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**Deposition Terminology Activity**

**Participant Guide**

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| Description and Estimated Time to Complete |
| In this activity you demonstrate your understanding of the terminology of deposition for microsystems. This activity consists of a   * **Crossword puzzle** that tests your knowledge of the terminology and acronyms associated with deposition processes.   If you have not reviewed the unit *Deposition Overview for Microsystems*, you should do so before completing this activity.  Estimated Time to Complete  Allow at least 30 minutes to complete this activity. |
| Activity Objective | |
| * Identify the correct terms used for several definitions or statements related to deposition processes. | |

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| Activity: Deposition Terminology |
| Procedure:  Complete the crossword puzzle using the clues on the following page.  deposition.wmf |

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| |  |  | | --- | --- | | **ACROSS** | **ANSWERS** | | 1. To heat the source in an evaporation process a(n) \_\_\_\_\_\_\_\_\_\_ or resistive component is used. |  | | 3. A process that deposits a thin film of material onto an object. |  | | 9. In electroplating, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the electrode that is coated. |  | | 10. Normally used for the deposition of metals and metal alloys. |  | | 12. A deposition process used to deposit a thin film of metal through the use of metal vapors. |  | | 14. The fourth state of matter. |  | | 15. PVD processes require a high \_\_\_\_\_\_\_\_\_\_\_\_ to prevent contamination within the deposited film. |  | | 20. Deposition processes in which the desired film material is vaporized either through heat or sputtering, and deposited on the substrate. |  | | 22. A thin film used for isolation, masking, protection and structural purposes. |  | | 24. In CVD processing, a homogeneous reaction occurs in the \_\_\_\_\_\_\_\_ phase. |  | | 25. A solution through which an electric current may be carried by the motion of ions. |  | | 27. Oxidation process that uses heat to grow silicon dioxide. |  | |

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| |  |  | | --- | --- | | **DOWN** | ***ANSWERS*** | | 1. Plasma-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CVD process (PECVD) |  | | 2. To use an electric current to coat an electrically conductive object with metal. |  | | 4. In a sputtering system, the source material is called the \_\_\_\_\_\_\_\_\_\_\_\_. |  | | 5. The process that grows a uniform layer of silicon dioxide on a silicon substrate. |  | | 6. Deposition occurs before photolithography and \_\_\_\_\_\_\_\_\_\_\_. |  | | 7. A thin film used for conductive and reflective material. |  | | 8. A type of deposition process used primarily to deposit photoresist and SOG. |  | | 11. A structural and piezoresistive thin film. |  | | 13. Plasma consists of electrons, radicals and \_\_\_\_\_\_\_\_\_. |  | | 16. The type of reaction that takes place in a CVD process. |  | | 17. A thin film grown to be used as a mask or sacrificial layer. |  | | 18. In CVD processing, a heterogeneous reaction takes place at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the wafer. |  | | 19. In CVD, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, temperature and the reactant's concentration control the film thickness. |  | | 21. A PVD process by which atoms are ejected from a source material. |  | | 23. In electroplating, the metallic ions of the \_\_\_\_\_\_\_\_\_\_ in the electrolyte carry a positive charge. |  | | 26. Chemical Vapor Deposition |  | |
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