Mems Process Engineer (microelectromechanical Systems Process Engineer) Interview Question

1. What kind of experience do you have researching or developing emerging microelectromechanical (MEMS) systems to convert nontraditional energy sources into power, such as ambient energy harvesters that convert environmental vibrations into usable energy?
2. Tell me the last time you designed or developed sensors to reduce the energy or resource requirements to operate appliances, such as washing machines or dishwashing machines.
3. What is the most challenging part of designing or developing energy products using nanomaterials or nanoprocesses, such as micro-nano machining?
4. What is your approach when considering environmental issues when proposing product designs involving microelectromechanical systems (MEMS) technology?
5. Walk me through how you would manage new product introduction projects to ensure effective deployment of microelectromechanical systems (MEMS) devices or applications.
6. Explain to me how you would identify, procure, or develop test equipment, instrumentation, or facilities for characterization of microelectromechanical systems (MEMS) applications.
7. Share an example when you developed and verified customer documentation, such as performance specifications, training manuals, and operating instructions.
8. What is the most challenging part of developing and communicating operating characteristics or performance experience to other engineers and designers for training or new product development purposes?
9. Describe an experience when you demonstrated miniaturized systems that contain components such as microsensors, microactuators, or integrated electronic circuits fabricated on silicon or silicon carbide wafers.
10. Describe methods you have found effective to conduct acceptance tests, vendor-qualification protocols, surveys, audits, corrective-action reviews, or performance monitoring of incoming materials or components to ensure conformance to specifications.
11. What factors do you consider when proposing product designs involving microelectromechanical systems (MEMS) technology, considering market data or customer requirements?

12. What kind of experience do you have operating or maintaining microelectromechanical systems (MEMS) fabrication and assembly equipment, such as handling, singulation, assembly, wire-bonding, soldering, and package sealing?
13. Describe methods you have found effective to evaluate and select materials, fabrication methods, joining methods, surface treatments, or packaging to ensure acceptable processing, performance, cost, and availability.
14. Share an effective approach to develop or validate specialized materials characterization procedures, such as thermal withstand, fatigue, notch sensitivity, abrasion, or hardness tests.
15. Tell me about the last time you developed or validated product-specific test protocols, acceptance thresholds, or inspection tools for quality control testing or performance measurement.
16. What factors do you consider when developing formal documentation for microelectromechanical systems (MEMS) devices, including quality assurance guidance, quality control protocols, process control checklists, data collection, or reporting?
17. Share an example when you effectively conducted or oversaw the conduct of prototype development or microfabrication activities to ensure compliance to specifications and promote effective production processes.
18. Walk me through how you would conduct experimental or virtual studies to investigate characteristics and processing principles of potential microelectromechanical systems (MEMS) technology.
19. Name a time when you conducted analyses addressing issues such as failure, reliability, or yield improvement.
20. Tell me about the last time you conducted harsh environmental testing, accelerated aging, device characterization, or field trials to validate devices, using inspection tools, testing protocols, peripheral instrumentation, or modeling and simulation software.