



Shri Shivaji Education Society Amravati's  
**Shri Shivaji Science & Arts College**  
**Chikhli, Dist. Buldana- 443201(MS).**

## Department of Physics

### Report on Certificate Course Nanotechnology

- 1) **Title of the Activity:** one Week Certificate Course on Nanotechnology
- 2) **Date:** 04/02/2018 to 12/02/2018
- 3) **Notice:** A leaflet of the program display on notice board
- 4) **Organizer:** Dr. A. M. Garode (Principal)
- 5) **IQAC Cordinator:** Dr. V. U. Pochhi
- 6) **Convenor:** Mr. N. B. Thakare
- 7) **Course Coordinator:** N.B. Thakare
- 8) **Members:** Mr. N.B. Thakare, Miss.Y.T.Suradkar, Ms. P. R. Waghmare, Mr. Santosh Ingle, Mr. Swapnil Bhagat, Mr. Mukesh Rajput
- 9) **No of Participants:** 120
- 10) **The Practice/Activity:**

Department of Physics of Shri Shivaji Science College Chikhli, organized certificate Course on dated 04/02/2018 to 12/02/2018 entitled, "Nanotechnology." First of all the welcome address of IQAC Coordinator Dr. V. U. Pochhi, after that principal address of Dr. A. M. Garode. At last vote of thanks given by Mr. N. B. Thakare and with the permission of organizer committee member the program ends.

In this course there are 4 module,

**Introduction to Nanotechnology:- Mr. N.B. Thakare**

**Nanomaterials :- Miss. Y.T.Suradkar**

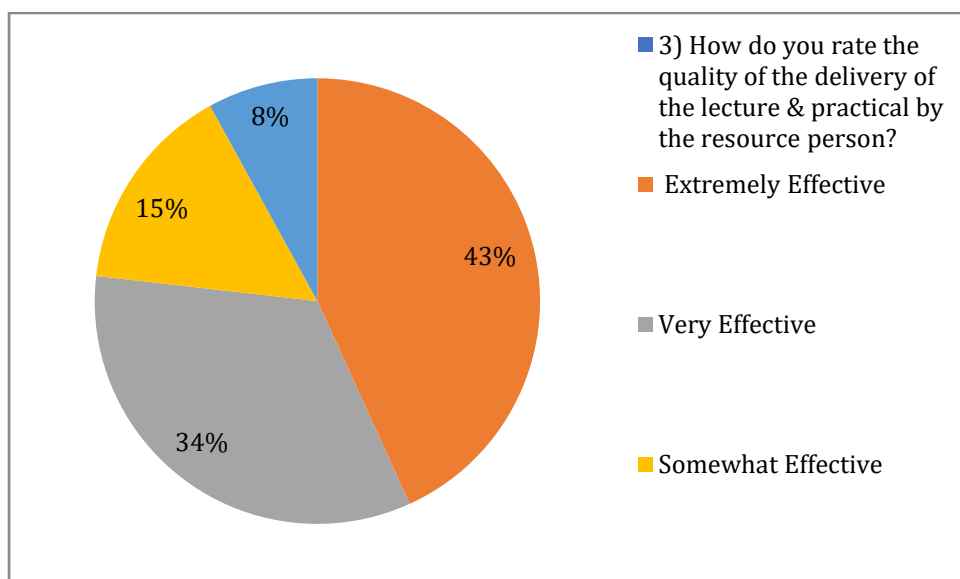
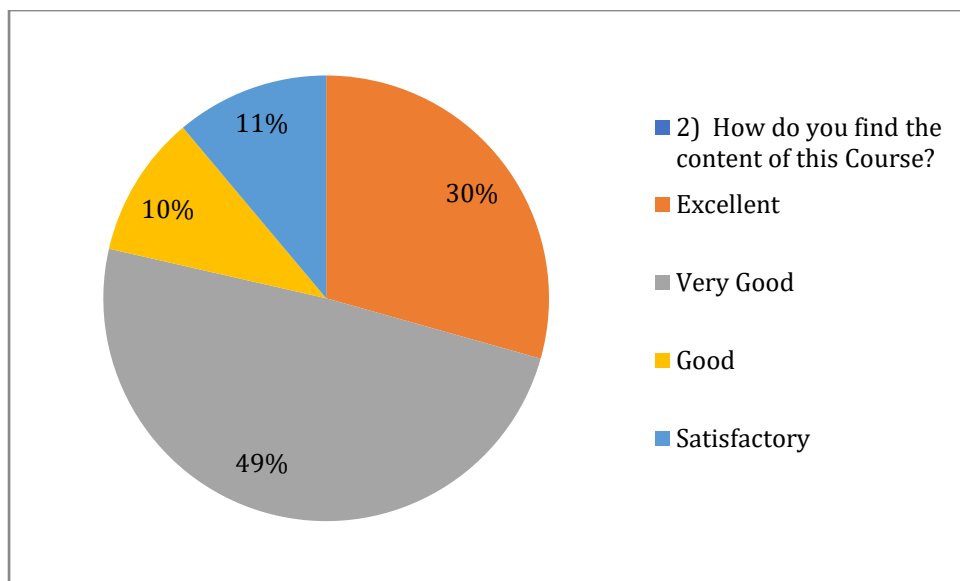
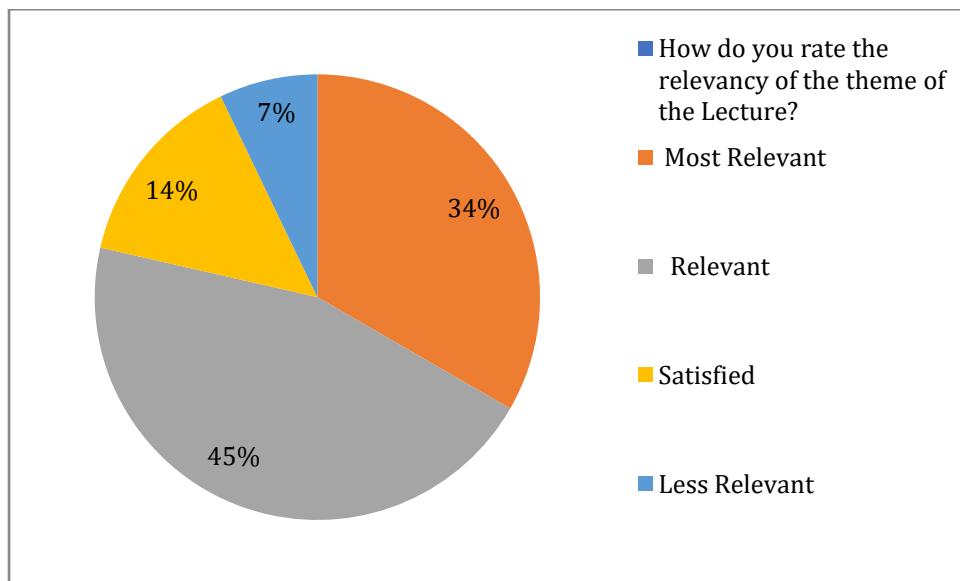
**Preparation method:- Ms. P. R. Waghmare, Swapnil Bagat**

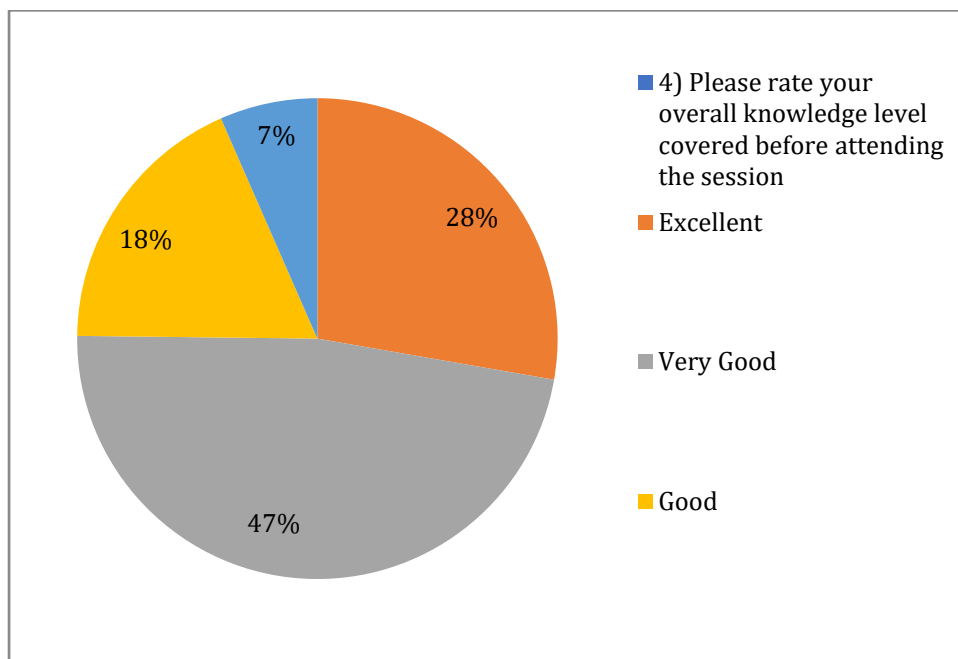
**Characterization techniques :- Santosh Ingle, Mukesh Rajput**

These module taught by teacher respective teacher. Practical session are taken in offline mode in Department of Physics by all physics teacher with help of non teaching staff Mr. A. B. Bahekar & Mr. R. A. Shaikh.

## 11) Feedback & Action Taken:

**Feedback:** The overall feedback of the participants about course as follows,





#### **Action Taken:**

1. It is decided to organize Certificate Course on Nanotechnology
2. A committee for the organization for the program was formed.
3. The members of the committee are mentioned in above report.
4. The work was distributed among the committee members.
5. A Boucher of the program was prepared and display on the college notice board.
6. Theory & Practical are to be taken
7. This program help to students increase their research knowledge & skill.
8. As a result of participating in the certificate course on “Nanotechnology ” students as well as entre participates will be able to learn and understand nanotechnology and how research works to do in material science. As well as how to prepare nonmaterial using different synthesis technique.
9. Feedbacks of participants were collected analysed.



Shri Shivaji Education Society, Amravati's  
**Shri Shivaji Science & Arts College Chikhli,**  
**Dist. Buldana**

Accredited by NAAC B<sup>++</sup> Grade (CGPA 2.82)



**Department of Physics**

**Certificate Course in Nanotechnology**

Date: 04<sup>nd</sup> to 12<sup>th</sup> Feb. 2018

**Organizer**

**Dr. A . M. Garode**  
Principal

**Dr. V. U. Pochhi**  
IQAC Cordinator

**Organizing Committee**

**Mr. N.B. Thakare**  
Course coordinator

**Miss.Y.T.Suradkar**  
Member

**Ms. P. R. Waghmare**  
Member

**Mr.Santosh Ingle**  
Member

**Mr.Swapnil Bhagat,**  
Member

**Mr.Mukesh Rajput**  
Member

**Technical Support**

**Mr. R. A. Shaikh**  
Technical Support

**Mr. A. B. Bahekar**  
Technical Support

## Certificate Course in Nanotechnology Syllabus

Sr. No.	Course Contents
1.	<p><b>Module 1:</b> <u>Introduction to nanotechnology:</u> Nano science, nanoparticles, history of nanoparticles, nanotechnology, effect of size on nanoparticles.</p>
2.	<p><b>Module 2:</b> <u>Nanomaterials:</u> Types of nanomaterials, properties of nanomaterials (structural, morphological, electrical, magnetic, optical, superconductivity) application and drawbacks of nanomaterials.</p>
3.	<p><b>Module 3:</b> <u>Preparation method:</u> Synthesis of nanomaterials, types of synthesis method, physical method, chemical method, weight chemical method, green synthesis, application and drawbacks of synthesis methods.</p>
4.	<p><b>Module 4:</b> <u>Characterization techniques:</u> TG -DTA, XRD, FTIR, SEM, TEM, 2/4prob method (DC Resistivity), LCR- Q Meter (Dielectric), VSM etc.</p>
5.	<p><b>Module 5:</b> <u>Case Study</u> Case study of nanomaterial: oxides, ferrites, perovskite, graphene etc.</p>
6.	<p><b>Practical:</b></p> <ol style="list-style-type: none"> <li>1. Synthesis of oxide using hydro thermal method</li> <li>2. Synthesis of ferrites using sol-gel method</li> <li>3. Synthesis of perovskite using solid state method</li> <li>4. Synthesis of nanomaterials using chemical bath deposition method.</li> <li>5. Analysis of nanomaterials.</li> </ol>

### Notes:

1. Minimum marks for passing in theory or practical shall be considered for exemption in theory or practical
2. Minimum pass marks for theory or practical shall be 50% of the maximum marks allotted to the theory or practical.
3. Grade shall be awarded to the successful examinee on securing minimum pass marks in theory and practical.



Shri Shivaji Education Society, Amravati's

**Shri Shivaji Science and Arts College,  
Chikhli Dist. Buldana (MS),**



**Certificate Course on Nanotechnology**

*This is certified that ...~~Pramesh~~...~~Ashok~~...~~Khanat~~..... of Shri Shivaji Science and Arts College, Chikhli, Dist. Buldana, Class ~~B.Sc.-III~~<sup>2<sup>nd</sup></sup>..... has participated in Certificate Course on Nanotechnology organized by Department of Physics Shri Shivaji Science and Arts College, Chikhli, Dist. Buldana. Duration of the Course: 04.12.2018.*

Mr. N. B. Thakare  
Course Convenor

Dr. V. U. Pochhi  
IQAC Coordinator

Dr. A. M. Garode  
Principal