

“Dissemination of Education for Knowledge, Science and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur

(Autonomous)

Department of Physics

ICT based CIE

on

M.Sc. II: Tutorial Examination of Seminar +Tutorials on practical Course-II

Conducted by

Dr. M. M. Karanjkar

on

Date: 01/07/2022, Time: 12.00 noon to 1.30 pm

(2021 – 22)

M.Sc. II Sem IV Tutorial Exam 2022

Vivekanand College, Kolhapur (Autonomous)

Department of Physics

M. Sc. II

Paper code – CPPR-1123D

Name of the exam - Tutorial exam

Date – 01/07/2022

Time – 12.00 noon to 1.30 pm

Instructions:

- 1) All questions are compulsory.
- 2) Each question carry one mark.

* Indicates required question

1. Email *

2. Email *

3. Roll No *

4. Name of Student *

5. PRN no

6. A solar cell is a

Mark only one oval.

- P type semiconductor
- n type semiconductor
- Intrinsic Semiconductor
- P-N junction

7. X-ray diffractions are not used to identify the physical properties of which of the following?

Mark only one oval.

- Metals
- Semiconductors
- Liquids
- Polymers

8. The correct expression for Bragg's law is $n\lambda =$ _____

Mark only one oval.

- $d\sin\theta$
- $2d\sin\theta$
- $d\cos\theta$
- $2d\cos\theta$

9. Minimum interplanar spacing required for Bragg's diffraction is..... to wavelength of X-ray.

Mark only one oval.

- equal
- 2 times
- 4 times
- 1/2 times

10. Thermocouple works on the principle of

Mark only one oval.

- Seebeck Effect
- Photoelectric effect
- Raman Scattering
- X ray Scattering

11. An e.m.f produced in the thermocouple does not depend on

Mark only one oval.

- the length of metal wires
- Temperature of hot junction
- Temperature of cold junction
- Metals used

12. Efficiency of Aluminium-Chromel thermocouple is.....

Mark only one oval.

- 1 mV = 25 degree celsius
- 1 mV = 50 degree celsius
- 25 mV = 1 degree celsius
- 50 mV = 1 degree celsius

13. The rate of change of the thermoelectromotive force of a thermocouple with temperature is called as ...

Mark only one oval.

- Thermoelectric power
- Thermocouple voltage
- Thermal force
- Seeback effect

14. When a current flows through an unequal heated conductor, heat is evolved or absorbed along the length of the conductor is known as

Mark only one oval.

- Seeback effect
- Thomson effect
- Peltier effect
- Neel Effect

15. A phenomenon in which a temperature difference between two dissimilar electrical conductors or semiconductors produces a voltage difference is called as

Mark only one oval.

- Seeback effect
- Peltier effect
- Thompson effect
- Neel effect

16. An effect whereby heat is given out or absorbed when an electric current passes across a junction between two materials

Mark only one oval.

- Seeback effect
- Peltier effect
- Thompson effect
- Neel effect

17. Raman effect is scattering of _____

Mark only one oval.

- Atoms
- Phonons
- Photons
- Electrons

18. The elastic scattering of photons is called as _____

Mark only one oval.

- Atmospheric scattering
- Rayleigh Scattering
- Conserved Scattering
- Raman Scattering

19. Which of the following cannot be conserved during Raman scattering?

Mark only one oval.

- Total Energy
- Momentum
- Kinetic Energy
- Electronic Energy

20. In Raman spectroscopy, the radiation lies in the _____

Mark only one oval.

- Microwave Region
- Visible Region
- UV Region
- X-ray Region

21. The Raman spectrum is said to consist of Stokes lines when _____

Mark only one oval.

- $\Delta\nu > 0$
- $\Delta\nu < 0$
- c) $\Delta\nu = 0$
- Does not depend on $\Delta\nu$

22. Intensity of Raman lines are _____

Mark only one oval.

- Weak
- Strong
- Curved
- Blurry

23. LDR's are also called

Mark only one oval.

- Photo voltaic cell
- Photo resistive cell
- Photo emissive cell
- All of the mentioned

24. The vibrations of molecule, without a center of symmetry are active in which of the following region?

Mark only one oval.

- Infrared but inactive in Raman
- Raman but inactive in IR
- Raman and IR
- Inactive in both Raman and IR

25. Which of the following lines are most intense?

Mark only one oval.

- Stokes lines
- Rayleigh-scattered lines
- Anti-strokes lines
- All have same intensity

26. For a particular vibrational mode to appear in the Raman spectrum, what must change?

Mark only one oval.

- Frequency of radiation
- Intensity of radiation
- Molecule's shape
- Molecule's polarizability

27. Quantum dot solar cells are based on.....

Mark only one oval.

- Gratzel cell
- Solar cell
- Voltaic cell
- Galvanic cell

28. is a direct band gap material.

Mark only one oval.

- Copper Indium Gallium Selenide
- Copper Selenide
- Copper Gallium Telluride
- Copper Indium Gallium Diselenide

29. What is the difference between Photodiode and Solar cell?

Mark only one oval.

- No External Bias in Photodiode
- No External Bias in Solar cell
- Larger surface area in photodiode
- No difference

30. Which of the following statements are true with regard to resistivity?

Mark only one oval.

- Resistance depends on the temperature
- Resistance does not depend on the temperature
- Resistivity depend on the length
- Resistivity depend on area of cross section

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M.Sc. II Sem IV Tutorial Exam 2022

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Name of Student

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Prajyot Sunilkumar Pradnyasagar

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PRASAD VILAS KAMBLE

Sunil Ratnakar Chougale

Priyarani Ravindra Burud

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Girish Suresh Adake

Sadiya Mustafa Shaikh

Manisha Sawant

Yogita Zirange

Pratiksha Pandit Chougale

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Manasi Khanderao Jagadale

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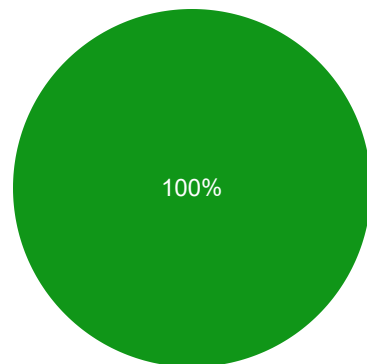


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A solar cell is a

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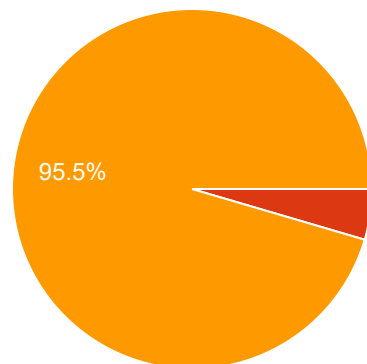


- P type semiconductor
- n type semiconductor
- Intrinsic Semiconductor
- P-N junction

X-ray diffractions are not used to identify the physical properties of which of the following?

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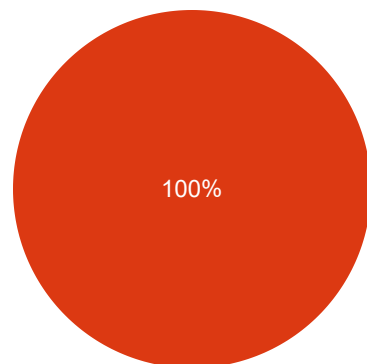
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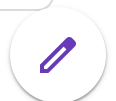
- Metals
- Semiconductors
- Liquids
- Polymers

The correct expression for Bragg's law is $n\lambda =$ _____ Copy

22 responses



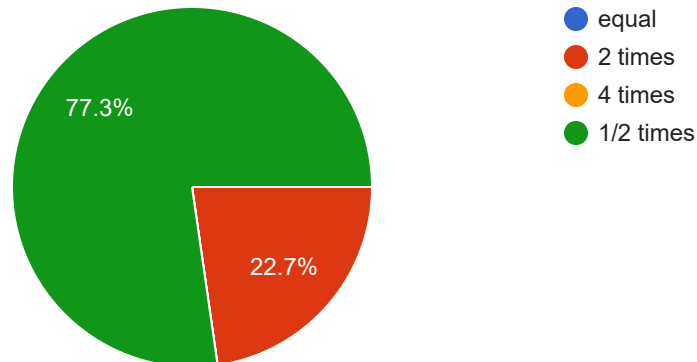
- $d\sin\theta$
- $2d\sin\theta$
- $d\cos\theta$
- $2d\cos\theta$



Minimum interplanar spacing required for Bragg's diffraction is..... to wavelength of X-ray.

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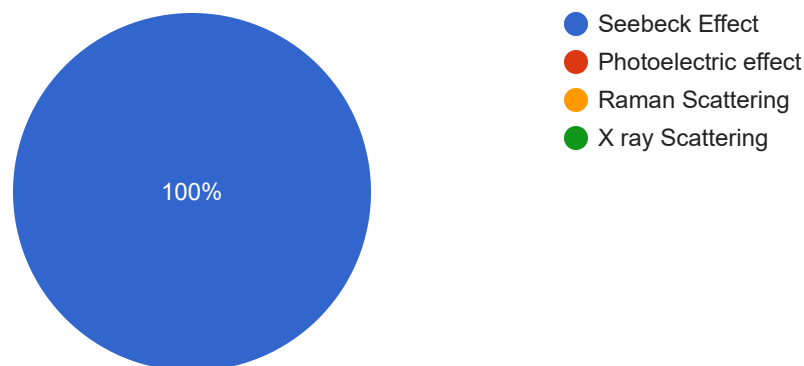
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Thermocouple works on the principle of

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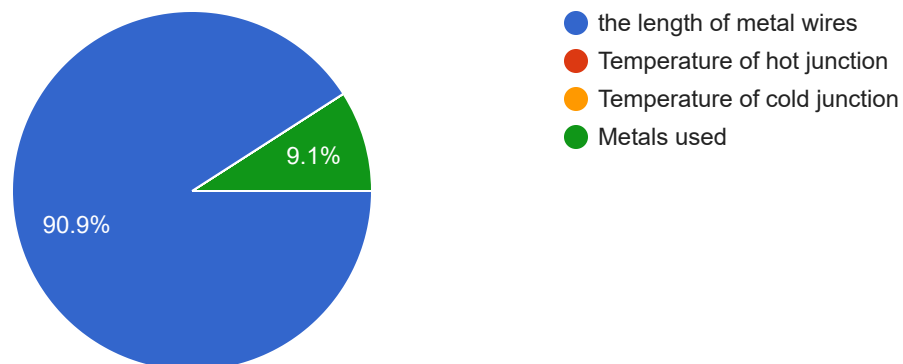
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An e.m.f produced in the thermocouple does not depend on

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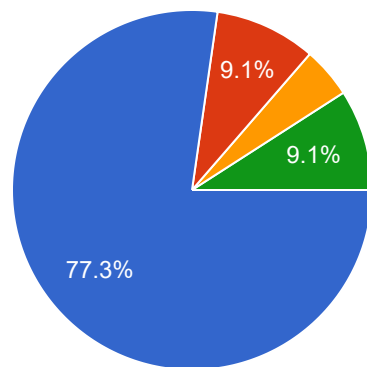
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Efficiency of Aluminium-Chromel thermocouple is.....

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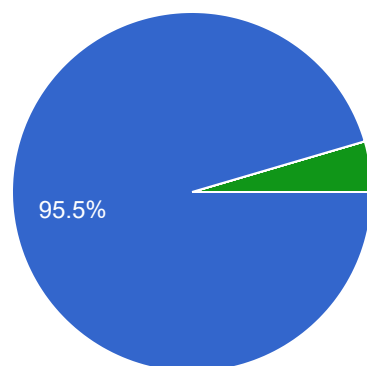


- 1 mV = 25 degree celsius
- 1 mV = 50 degree celsius
- 25 mV = 1 degree celsius
- 50 mV = 1 degree celsius

The rate of change of the thermoelectromotive force of a thermocouple with temperature is called as ...

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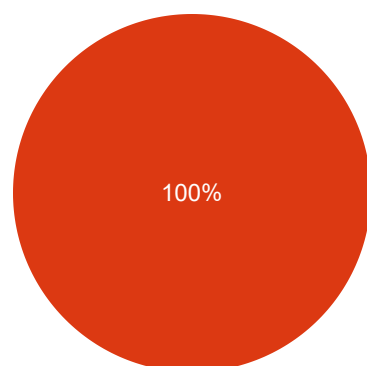


- Thermoelectric power
- Thermocouple voltage
- Thermal force
- Seebeck effect

When a current flows through an unequal heated conductor, heat is evolved or absorbed along the length of the conductor is known as

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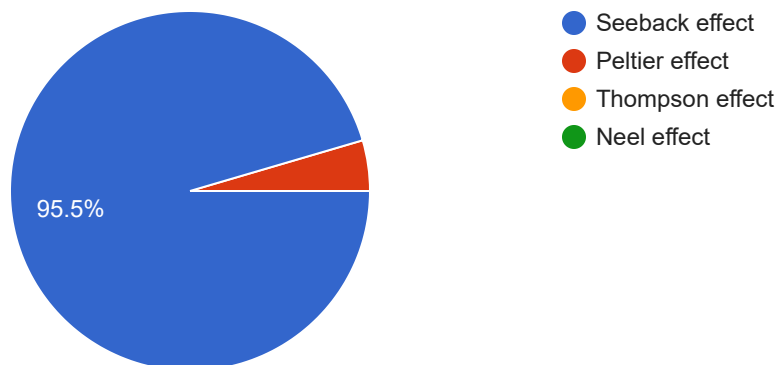
- Seebeck effect
- Thomson effect
- Peltier effect
- Neel Effect



A phenomenon in which a temperature difference between two dissimilar electrical conductors or semiconductors produces a voltage difference is called as

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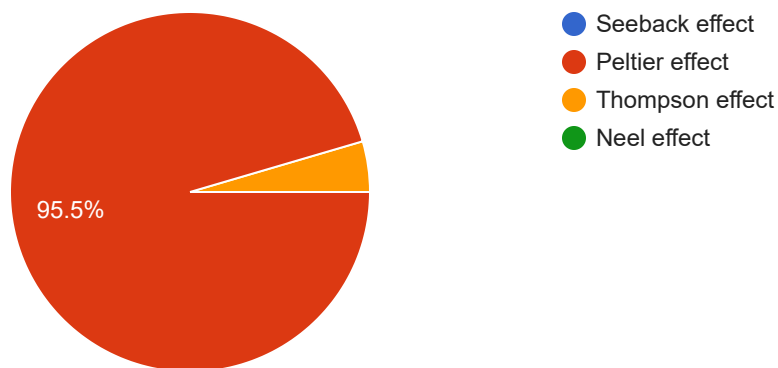
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An effect whereby heat is given out or absorbed when an electric current passes across a junction between two materials

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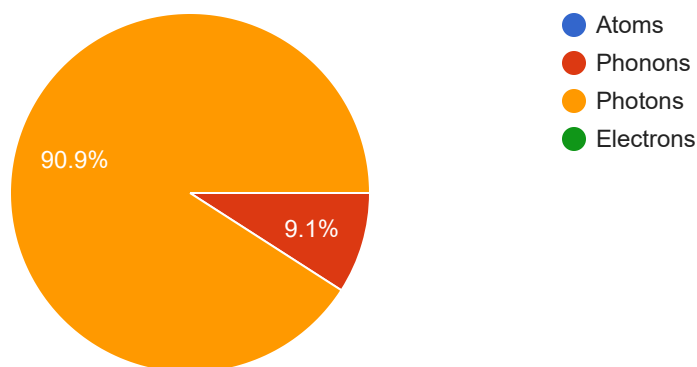
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Raman effect is scattering of _____

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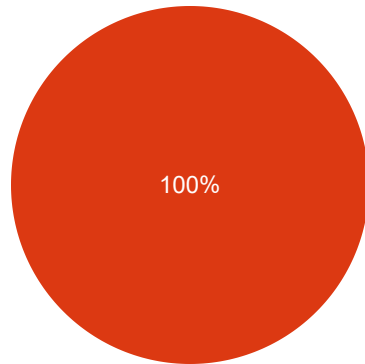
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The elastic scattering of photons is called as _____

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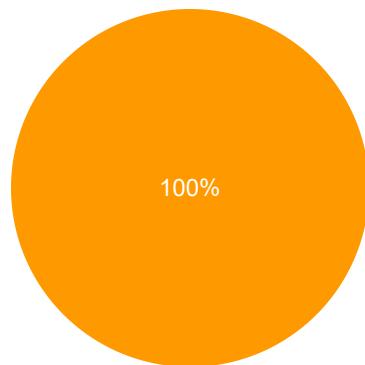


- Atmospheric scattering
- Rayleigh Scattering
- Conserved Scattering
- Raman Scattering

Which of the following cannot be conserved during Raman scattering?

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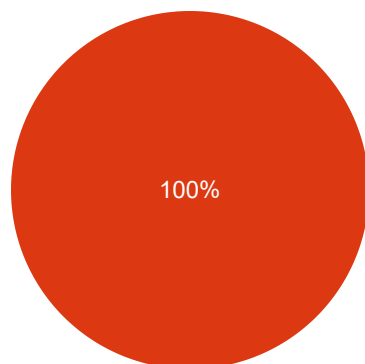


- Total Energy
- Momentum
- Kinetic Energy
- Electronic Energy

In Raman spectroscopy, the radiation lies in the _____

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22 responses



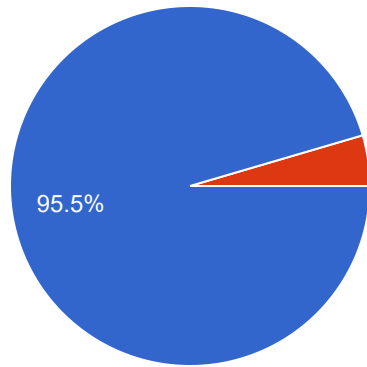
- Microwave Region
- Visible Region
- UV Region
- X-ray Region



The Raman spectrum is said to consist of Stokes lines when _____

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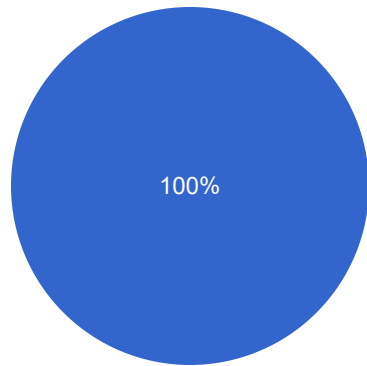


- $\Delta v > 0$
- $\Delta v < 0$
- c) $\Delta v = 0$
- Does not depend on Δv

Intensity of Raman lines are _____

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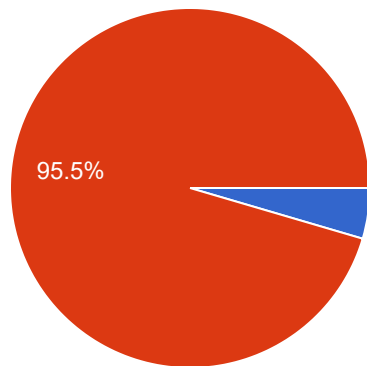


- Weak
- Strong
- Curved
- Blurry

LDR's are also called

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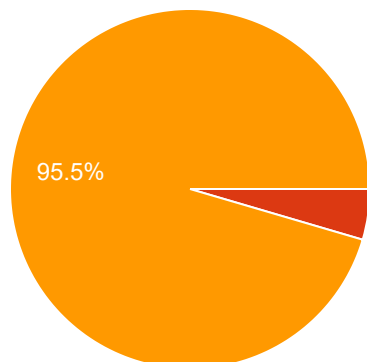
- Photo voltaic cell
- Photo resistive cell
- Photo emissive cell
- All of the mentioned



The vibrations of molecule, without a center of symmetry are active in which of the following region?

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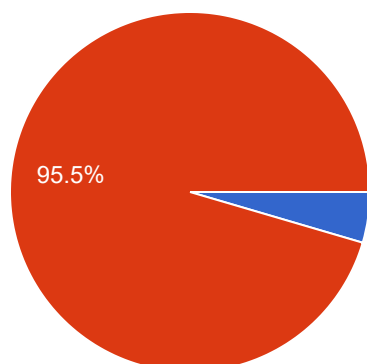


- Infrared but inactive in Raman
- Raman but inactive in IR
- Raman and IR
- Inactive in both Raman and IR

Which of the following lines are most intense?

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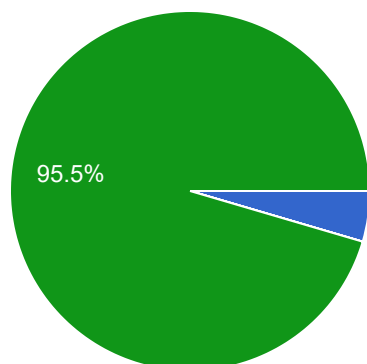


- Stokes lines
- Rayleigh-scattered lines
- Anti-strokes lines
- All have same intensity

For a particular vibrational mode to appear in the Raman spectrum, what must change?

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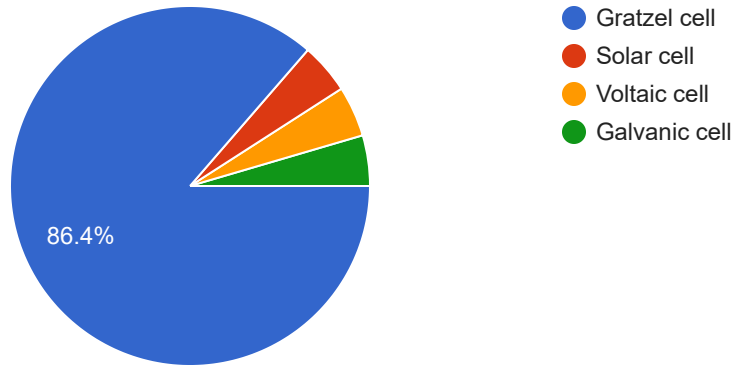
- Frequency of radiation
- Intensity of radiation
- Molecule's shape
- Molecule's polarizability



Quantum dot solar cells are based on.....

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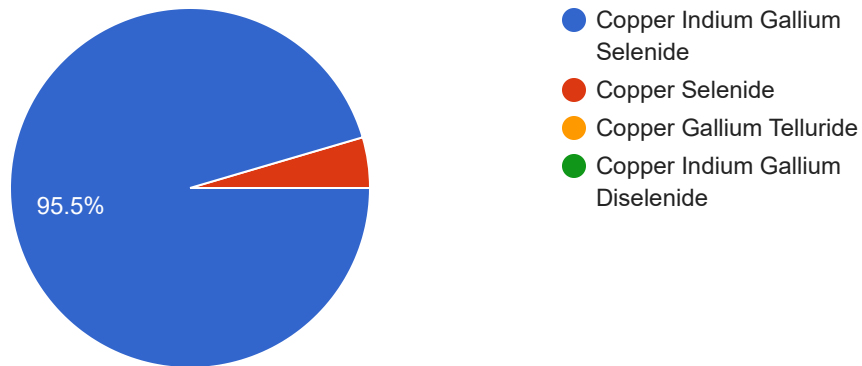
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... .. is a direct band gap material.

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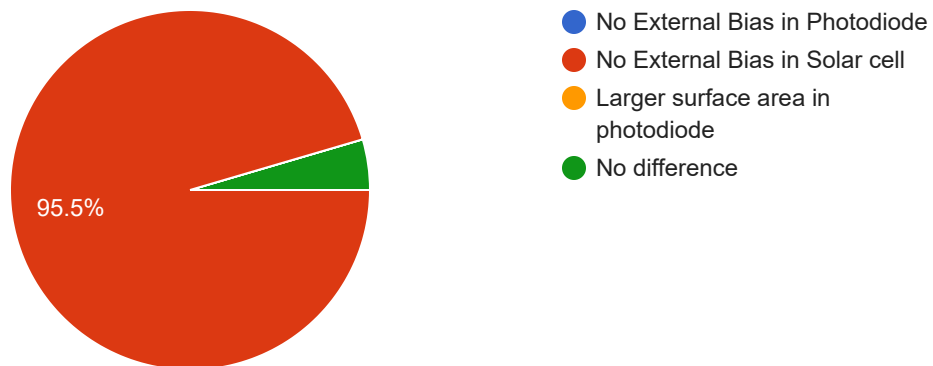
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What is the difference between Photodiode and Solar cell?

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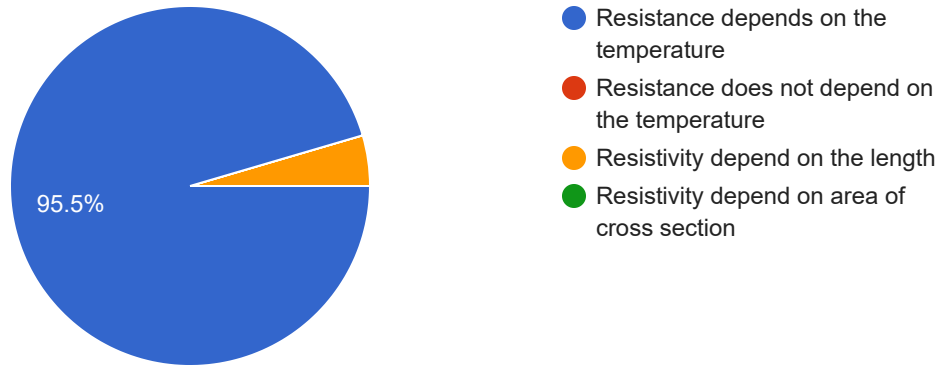
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Which of the following statements are true with regard to resistivity?

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