
Deposition Terminology Activity

Instructor Guide

Notes to Instructor

This activity provides the participants an opportunity to identify their understanding of the terminology of deposition processes. Participants should read the PK unit before doing this activity.

The *Deposition Overview for Microsystem Learning Module* consists of the following.

- Knowledge Probe (KP) - pretest
- Deposition Overview for Microsystems PK
- **Deposition Terminology Activity**
- Science of Thin Films Activity (Supporting SCME Kit available)
- What Do You Know About Deposition? Activity
- Final Assessment

This companion Instructor Guide (IG) contains all of the information in the PG as well as answers to the Post-Activity questions.

Description and Estimated Time to Complete

In this activity you will 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.

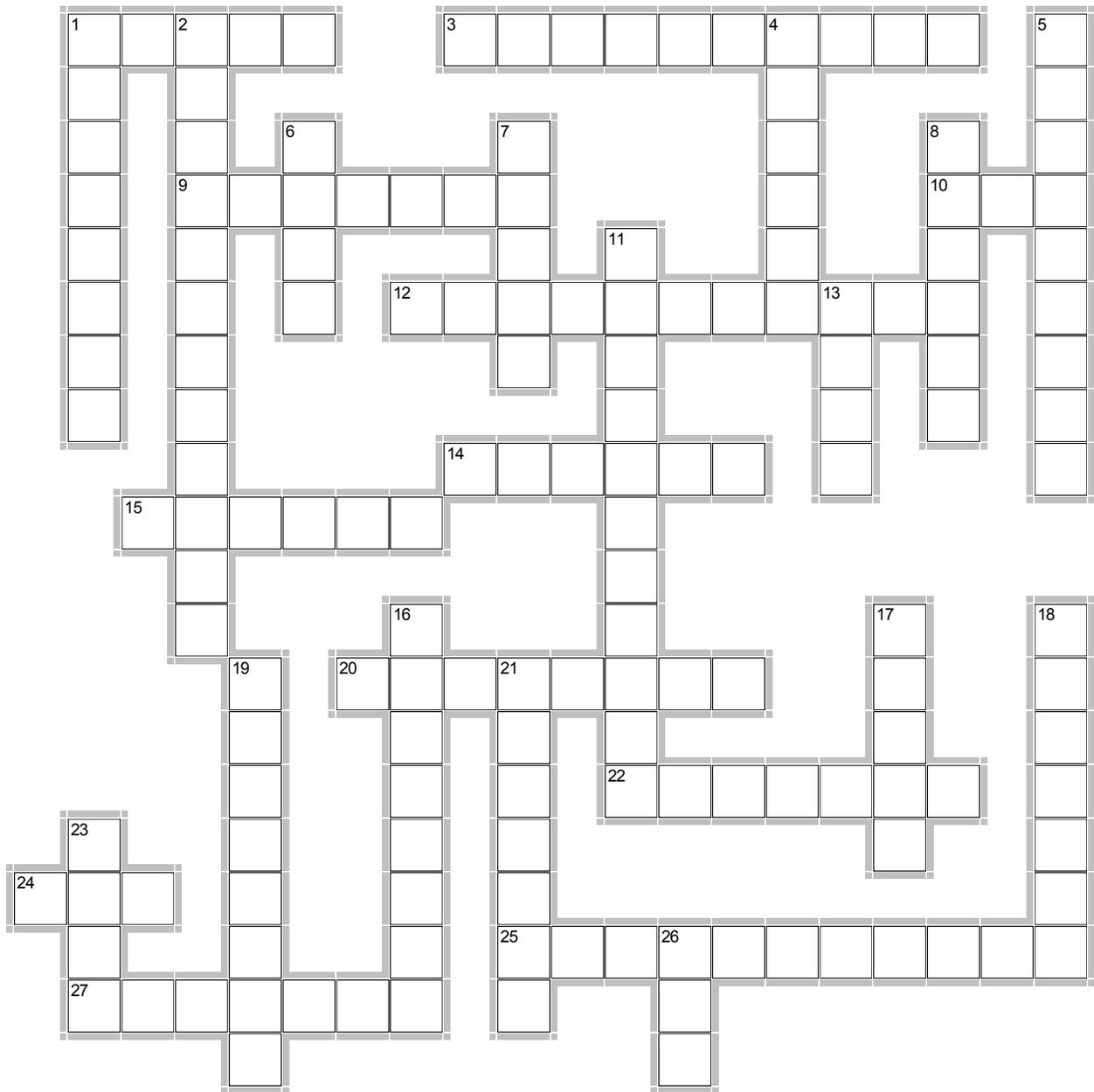
Activity Objective

- Identify the correct terms used for several definitions or statements related to deposition processes.

Activity: Deposition Terminology

Procedure:

Complete the crossword puzzle using the clues on the following page.

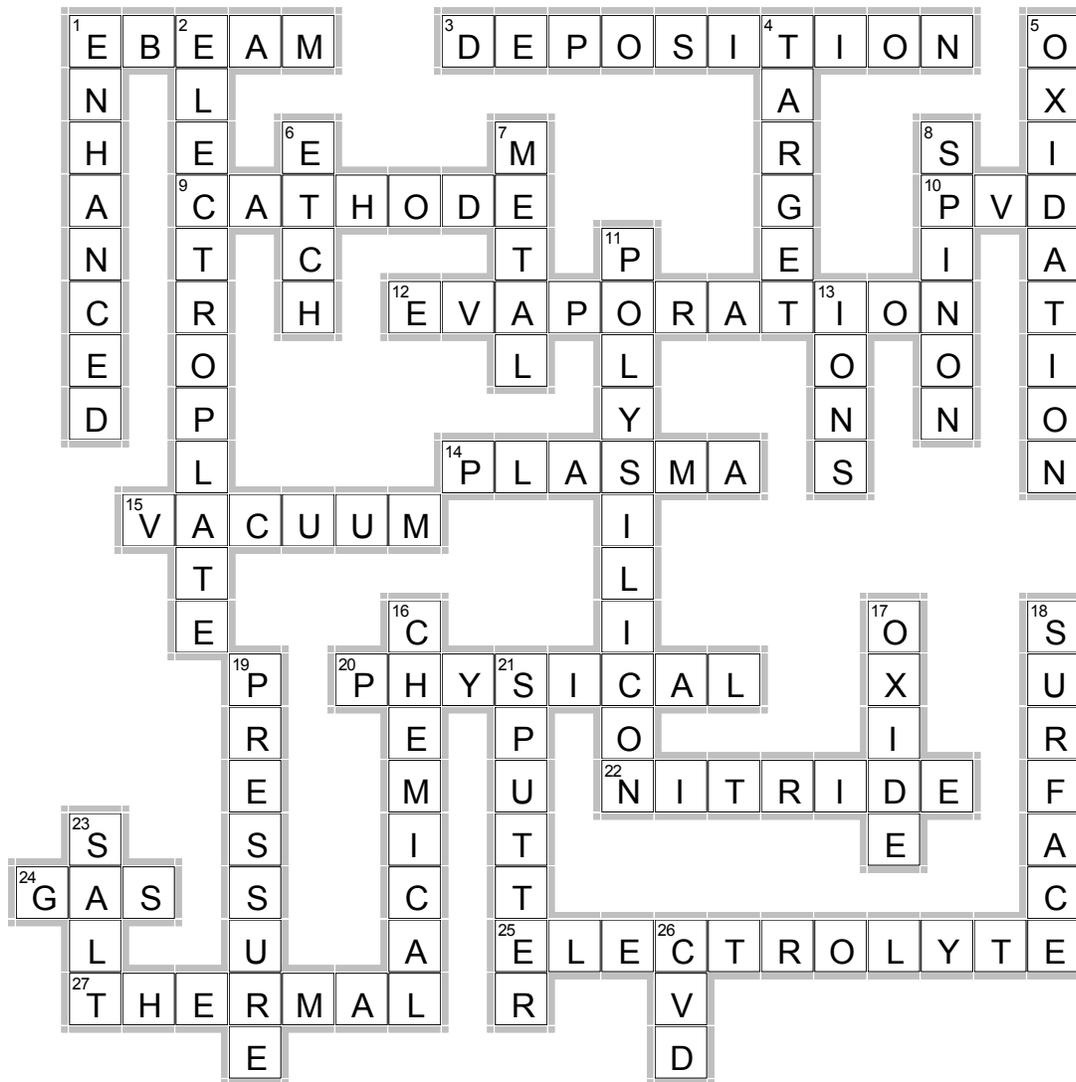


EclipseCrossword.com

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

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

Answer Key to Crossword Puzzle – Deposition Terminology



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