Intro quiz

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Questions:

0 points possible (ungraded)

1. Which of the following statements regarding inspection and metrology are true?

- [ ] The inspection and metrology should be minimized because they are time consuming and costly.
- [x] The inspection and metrology are conducted in order to evaluate the processes' performance and to make sure that they are properly conducted.
- [ ] The inspection and metrology can only be done at the end of the process flow to check the MEMS' performance.
- [x] Some inspection and metrology methods are invasive, therefore possible effects on the device under study must be taken into consideration.

✔

Explanation

Indeed, the inspection and metrology are time consuming and costly, but if we can find potential issues as early as possible during the fabrication process, instead of only at the end of the entire process flow, we could stop and solve the issue immediately to save unnecessary waste of time and cost for the following processes.

2. What can we do to avoid or minimize the measurement error?

- [x] Periodic calibration of the metrology tool
- [x] Statistical analysis of the measurement results
- [x] Assure that the sample is in proper condition for the specific measurement
- [x] Comparison of the results obtained from different measurement approaches

✔

Explanation

The performance of metrology tool could drift over time just like other typical machines. Therefore, periodical calibration is required to ensure accurate measurement results.
Using statistical analysis, the outlier or personal error can be ruled out.
As for systematic error, comparing the measurement result obtained from different measurement tools or approaches is helpful to find it out and avoid it.

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Answers are displayed within the problem

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