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Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur

(Autonomous)

Department of Physics

ICT based CIE

on

M.Sc. II: Internal Examination of Thin Film Deposition and Other Techniques

Conducted by

Miss. S. M. Kumbhar

On

Date: 26-03-2021, Time: 12.00 am to 12.25 am

(2020 – 21)

Vivekanand College, Kolhapur. (Autonomous)Department of Physics M. Sc. II (Internal examination – II)

Paper code – 1113C

Name of the course - Thin film deposition and other techniques

Date – 26-03-2021

Time – 12.00 am to 12.25 am

* Indicates required question

1. Email *

2. Name *

3. Roll No. *

4. email ID *

5. PRN No. *

6. How many deposition techniques (main growth techniques) are there?

Mark only one oval.

- a. 2
- b. 3.
- c. 4
- d. 5

7. Low pressure chemical vapor deposition (LPCVD) is used to _____

Mark only one oval.

- a. increase the purity of the film
- b. to reduce the roughness of the film
- c. to form thick films
- d. to reduce stress on the film

8. Choose the incorrect step involved in PVD technique.

Mark only one oval.

- a. Physical ejection of material as atom or molecules
- b. Condensation of the atoms or molecules
- c. Nucleation of the atoms or molecules
- d. Chemical reaction takes place during the deposition

9. Which of the following deposition process is the most widely used process for the deposition of thin films such as silicon nitride, silicon dioxide and polysilicon?

Mark only one oval.

- a. Spin process
- b. Chemical vapor deposition
- c. Physical vapor deposition
- d. Electroplating

10. Which of the following deposition process is used when a film needs to be deposited on both sides of the wafer?

Mark only one oval.

- a. LPCVD
- b. PECVD
- c. Evaporation
- d. Sputtering

11. In which of the following technique precursor is in liquid form?

Mark only one oval.

- a. Hot wire CVD
- b. Laser induced CVD
- c. Plasma enhanced CVD
- d. Direct liquid injection CVD

12. Which of the following is a liquid phase thin film deposition method?

Mark only one oval.

- a. CVD
- b. PVD
- c. ALD
- d. Sol gel

13. Unit of vapor pressure could be-----

Mark only one oval.

- a. Pascal
- b. torr
- c. mbar
- d. all of above

14. The plasma in ion plating helps in-----

Mark only one oval.

- a. Sputtering the target for deposition
- b. Sputtering the substrate for deposition
- c. Sputtering the substrate for surface cleaning
- d. Sputtering the target for chemical reaction

15. SILAR stands for

Mark only one oval.

- a. successive ionic layer adsorption and reaction
- b. successive ionic layer absorption and reaction
- c. successive ionic layer absorption and reflux
- d. successive ionic layer adsorption and readsorption

16. Which of the following method is low cost method?

Mark only one oval.

- a. SILAR
- b. CBD
- c. Sputtering
- d. both a and b

17. In SILAR deposition technique why we use distilled water beaker?

Mark only one oval.

- a. to remove loosely adsorbed ions
- b. to remove excessive material form over substrate
- c. to make bonding with solute and solvent
- d. To absorb oxygen from H₂O

18. Which of the following method gives more adherent thin films?

Mark only one oval.

- a. spray pyrolysis technique
- b. CBD
- c. SILAR
- d. Both a and b

19. Which of the following method gives more stable and layer by layer deposition thin films?

Mark only one oval.

- a. spray pyrolysis technique
- b. CBD
- c. SILAR
- d. Both b and c

20. The principle of electroplating----

Mark only one oval.

- a. Hydrolysis
- b. Neutralization
- c. Esterification
- d. Saturation

21. Which of the following is not an application of electroplating?

Mark only one oval.

- a. Decorative purposes
- b. Coating of metal
- c. Metal protection
- d. Corrosion prevention

22. Which of the following is not a characteristic of electrolyte?

Mark only one oval.

- a. Enables transportation of electrons
- b. Determines the strength of the metal
- c. Determines solubility
- d. Identifies discharge scale

23. Charge carriers need to be absorbed by the materials and hence ----- can be used as an electrolyte to absorb charge carrier metal.

Mark only one oval.

- a. Sodium solution
- b. NaCl solution
- c. Water
- d. Immiscible liquids

24. In sputtering, the target serves as the:

Mark only one oval.

- a. Cathode
- b. Anode
- c. Neutral electrode
- d. None of the above

25. The spin coating process whereby the thin film thickness can be change by changing

Mark only one oval.

- a. the spin speed of the spin coater
- b. the viscosity of the liquids
- c. Both a and b
- d. None of the above

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Gadekar Mahesh Madhav

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Chavan jayashri madhukar

Ankita ravindra digraje

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Shivani Prakash Patil

Pooja Sadanand Jadhav

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Shraddha Sanjay kumbhar

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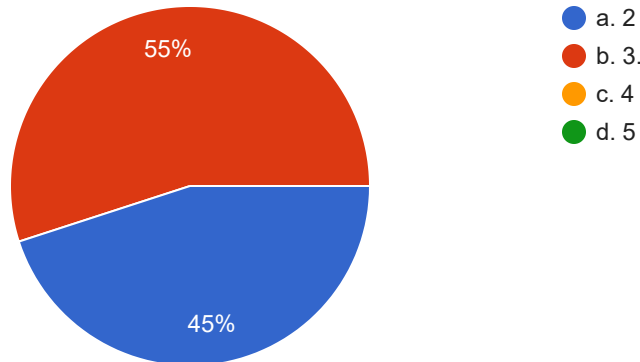


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How many deposition techniques (main growth techniques) are there?



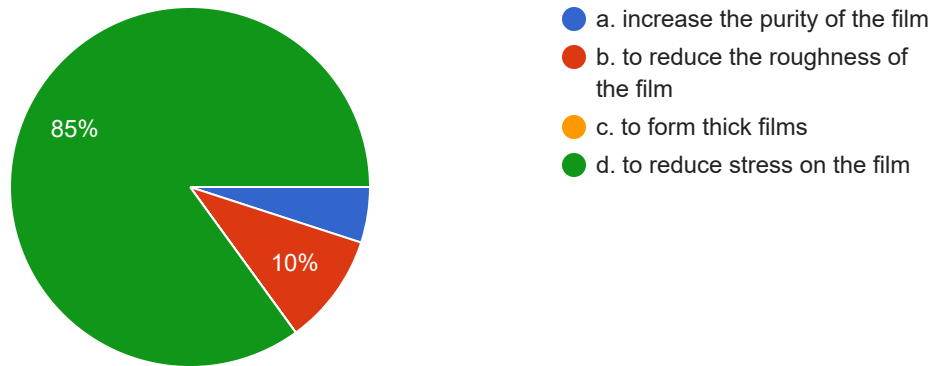
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Low pressure chemical vapor deposition (LPCVD) is used to_____



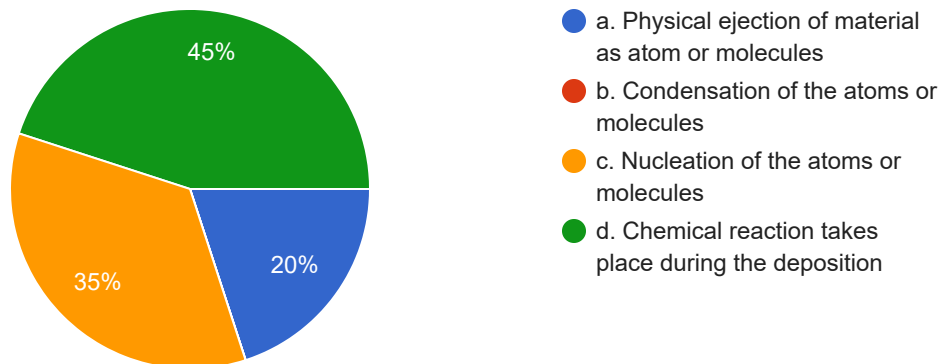
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Choose the incorrect step involved in PVD technique.



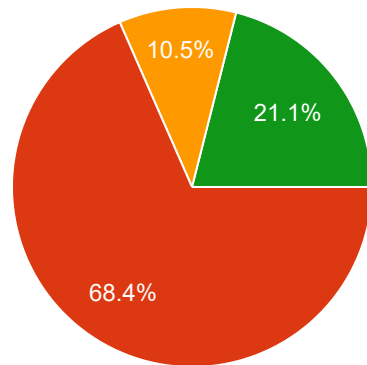
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Which of the following deposition process is the most widely used process for the deposition of thin films such as silicon nitride, silicon dioxide and polysilicon?

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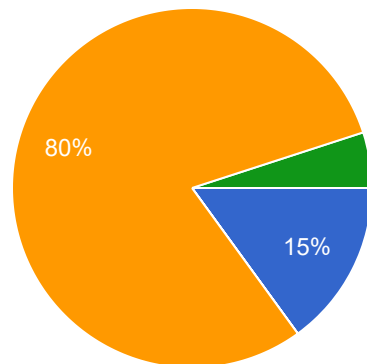


- a. Spin process
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- c. Physical vapor deposition
- d. Electroplating

Which of the following deposition process is used when a film needs to be deposited on both sides of the wafer?

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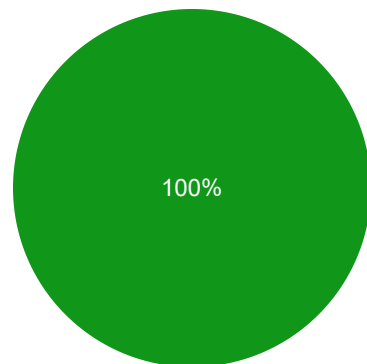


- a. LPCVD
- b. PECVD
- c. Evaporation
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In which of the following technique precursor is in liquid form?

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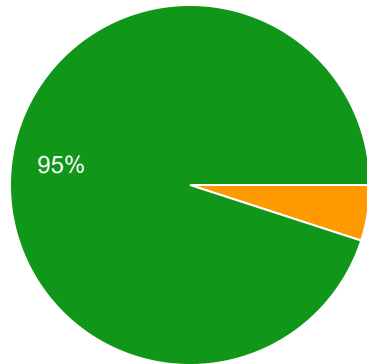
- a. Hot wire CVD
- b. Laser induced CVD
- c. Plasma enhanced CVD
- d. Direct liquid injection CVD



Which of the following is a liquid phase thin film deposition method?

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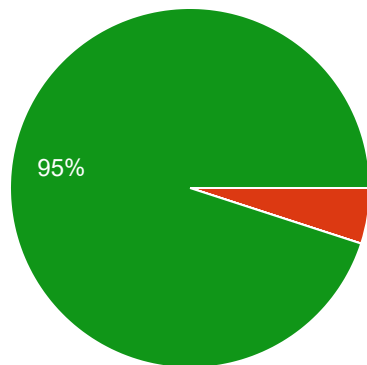


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Unit of vapor pressure could be-----

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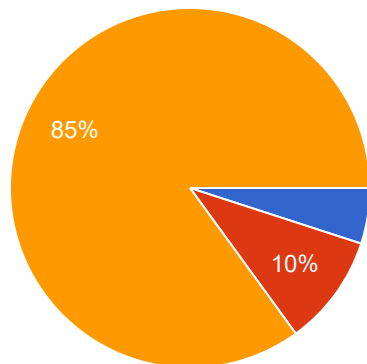


- a. Pascal
- b. torr
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The plasma in ion plating helps in-----

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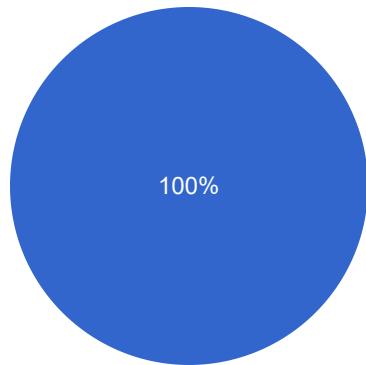
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SILAR stands for

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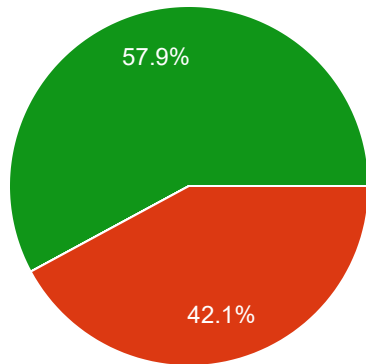


- a. successive ionic layer adsorption and reaction
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Which of the following method is low cast method?

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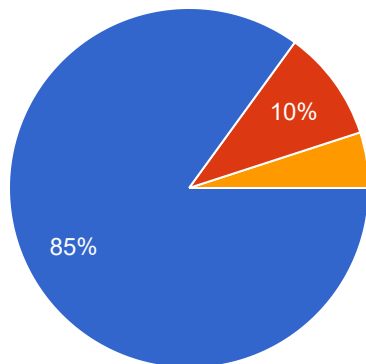


- a. SILAR
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In SILAR deposition technique why we use distilled water beaker?

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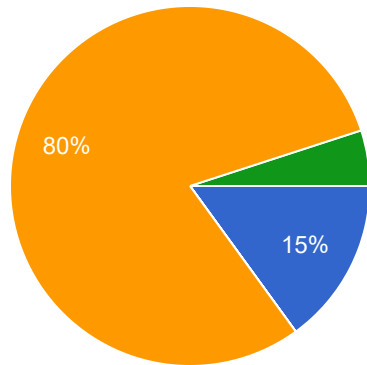
- a. to remove loosely adsorbed ions
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Which of the following method gives more adherent thin films?

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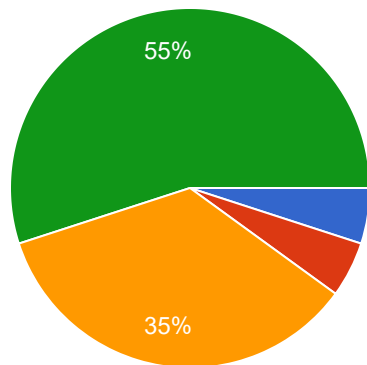


- a. spray pyrolysis technique
- b. CBD
- c. SILAR
- d. Both a and b

Which of the following method gives more stable and layer by layer deposition thin films?

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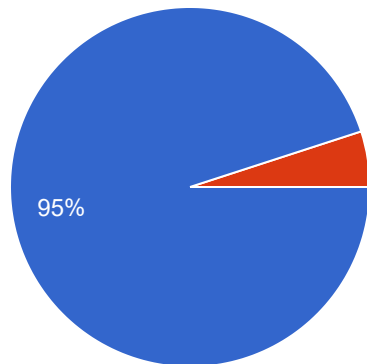


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The principle of electroplating----

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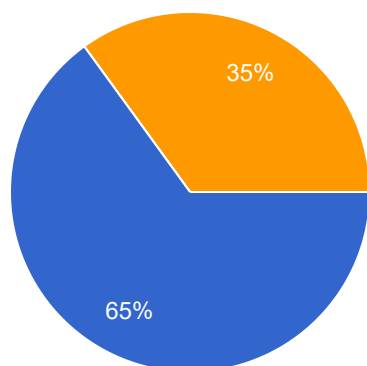
- a. Hydrolysis
- b. Neutralization
- c. Esterification
- d. Saturation



Which of the following is not an application of electroplating?

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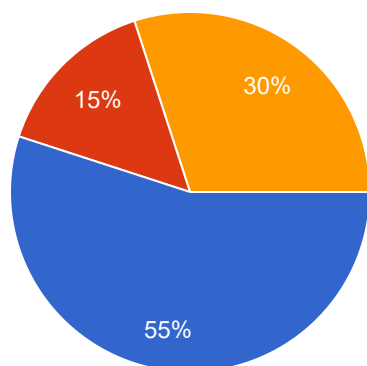


- a. Decorative purposes
- b. Coating of metal
- c. Metal protection
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Which of the following is not a characteristic of electrolyte?

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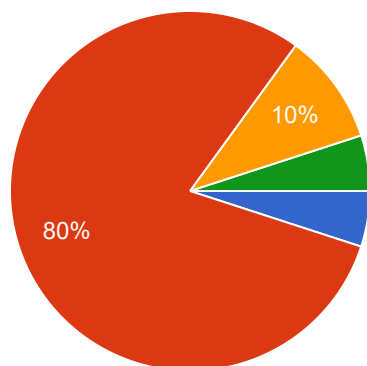


- a. Enables transportation of electrons
- b. Determines the strength of the metal
- c. Determines solubility
- d. Identifies discharge scale

Charge carriers need to be absorbed by the materials and hence ----- can be used as an electrolyte to absorb charge carrier metal.

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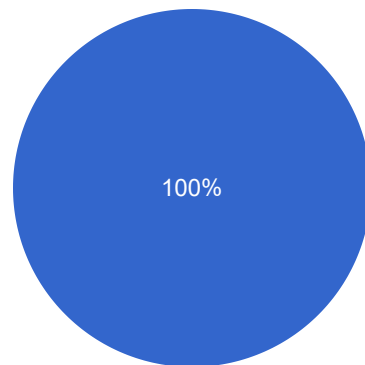
- a. Sodium solution
- b. NaCl solution
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In sputtering, the target serves as the:

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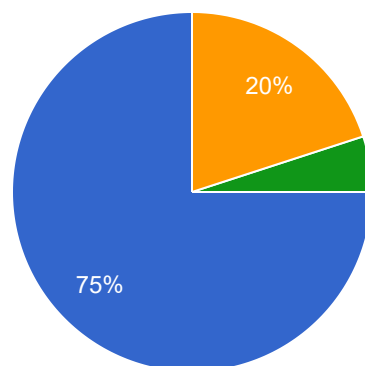


- a. Cathode
- b. Anode
- c. Neutral electrode
- d. None of the above

The spin coating process whereby the thin film thickness can be change by changing

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- a. the spin speed of the spin coater
- b. the viscosity of the liquids
- c. Both a and b
- d. None of the above

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