Subject	**Chemistry**
Paper No. and Title	**Inorganic Chemistry**
Module (Flipped classroom) Title	**Superconductor**
Module Tag	**DAYA.CHEM.SVR.M3**

By

Mr. Rajmane Shivaji Vishnu

Department of Chemistry

D. B. F. Dayanand College of Arts and Science, Solapur.

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Module No. 3

Title - Superconductors

Prerequisites – Learners should read the metallic solids, semiconductors and their formation and superconductors from the book.

Objectives of the Module

Sub Unit 1 -

	Content	**Objectives (Learner should be able to)**	**Cognitive Level**
1.1	Definition	Definition of conductor	Remembering
		Definition of semiconductors	Remembering
		Definition of superconductors	Remembering
		Compare three definitions with each other	Applying
		Difference in material	Understanding
		How to increase conductivity with temperature	Evaluating
1.2	Preparation	Required form of superconductors	Understanding
		Types of methods for preparation	Understanding
		Methodology of preparation	Applying
		What are the components required for preparation	Analysing

Sub Unit 2 -

	Content	**Objectives (Learner should be able to)**	**Cognitive Level**
2.1	Structure	Cubic perovskite structure	Understanding
		Stoichiometry in cubic structure	Understanding
		Conduction mechanism and geometries	Remembering
		Drawing of structure	Creating
2.2	Properties & applications	Conductance	Understanding
		Resistance	Understanding
		Loss of electrical energy	Remembering
		Applications of superconductors	Creating

Detailed Plan of Out-of -class and In-class activities

Week 1

Sub Unit 1 – Introduction and Preparation of Superconductors

Objectives –

1) To know the definition of superconductors.
2) To understand the difference between conductors and semiconductors
3) To understand the methods of various forms of superconductors

Resources Needed –

Title and Nature of Resources :–

PAH Solapur University B.Sc.-III, Sem.-VI, Paper-XIV: Inorganic Chemistry Syllabus.
http://su.digitaluniversity.ac/WebFiles/MSD%20BOS%20B%20Sc%20III%20Chemistry%20%202018.pdf

Material :

A) Books -

i) Text Book: B.Sc.-III (Sem.-VI) Paper-XIV: Inorganic Chemistry.

ii) Reference Book: Principles of Electronics by V. K. Mehta

B) Instructor made -

i) PPT - https://docs.google.com/presentation/d/1L5Y8ImBCPc6bXvX-M2dXXhSkgQt6rx6C/edit#slide=id.p1

ii) Video –

Video-1:
https://drive.google.com/file/d/1nBs_xuMCrAbZXVejyd-oUWpiOX2kPi_8/view

Video-2:
https://drive.google.com/file/d/1HtingBMEE3FUtyl84m_ar-uKgKOUTRfB/view

iii) Soft study material - https://drive.google.com/drive/u/0/recent

C) Assessment- https://drive.google.com/drive/u/0/recent

Units	**Out-of –class activity Details of Activity**	**In-class activity Details of Activity**	**Assessment**
1.1	Students should read out the topic from Text and Reference book Students should listen the recordings	Discussion on the topic Check the level of understanding through Question – answer session	Question – answer session
1.2	Students should read out the topic from Text and Reference book Students should listen the recordings	Same as above Help students to apply the definition	Question to write in detail

Week 2

Sub Unit 2 – Structure and Properties of Ceramic Superconductors

Objectives –

1) To know the structural arrangement of atoms in superconductors.
2) To understand Cubic perovskite structure.
3) To know the properties of superconductors.
4) To understand the applications of superconductors.

Resources Needed –

Title and Nature of Resources :–

PAH Solapur University B.Sc.-III, Sem.-VI, Paper-XIV: Inorganic Chemistry Syllabus.
http://su.digitaluniversity.ac/WebFiles/MSD%20BOS%20B%20Sc%20III%20Chemistry%20%202018.pdf

Material :

A) Books -

i) Text Book: B.Sc.-III (Sem.-VI) Paper-XIV: Inorganic Chemistry.

ii) Reference Book: Principles of Electronics by V. K. Mehta

B) Instructor made -

i) PPT - https://docs.google.com/presentation/d/1L5Y8ImBCPc6bXvX-M2dXXhSkgQt6rx6C/edit#slide=id.p1

ii) Video –

Video-3:

https://drive.google.com/file/d/1oxpXc4-pJusN-mMV_fxNVA-3SE3Izigs/view

Video-4:

https://youtu.be/rrxDqK_Clyg

iii) Soft study material - https://drive.google.com/drive/u/0/recent

C) Assessment- https://forms.gle/VhQTJ7XwmD38eTGq9

Units	**Out-of –class activity Details of Activity**	**In-class activity Details of Activity**	**Assessment**
2.1	Students should read out the topic from Text and reference book Students should listen the recordings	Discussion on the topic Check the level of understanding through Question – answer session	Question – answer session
2.2	Students should read out the topic from Text and reference book Students should listen the recordings	Same as above Help students to develop the information in tabular form	Question to write in detail