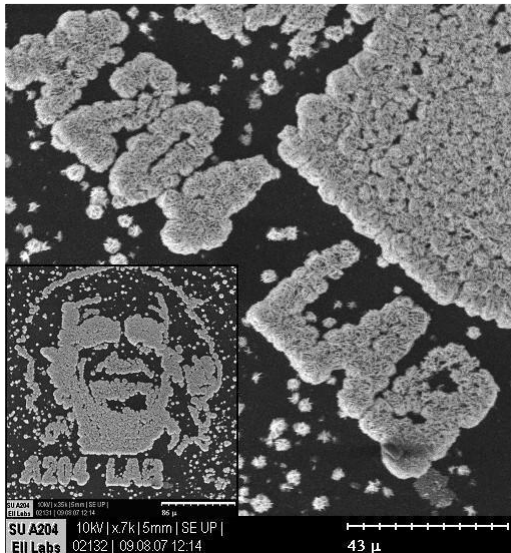
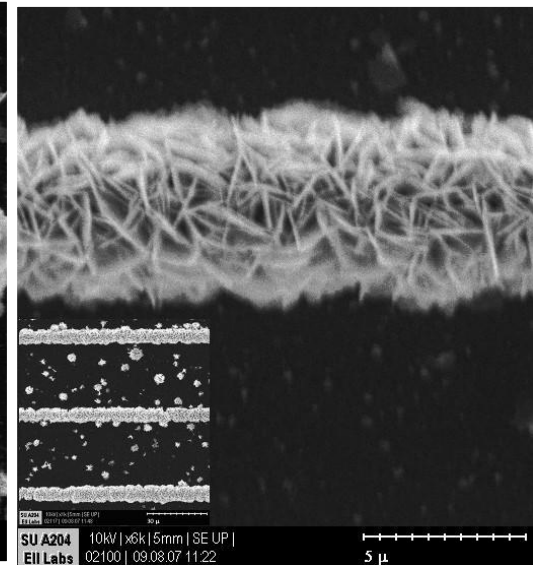
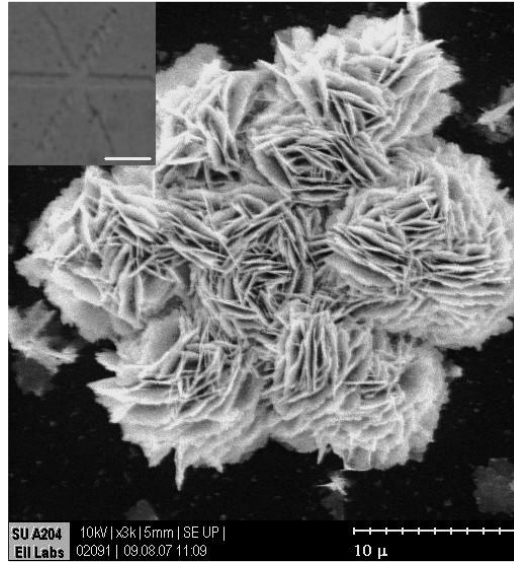
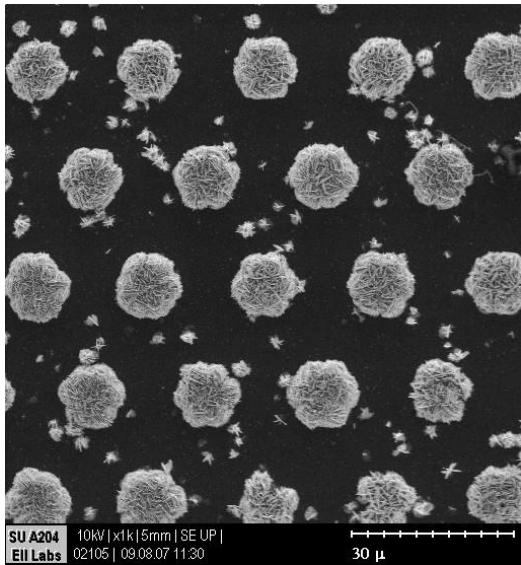


Текущи проблеми и задачи

- Получаване и изследване на материали и микро структури за плазмоника
- Елипсометрия на микрообекти и структури. Елипсометрия + СЕМ?
- Характеризиране и компенсирание на плазмонни загуби
- Получаване и модификация на микроструктури с термична обработка

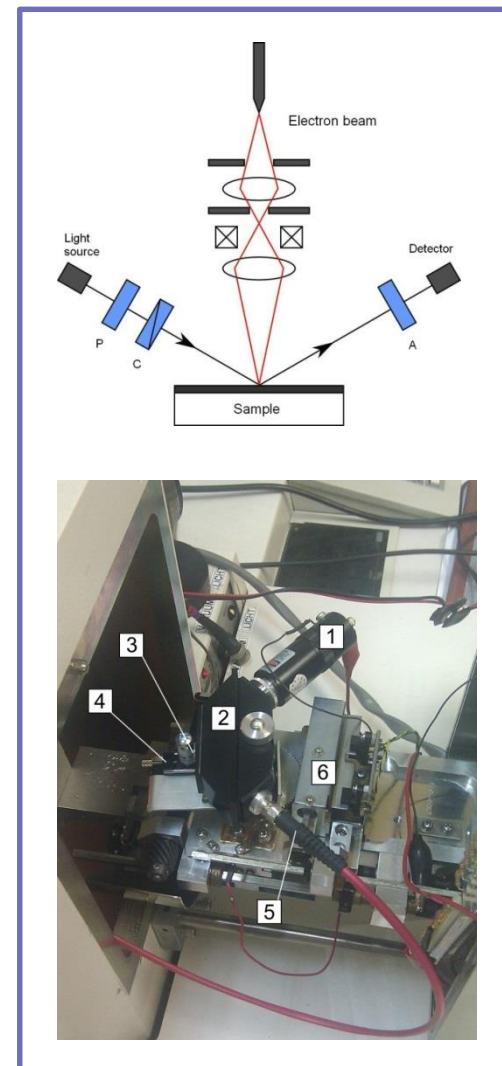
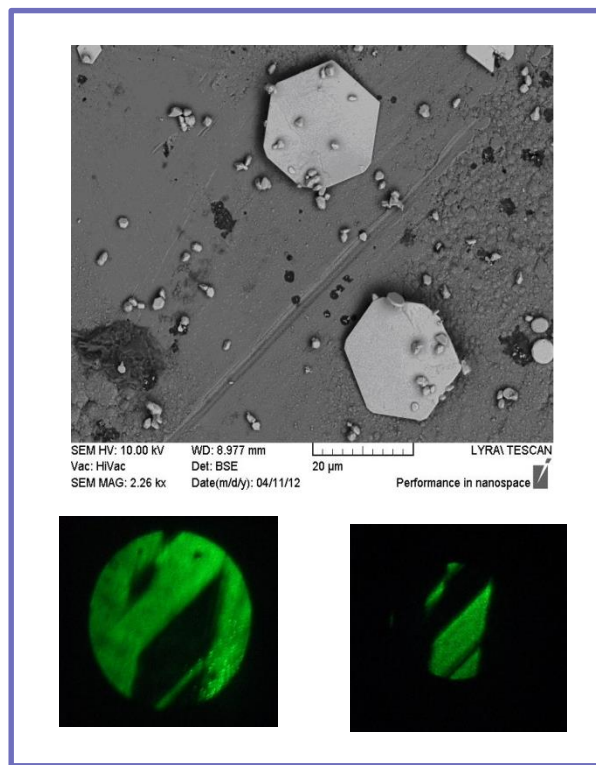
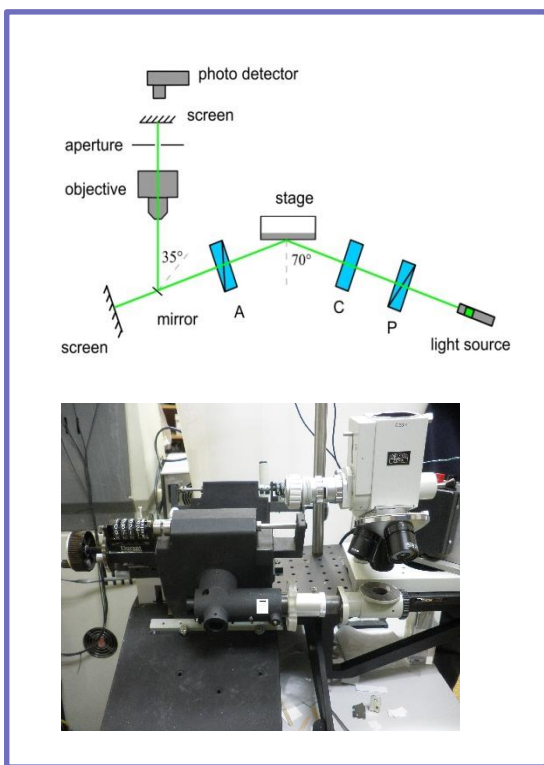


Получаване и изследване на материали и микро структури за плазмоника

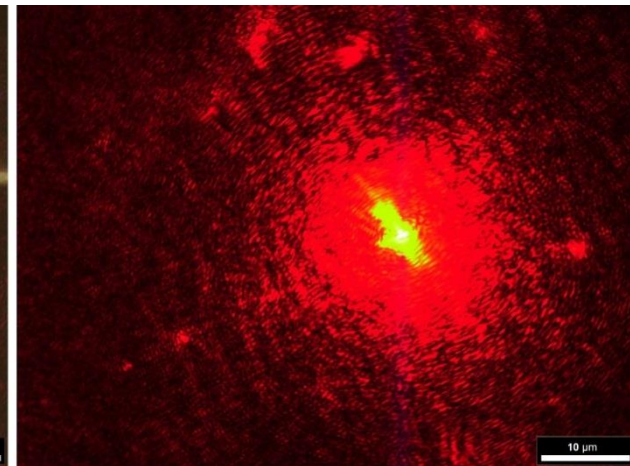
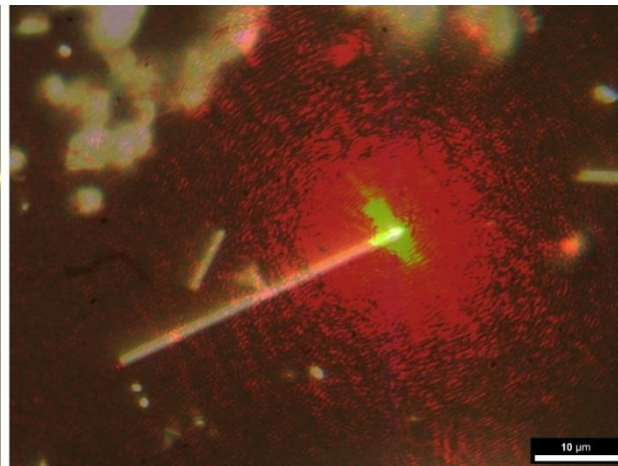
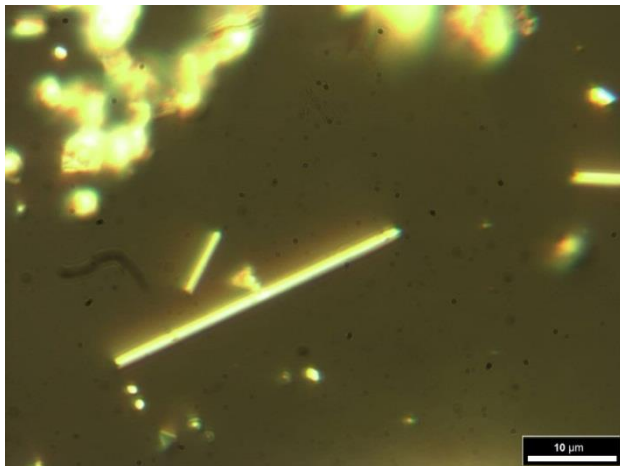
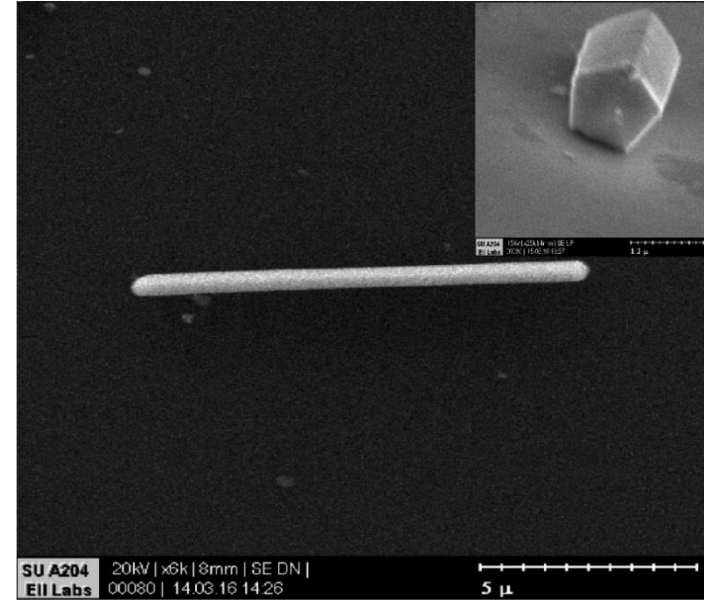
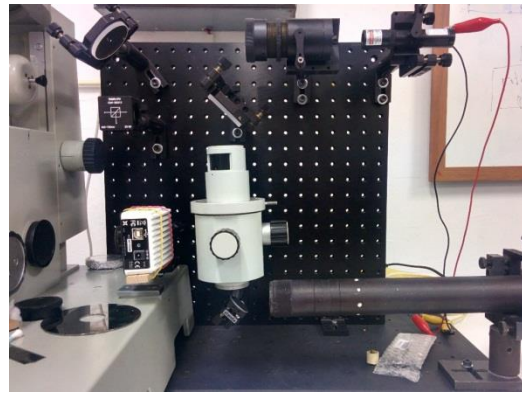
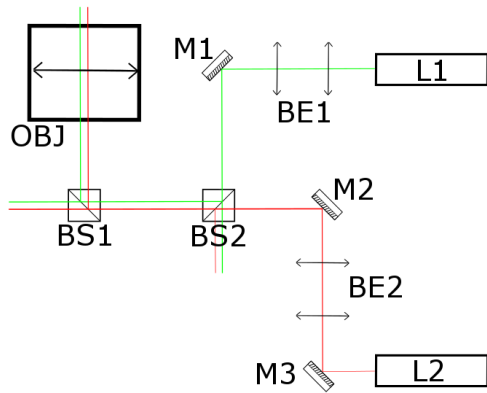


Елипсометрия + СЕМ

Елипсометрия на микрообекти и структури

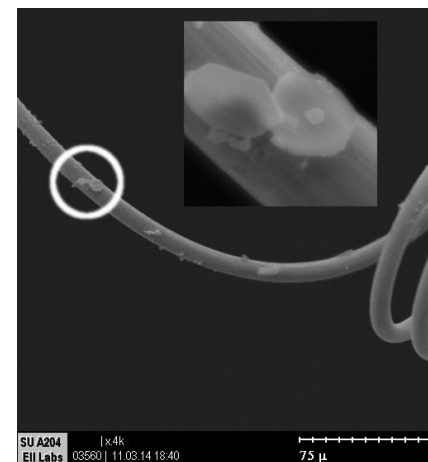
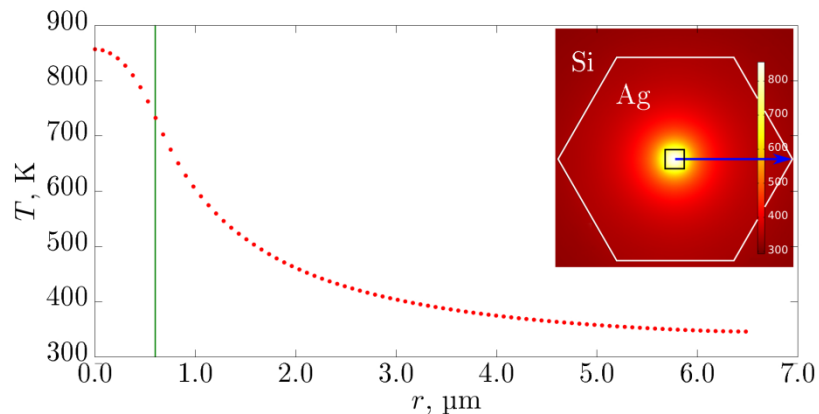


Характеризиране и компенсирание на плазмонни загуби

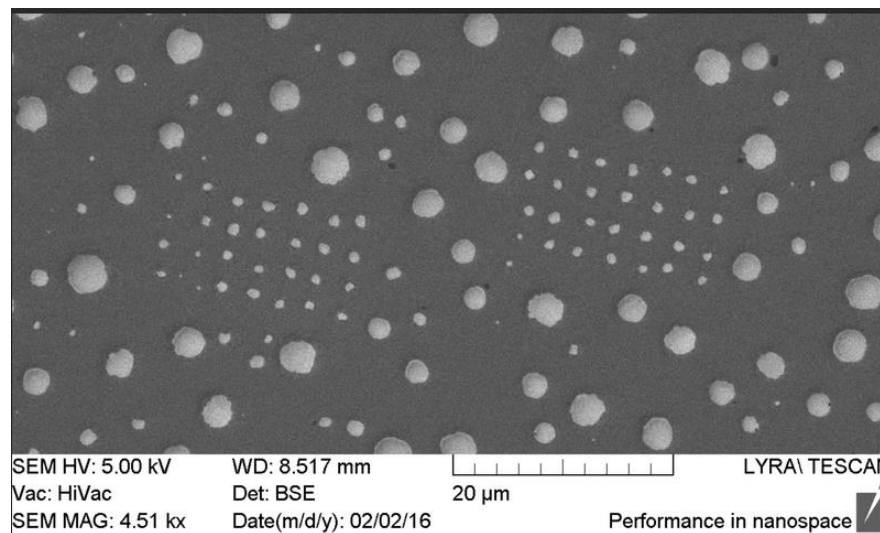
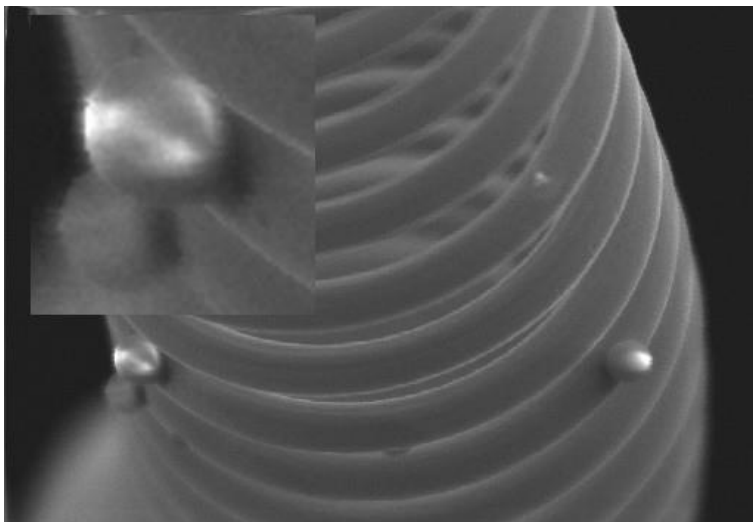


Получаване и модификация на микро и наноструктури с термична обработка

- Отгряване на микро и нанообекти с е-лъч. Зонно отгряване?



- Получаване на микро и нанообекти и структури





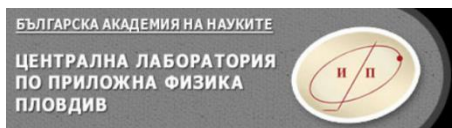
- **Sofia University "St. Kliment Ohridski"**
 - [Department of Physics](#)
 - [Department of Chemistry](#)
 - [Department of Geology and Geography](#)
 - [Department of Biology](#)
 - [Department of Medicine](#)
- **Institute of Microbiology - BAS**
- **University for transport "Todor Kableshev"**
- **University for Mining and Geology "St. Ivan Rilski"**
- **Institute of Solid State Physics - BAS**
- **Medical University - Sofia.**



ХИМИКОТЕХНОЛОГИЧЕН И
МЕТАЛУРГИЧЕН УНИВЕРСИТЕТ



МЕДИЦИНСКИ УНИВЕРСИТЕТ - ВАРНА
Проф. д-р Параскев Стоянов



Технически университет - София
Ние **успяваме!**

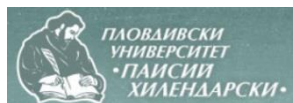


МИННО-ГЕОЛОЖКИ
УНИВЕРСИТЕТ | СВ. ИВАН РИЛСКИ



ИНСТИТУТ ПО МИКРОБИОЛОГИЯ СТЕФАН АНГЕЛОВ

СУ Център за славяно-византийски проучвания "Проф. Иван Дуйчев"



ИНСТИТУТ ПО ОРГАНИЧНА ХИМИЯ
С ЦЕНТЪР ПО ФИТОХИМИЯ
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