Nanoelectronics Engineer Interview Questions

1. Describe methods you have found effective to integrate nanotechnology with antimicrobial properties into products, such as household or medical appliances, to reduce the development of bacteria or other microbes.
2. Name a time when you developed green building nanocoatings, such as self-cleaning, anti-stain, depolluting, anti-fogging, anti-icing, antimicrobial, moisture-resistant, or ultraviolet protectant coatings.
3. Share an example when you effectively developed catalysis or other green chemistry methods to synthesize nanomaterials, such as nanotubes, nanocrystals, nanorods, or nanowires.
4. What is the most challenging part of designing nanosystems with components such as nanocatalysts or nanofiltration devices to clean specific pollutants from hazardous waste sites?
5. What factors do you consider when designing nanoparticle catalysts to detect or remove chemical or other pollutants from water, soil, or air?
6. What is the key to success with designing nano-enabled products with reduced toxicity, increased durability, or improved energy efficiency?
7. What have you found to be the best way to design nano-based manufacturing processes to minimize water, chemical, or energy use, as well as to reduce waste production?
8. Describe an experience when you applied nanotechnology to improve the performance or reduce the environmental impact of energy products, such as fuel cells or solar cells.
9. Share an example when you effectively supervised technologists or technicians engaged in nanotechnology research or production.
10. Tell me the last time when you wrote proposals to secure external funding or to partner with other companies. Were you successful?
11. How often have you provided technical guidance or support to customers on topics such as nanosystem start-up, maintenance, or use? Share an example.
12. Share your approach to generate high-resolution images or measure force-distance curves, using techniques such as atomic force microscopy.

13. Describe an experience when you prepared reports, delivered presentations, or participated in program review activities to communicate engineering results or recommendations.
14. What have you found to be the best way to provide scientific or technical guidance or expertise to scientists, engineers, technologists, technicians, or others, using knowledge of chemical, analytical, or biological processes as applied to micro and nanoscale systems?
15. Share an example when you effectively developed processes or identified equipment needed for pilot or commercial nanoscale scale production.
16. Name a time when you engineered production processes for specific nanotechnology applications, such as electroplating, nanofabrication, or epoxy.
17. Have you ever designed or conducted tests of new nanotechnology products, processes, or systems?
18. What is the most challenging part of coordinating or supervising the work of suppliers or vendors in the designing, building, or testing of nanosystem devices, such as lenses or probes?
19. What kind of experience do you have designing or engineering nanomaterials, nanodevices, nano-enabled products, or nanosystems, using three-dimensional computer-aided design (CAD) software?
20. Walk me through how you would conduct research related to a range of nanotechnology topics, such as packaging, heat transfer, fluorescence detection, nanoparticle dispersion, hybrid systems, liquid systems, nanocomposites, nanofabrication, optoelectronics, or nanolithography.