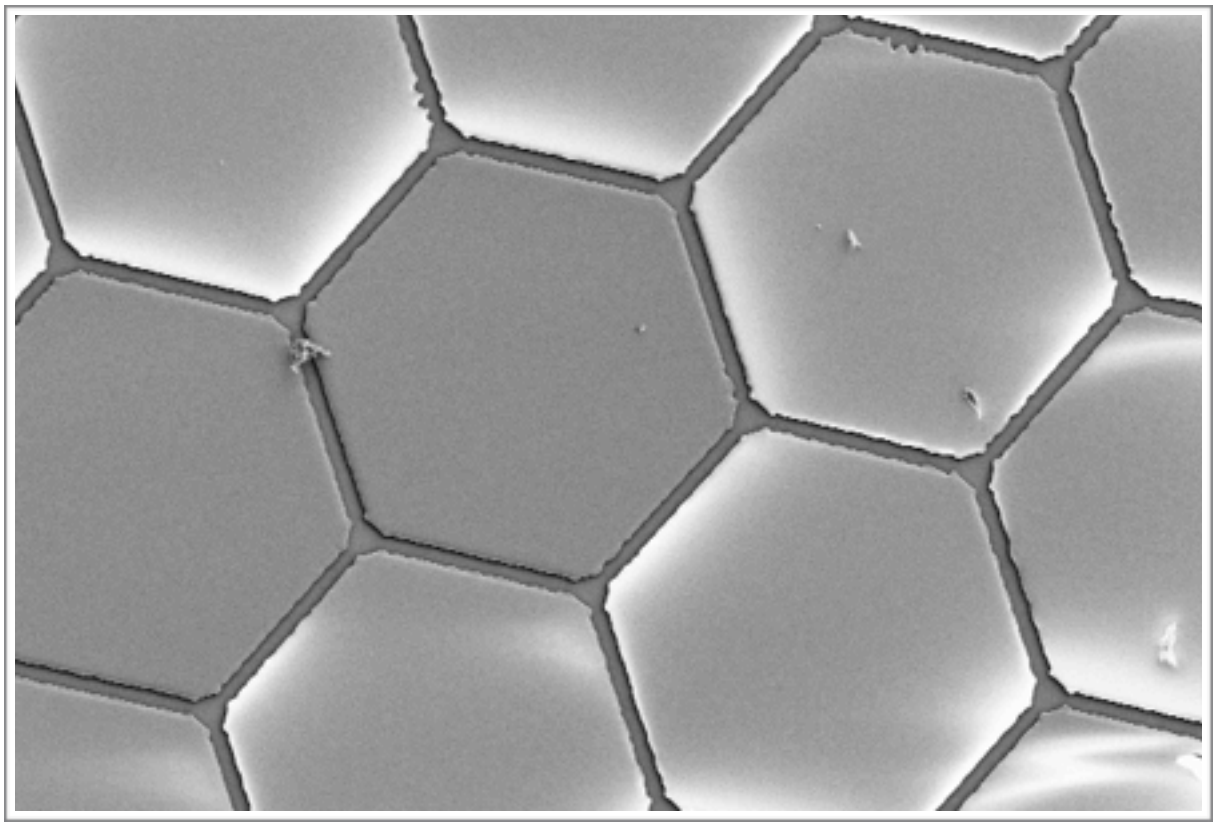
ELİF BETÜL MERİÇ

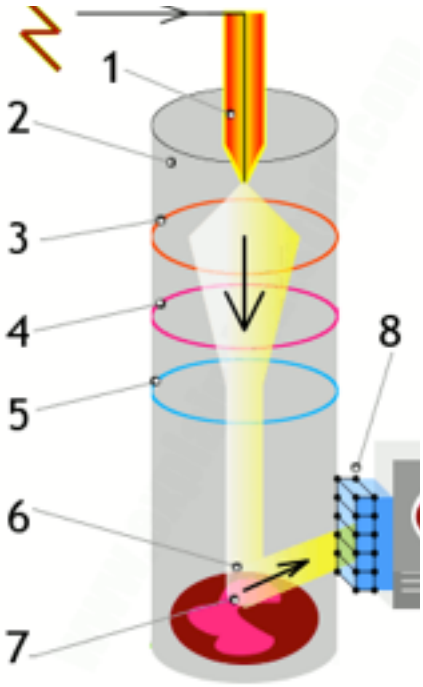
ENS413 LAB REPORT VII

Scanning Electron Microscope



INTRODUCTION

SEM is a microscope which has a powerful electron gun on the top and it shoots electron beams down to specimen. E-beam is pulled back and forth to scan across the sample. Electrons bounced and reflected and we can observe on screen. It is very powerful that we can see every tiny particle.



1- Electron gun fires the electrons.

2. Vacuum chamber for electrons can move easily.

3. Anode which pulls electrons

4. Electromagnetic coil , it helps focus like a optic lens

5. Another electromagnetic coil, electrons are steered from side to side.

6. The beam scans

7. Electrons are bouncing when they hit the sample

8.Detector catches the electrons that bounced and monitor them.

Preparing

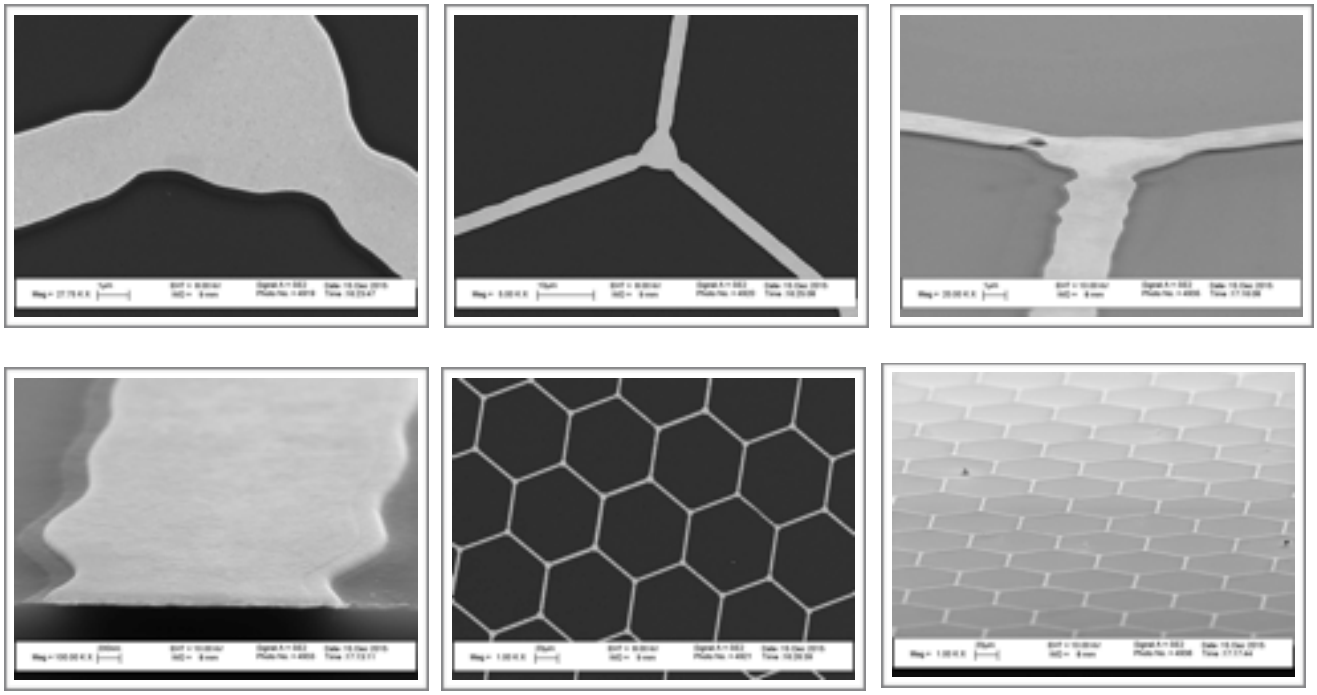
1-We get the samples from a vacuumed chamber. 2-Then we wiped some conductive liquid on it. 3-Then we put sample inside the microscope.

RESULTS

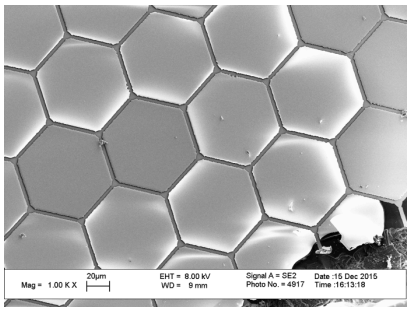
NEGATIVE

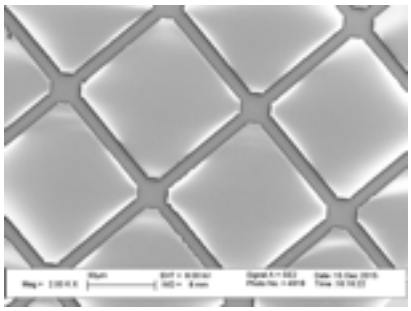
AFTER LIFT OFF

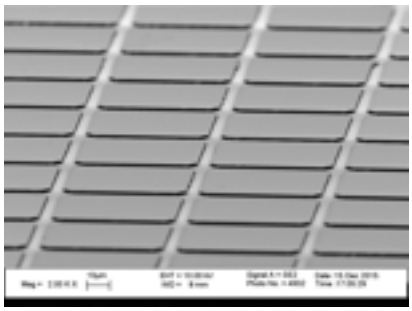
After lift-off we can see clear results, there is still some residue under the surface but on the surface we see the pattern clearly.

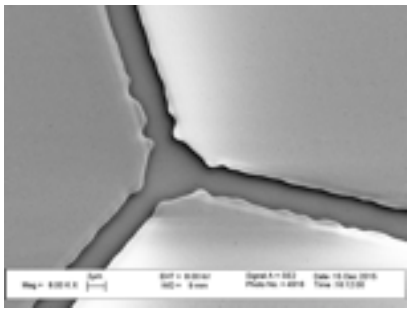


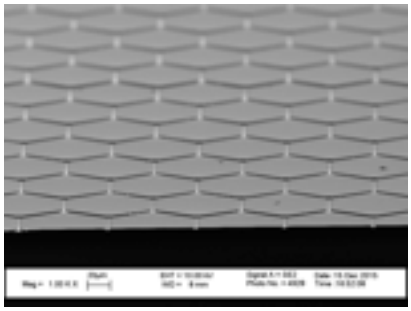
BEFORE LIFT OFF

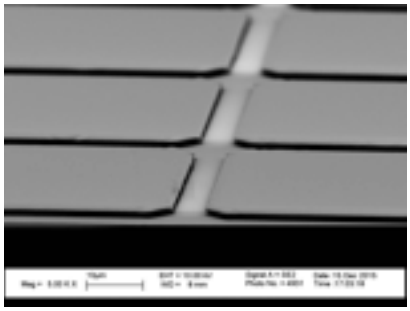


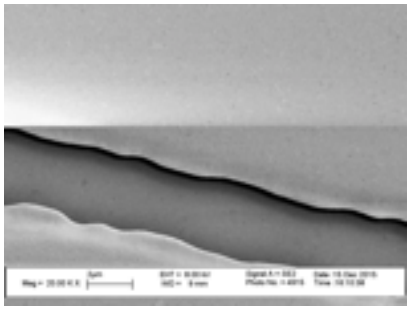


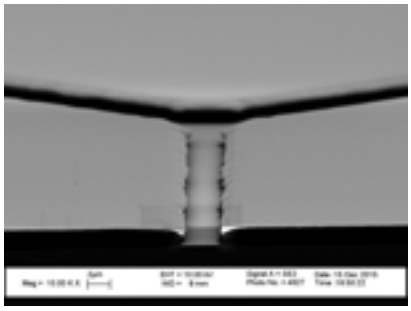


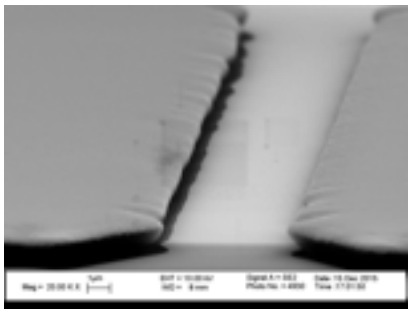


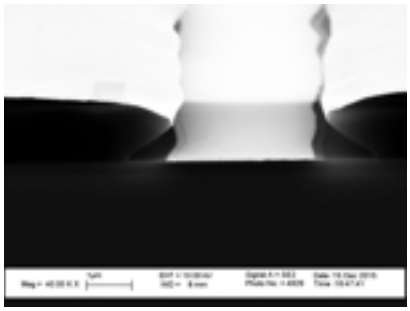


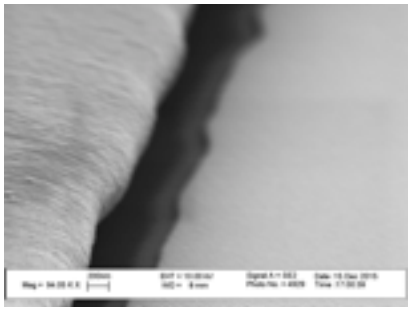












POSITIVE

BEFORE LIFT OFF