

Question 1: Oral examination

Describe the basic principles and the main features of a microscopy technique for the characterization of micro or nanostructures.

Question 2: Oral examination

Describe the basic principles and the main features of a technique for the deposition of thin films

Question 3: Oral examination

Describe the basic principles and the main features of a technique for the fabrication of nanostructures.

Question 4: Oral examination

Describe the basic principles and the main features of a technique for the characterization of the surface properties of a film.

Question 5: Oral examination

Describe the basic principles and the main features of an optical technique for the investigation of the properties of a thin film

Question 6: Oral examination

Describe the basic principles and the main features of a technique for the etching of thin films and/or micro-nanostructures

Writtent test #2

Describe the fabrication process of either (i) a device or (ii) a sample designed for the investigation of the properties of the constituent materials involved, chosen by the candidate.

1. Illustrate the structure of the device/sample.
2. Write the corresponding “run sheet”, i.e. the sequence of processes to be implemented for its fabrication.
3. Describe in more detail a characterization technique used as diagnostic tool during the fabrication of said device/sample

Writtent test #3

Describe the fabrication process of either (i) a device or (ii) a sample designed for the investigation of the properties of the constituent materials involved, chosen by the candidate.

1. Illustrate the structure of the device/sample.
2. Write the corresponding “run sheet”, i.e. the sequence of processes to be implemented for its fabrication.
3. Describe in more detail the investigation technique to be used for the characterization of the functional properties of said device or for the study of some specific properties of the materials involved in the sample.