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## Practice quiz Focused ion beam: local cross sectional inspection and measurement

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## Questions:

0 points possible (ungraded)

1. Which of the following statements correctly describe the focused ion beam (FIB) technique?

- ☐ In the sputtering mode of the FIB, a high electron beam current is used to remove material from the sample.
- ☒ The milling mode is used to remove material with better spatial precision and slower rate.
- ☐ Unlike scanning electron microscopy, there is no need for a conductive surface for FIB imaging.
- ☐ FIB is a non-invasive technique, which allows inspecting a multilayer device in its z dimension.



### Explanation

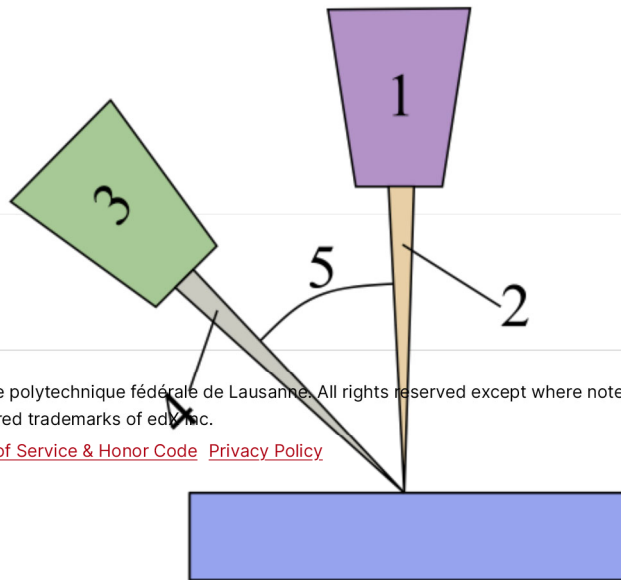
Focused ion beam is a technique in which positively charged ions are used to remove material from a surface. In its sputtering mode, a high ion current is used for fast removal of the material. To obtain smoother cross sections, a polishing step, which is called milling, is essential. The milling mode removes material from the surface with slower rate.

As for SEM, it is better to perform FIB on a conducting sample.

FIB allows removing locally material and therefore it is an invasive technique.

For further information, please see video "Focused ion beam: local cross sectional inspection and measurement" at 01:27.

2. The image below is a scheme of a dual-beam FIB/SEM system. Match the components with the corresponding description



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1:

FIB pole

✓ Answer: FIB pole

2:

Ion beam

✓ Answer: Ion beam

3:

SEM pole ▾

✔ Answer: SEM pole

4:

Electron beam ▾

✔ Answer: Electron beam

5:

52 degree ▾

✔ Answer: 52 degree

#### Explanation

Please see video "Focused ion beam: local cross sectional inspection and measurement" at 02:54.

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