

# Curriculum Vitae



1. **Name (in Block Letters)** :- KARANJKAR MILIND MANOHAR
2. **Father's Name / Mother's Name** :- MANOHAR SHANKARARAO KARANJKAR
3. **Department** :- Physics
4. **Current Designation & Grade Pay** :- Professor G.P-10000/-
5. **Date of last Promotion** :-6 July 2020
6. **Position and Grade Pay applied under CAS** :- Professor 10000/-
7. **Date of eligibility for promotion** : 6 July 2020
8. **Date and Place of Birth** :-18-11-1962 Satara, Maharashtra,
9. **Sex** :- Male
10. **Marital status** :-Married
11. **Nationality** :-Indian
12. **Indicate category and sub category (if reserved):-** Shimpi (OBC)
13. **Address for correspondence (with Pin code)** :-Department of Physics,  
Vivekanand College, Kolhapur-  
416003
14. **Permanent Address (with Pin code)** :- "Ashirwad", Plot No.15 Lay  
out No.3 Baba Jarag nagar,  
Kolhapur- 416 007
15. **Telephone No** :- (0231) 2637434, 09371637434
16. **Email** :- ncrnt2012@gmail.com

### Academic Qualifications (S.S.C. till post graduation) :-

Examinations	Name of the Board/ University	Year of Passing	Percentage of marks obtained	Division/ Class/Grade	Subject
B.Sc	Shivaji University, Kolhapur	1984	60.91	First class with Hons.	Physics
M.Sc.	Shivaji University, Kolhapur	1986	58.69	Second Class (B <sup>+</sup> )	Physics
Others examination, if any	-	-	-	-	-

### Research Degree(s)

Degrees	Title	Date of award	University
M. Phil.	-	-	-
Ph.D./D. Phil	STRUCTURAL CHARACTERISATION AND ELECTRICAL AND MAGNETIC PROPERTIES OF MIXED FERRITES	23 January 1995	Shivaji University, Kolhapur
D.Sc/D. Litt.	-	-	-

### AWARDS:-

- Best Poster Presentation Award in the 2nd International Conference on —Physics of Materials Science and Materials Based Device Fabrication (ICPM-MDF-2014) at Shivaji University, Kolhapur.( Jan. 13-15, 2014)
- Best Poster Presentation Award in Two day International Conference on — Challenges and Opportunities before 21st century India in the fields of social sciences, science , management and technology 6th and 7th Feb 2016 at Rajshri Chatrapati Shahu, College, Kolhapur
- Temperature and Humidity measurement in Ambbabi Temple - Pacchim Maharashtra Devasthan Samitti, Kolhapur.Government of Maharashtra.-(2018)
- Kirnotsav study in Ambbabi Temple -

Pacchim Maharashtra Devasthan Samitti, Kolhapur.Government of Maharashtra.-(2019)

- Consultative prize for poster presentation in 4<sup>th</sup> International Conference on Physics of Materials and Materials based Fabrications (4<sup>th</sup> ICPM-MDF-2019) 11 January 2019 at Shivaji University , Kolhapur.

- Felicitation by Kolhapur district disaster management, Government of Maharashtra for the work in flood in Kolhapur and Sangli district 31 August 2019.

- *Seva Sanman Puskar Morashtra* Soldier Force Maharashtra State 26 August 2023

#### **MEMBERSHIP:-**

- Governing Council Member – Vivekanand College, Kolhapur (Autonomous).
- Dean (Science Faculty)- Vivekanand College, Kolhapur (Autonomous).
- Academic Council Member – Vivekanand College, Kolhapur (Autonomous).
- BOS Chairman – Vivekanand College, Kolhapur (Autonomous).
- BOS member in Physics -Shivaji University, Kolhapur (SUK)(2018-2022)
- BOS member (SNST)-Shivaji University, Kolhapur (SUK)(2016-2022)
- BOS member in Physics – Devrukh College, Mumbai University, Mumbai (2018-2021)
- CBCS Committee member (both UG and PG) Shivaji University, Kolhapur.(2015 onwards)
- *Ambabai Kirnotsav samitti* member- Govt. of Maharashtra (Pachim Maharashtra Devasthan Samittee)
- *Adrata Nirmulun Samittee* member -Govt. of Maharashtra (Pachim Maharashtra Devasthan Samittee)
- Member of Kolhapur Disaster management Group-KDMG (2019)
- Life member of IAPT.
- Life member of SUTA.
- Member of NEP2020 cell Shivaji University, Kolhapur ( 2020 onwards)

#### **Research Guidance:-(Ph.D.)**

<b>Sr. No.</b>	<b>Name of the candidate</b>	<b>Title of the thesis</b>	<b>Degree awarded</b>
1	Shri. G.J.Navathe	Studies on Supercapacitive Properties of Copper Oxide Nanostructured Thin films	<b>AWARDED</b>
2	Shri. Jaykumar Khot	Studies on Synthesis, Characterization of Polyaniline and Polyaniline-metal Oxide	<b>ONGOING</b>

		composite for resistive switching	
3	Shri. Sarjerao Patil	“Green Synthesis of Metal Oxides Doped with Au and Ag Nanoparticles for Gas Sensing Application.”	<b>ONGOING</b>
4	Shri.Naik Pramod Shanataram	DEVELOPMENT OF NICKEL COBALT OXIDE-MANGANESE OXIDE NANOCOMPOSITES FOR SUPERCAPACITOR APPLICATION	<b>ONGOING</b>

**Research Projects: Completed.**

<b>Sr. No.</b>	<b>Title</b>	<b>Agency</b>	<b>Period</b>	<b>Whether Co-PI</b>	<b>Grant / Amount Mobilized (Rs. Lakh)</b>
1.	Studies on dye sensitized solar cells based on nanostructured titanium oxide	UGC	From 1 <sup>th</sup> April. 2013 to 31 <sup>st</sup> March 2015	PI	1.7 lakh

**Invited lectures, visiting professorship and Chairmanships at national or international conference/seminar**

<b>Sr. No.</b>	<b>Title of Lecture / Academic Session</b>	<b>Title of Conference / Seminar etc</b>	<b>Organized by</b>	<b>Whether international /National</b>
1)	Invited lecture Date 21-4-2014	Government of Maharashtra Rashtriya Pradnya Shod Pariksha	Sanjeeven Vidya niketan Panahala	National
2)	Invited lecture Date 22-4-2014	Government of Maharashtra Rashtriya Pradnya Shod Pariksha	Sanjeeven Vidya niketan Panahala	National

3)	Invited lecture Date 23-4-2014	Government of Maharashtra Rashtriya Pradnya Shod Pariksha	Sanjeeven Vidya nikan Panahala	National
4)	Invited lecture Date 24-4-2014	Government of Maharashtra Rashtriya Pradnya Shod Pariksha	Sanjeeven Vidya nikan Panahala	National
5)	Invited lecture Date 25-4-2014	Government of Maharashtra Rashtriya Pradnya Shod Pariksha	Sanjeeven Vidya nikan Panahala	National
6)	Chairperson  Renewable Energy Research and Deployment in India	National Conference on Recent Trends in Physics 10-11 October 2014	YCIS Satara	National
7)	Chairman Session –I	Aspects of economicsl and practical application of non_conventional energy resources in India	Shikshanmaharshi Dr.Bapuji Salunkhe Mahavidyalaya Miraj	National
8)	Chairman and examiner for poster session	National conference on recent trends in physics	YCIS Satara	National
9)	Chairman Nanomaterials for energy conversion and storage devices.	National conference on Nano materials and nano material based devices	Dattajirao kadam Arts, Science and Commerce College, Ichalkaranj	National
10)	Chairman  Promising Chemical Routes for Synthesizing photovoltaic nanomaterials	National seminar on recent trends in biophysics 19-20 September 2014	Devechand college, Arjunngar  Nipani- Karanataka	National
11)	Academic Session -I	International conference on Emerging Trends in Basic and Applied Sciences 10th March 2015	Karmaveer Hire Arts, Science, Commerce and education College, Gargoti	Internatio nal
12)	Academic Session –II	National seminar on Changing conditions of Rural Labour in India 28th & 29th August 2015	Vivekanand College, Kolhapur	National
13)	Recourse person	Scope & awareness of enviornmental & job oppurtunities in the Environmental Depts for	Vivekanand College, Kolhapur	Workshop

		B.Sc.Students 13 th July 2015		
14)	Invited lecture	“Differential Equations,” 21-07-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
15)	Invited lecture	“Quantum Statistics,” 17-8-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
16)	Invited lecture	“Cartesian coordinates,” 3-8-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
17)	Invited lecture	“Bose einsteins Statistics” 17-8-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
18)	Invited lecture	“Divergence and curl” 7-9-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
19)	Invited lecture	“Orthogonal curvilinear co-ordinate system” 22-9-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
20)	Invited lecture	“Spherical polar coordintes” 9-10-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
21)	Chairman	Challenges and Opportunities before 21st century India in the fields of social sciences, science , management and technology 6th and 7th Feb 2016	Rajashri chhatarpati shahu college, Kolhapur	University
22)	Chairman	“ Revolutionary Role Of Renewable Energy for Make in India” 12th& 13th February, 2016	Vivekanand College, Kolhapur	University
23)	Chairman	One day International Seminar on “ Socio- Economic, Historical, Political, Commercial, Managerial and environmental Approach towards Make in India Through Tourism in India 5th August, 2016	Vivekanand College, Kolhapur	University
24)	Resource	‘Computer literacy Program’ on Website development, Google	Vivekanand College, Kolhapur	University

	person	services, photoshop 14 th January 2016		
25)	Resource person	NAAC Preparation 27-02-2016	Yashwantrao Chavan Mahavidyalaya, Halkarni.	University
26)	Resource person	Auotonomy and CBCS Structure 27-09-2016	Vivekanand College, Kolhapur	University
27)	Invited Lecture	Maxwell Boltzman Statistics 21-01-2016	SNST, Shivaji University, Kolhapur	University
28)	Invited Lecture	Atomic Model 17-02-2016	SNST, Shivaji University, Kolhapur	University
29)	Invited lecture	“Autonomy” 27-09-2016	Vivekanand college, Kolhapur	University
30)	Invited lecture	“Introduction to Cartesian, spherical polar and cylindrical co-ordinate systems,” 10-7-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
31)	Invited lecture	“Concept of orthogonal curvilinear co-ordinates,” 17-07-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
32)	Invited lecture	“Unit tangent vectors, arc length, area and volume elements in orthogonal curvilinear co-ordinate system” 24-07-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
33)	Invited lecture	“Gradient, divergence, curl, del” 14-08-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
34)	Invited lecture	“Laplacian in orthogonal curvilinear co-ordinate system” 21-08-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
35)	Invited lecture	“Extension of gradient,divergence, curl, del” 28-08-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
36)	Invited lecture	“Laplacian in Cartesian, spherical polar and cylindrical coordinate systems” 4-09-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University

**RESEARCH, PUBLICATIONS IN SCOPUS :-**

<b>Sr. No.</b>	<b>Title with page Nos.</b>	<b>Journal</b>	<b>ISSN/ISBN No.</b>	<b>Whether peer reviewed/ Impact Factor, if any</b>
1)	An Mn doped polyaniline electrode for electrochemical supercapacitor	Journal of the Electrochemical Society, 158(6), pp. A653- A657, 2011	0013-4651	4.371
2)	Surfactant mediated growth of ZnO nanostructures and their dye sensitized solar cell properties	Journal of Materials Science: Materials in Electronics, 23(2), pp. 349-355, 2012	ISSN: 0957-4522	2.779
3)	Spray deposited localized surface plasmonic Au-ZnO nanocomposites for solar cell application	Electrochimica Acta, 72, pp. 32-39, 2012	ISSN: 0013-4686	7.336
4)	Structural, Mössbauer and electrical properties of nickel cadmium ferrites	Ceramics International, 39(2), pp. 1757- 1764, 2013	ISSN: 0272-8842	5.532
5)	Manganese oxide thin films deposited by SILAR method for supercapacitor application	AIP Conference Proceedings, 1536, pp. 679-680, 2013	ISSN: 0094-243X	0.40
6)	Electrochromic performance of the mixed $V_2O_5-WO_3$ thin films synthesized by pulsed spray pyrolysis technique	Current Applied Physics 14(3),389-395 31-3-2014	1567-1739	2.856
7)	Rapid synthesis of nanostructured copper oxide for electrochemical supercapacitor based on novel [HPMIM][Cl] ionic liquid	Journal of Electroanalytical Chemistry 738,170-175 5-12-2014	1572-6657	4.598
8)	Photoelectrochemical solar cell based on surfactant mediated rutile $TiO_2$ nanorods	Journal of Materials Science: Materials in Electronics 19 Jan 2015	ISSN: 0957-4522	2.779



9)	Development of nano fiber MnO <sub>2</sub> thin film electrode and cyclic voltammetry behavior modeling using artificial neural network for supercapacitor application	Materials Science in Semiconductor Processing 36, 43-48 1-8-2015	ISSN: 1369-8001	4.644
10)	Design and electro-synthesis of 3-D nanofibers of MnO <sub>2</sub> thin films and their application in high performance supercapacitor	Electrochimica Acta, Volume 176 Pages 523-532 9 July 2015	ISSN: 0013-4686	7.336
11)	Mesoporous architecture of TiO <sub>2</sub> microspheres via controlled template assisted route and their photoelectrochemical properties 28 (1), 304-316	Journal of Materials Science: Materials in Electronics 8 August 2016	ISSN: 0957-4522	2.779
12)	TOPO mediated rapid hydrothermal synthesis and study of electrochemical performance of nanostructured copper oxide thin films	Sustainable Energy and Fuels, 1(2), pp. 377-386, 2017	ISSN 2398-4902	6.813
13)	Mesoporous architecture of TiO microspheres via controlled template assisted route and their photoelectrochemical properties	Journal of Materials Science: Materials in Electronics, 28(1), pp. 304-316, 2017	ISSN: 0957-4522	2.779
14)	Photoelectrochemical performance of dye and semiconductor sensitization on 1-D hollow hexagonal ZnO rods: A comparative study	Journal of Solid State Electrochemistry, 22(10), pp. 3015- 3024, 2018	ISSN: 1432-8488	2.747
15)	Correction to: Photoelectrochemical performance of dye and semiconductor sensitization on 1-D hollow hexagonal ZnO rods: A comparative study (Journal of Solid State Electrochemistry, (2018), 22, 10, (3015-3024), 10.1007/s10008-018-3995-y)	Journal of Solid State Electrochemistry, 22(10), pp. 3015- 3024, 2019	ISSN: 1432-8488	2.747
16)	Bismuth ferrite thin film as an efficient electrode for photocatalytic degradation of Methylene blue dye	Materials Research Express, 6(2),026426, 2019	ISSN: 2053-1591	2.025
17)	Hybrid Solid State Supercapacitors (HSSC's) for High Energy & Power Density: An Overview	Engineered Science Publisher LLC 15/9/2020	2576-988x 2576-9898	6.13
18)	A Critical Review on Design and Development of New Generation Energy Storage Devices	ES Energy & Environment 2022, 17, 11-32	2578-0654	3.154

19)	Calcination temperatures influence the chemo-resistive gas sensing properties of biogenic zinc oxide nanoparticles with antibacterial activity	Inorganic Chemistry Communications 153 (2023) 110847 May21, 2023	1387-7003.	3.428

**Training Courses, teaching Learning Evaluation Technology Programmes, Faculty Development Programmes, Soft skill development:-**

<b>Sr. No.</b>	<b>Programme</b>	<b>Duration</b>	<b>Organized by</b>
1	Conservation of Biodiversity	1-7 October 2014	Government of Maharashtra Forest department
2	‘COMPUTER LITERACY PROGRAM’ on Website development, Google services	8 <sup>th</sup> January to 14 <sup>th</sup> January, 2016	Vivekanand College, Kolhapur
3	<i>Vanya jeev sptah</i>	1 to 7 October 2016	Forest department Government of Maharashtra,
4	Faculty development program on Cyber Security	1 <sup>st</sup> July to 7 <sup>th</sup> July 2019	Shivaji University, Kolhapur Faculty development centre.
5	One-Day Faculty Development Programme on”Use of Modern Technology in teaching pedagogy”	15/12/2019	Vivekanand College, Kolhapur (Autonomous)
6	(Faculty development program) AWARENESS OF COVID-19 AND ICT TOOLS	25th to 30th May 2020.	Sharad Institute of Technology College of Engineering Yadrav- Ichalkaranji
7	One-Week Online Faculty Development Programme on e-Content Development and Research Management	1/7/2020 to 7 /7/2020	BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), PUNE Institute of Management and

			Rural Development Administration, Sangli
8	One-Week Faculty Development Programme on n” Moodle learning and Management system’	25/4/2020 to 30/4/2020	Vivekanand College, Kolhapur (Autonomous)
9	RUSA sponsored Two days Faculty development Programme on “ Stress and Anger management “	28 and 29 January 2021	IQAC cell Vivekanand College, Kolhapur (Autonomous)

#### **Seminars organized/ attended 2018 onwards**

Sr.No.	Name of the conference	Duration	Organized by
1.	Organized: Organizing secretary National Conference on Nanomaterials (NCNm-2018)	21/8/ 2018	Vivekanand College, Kolhapur (Autonomous)
2.	Advancement in Science and Technology	9/2/2019	Govt. College of Arts, Science and Commerce, Khandola, Marcela-Goa 403107
3.	One day international interdisciplinary seminar on “Glimpses on various Aspects of Indian Freedom Movement”	1/3/2019	History department Vivekanand College, Kolhapur (Autonomous)
4.	NAAC sponsored One Day National Seminar on “ Development of Quality Culture in HEIs”	15/3/2019	IQAC cell Vivekanand College, Kolhapur (Autonomous)
5.	ONE DAY WORKSHOP ON NEW CHANGED SYLLABUS (CBCS) OF B.SC.PART-II PHYSICS PRACTICAL	21/09/2019	YC college of science , Karad
6.	RUSA Sponsored one day workshop on “Understanding IPR & Writing Research Paper”	22/12/2019	IQAC cell Vivekanand College, Kolhapur (Autonomous)

7.	One day online workshop on Remote Sensing of the moon by Indian Lunar Missions with Emphasis on Spectroscopic Analysis	23/12/2019	INDIAN INSTITUTE OF REMOTE SENSING, Government of India
8.	RUSA Sponsored one day workshop on Research Articles: preparation and Publication (Coordinator)	29/12/2019	Rusa sposed Research Development and promotion Cell Vivekanand College, Kolhapur (Autonomous)
9.	RUSA Sponsored one day workshop on “Writing Research Paper and Review literature”	5/1/2020	Rusa sposed Research Development and promotion Cell Vivekanand College, Kolhapur (Autonomous)
10.	<i>VIVEKANAND MAHOTSAV2020:SHOD CHAITANYACHA</i> (organizing committee member)	31/1/2020	Vivekanand College, Kolhapur (Autonomous)
11.	RUSA Sponsored one day seminar on “Basics in Research and Securing IP”	1/3/2021	Rusa sposed Vivekanand College, Kolhapur (Autonomous)
12.	ICSSR Sponsored One Day national Seminar on ‘UNDERSTANDING TRANSGENDER(LGBTQAI) FOR INCULSIVE SOCIETY”	8/3/2021	Sansthamata Smt.Sushiladevi Salunkhe Center for Women’s Studies and IQAC Vivekanand College, Kolhapur (Autonomous)
13	International E-Conference On Emerging Trends In Nanoscience and Nanodevices (ICETNN-2022) May 4, 2022	MAY4, 2022	IQAC And Department of Physics Vivekanand College, Kolhapur (Autonomous)

## Papers presented/ attended in Conferences, Seminars, Workshops, Symposia/webinars etc. :-

### Webinars:-

[https://drive.google.com/open?id=1LzMh6OWXtR-NkyihLxh\\_CZDZfLebvubDhttps://drive.google.com/open?id=1R7tCqI9iZMMziI0THp2dTnFoUoIMuUor7](https://drive.google.com/open?id=1LzMh6OWXtR-NkyihLxh_CZDZfLebvubDhttps://drive.google.com/open?id=1R7tCqI9iZMMziI0THp2dTnFoUoIMuUor7)

<https://drive.google.com/open?id=10d1tgElfEDn kW-LmppTyX5nNOtnVjFDQ>

<https://drive.google.com/open?id=1yFh0vTbsuZ6mv9PemVs-bs2cJbQ4GPeN>

<https://drive.google.com/open?id=1yFh0vTbsuZ6mv9PemVs-bs2cJbQ4GPeN>

<https://drive.google.com/open?id=1yFh0vTbsuZ6mv9PemVs-bs2cJbQ4GPeN>

### Conferences:-

<https://drive.google.com/open?id=1QqTznOsF5IjWwPYT1antTQK7fcsgTZ0j>

<https://drive.google.com/open?id=1FmxMZuRQmE8wrnqL8Lf9aYLihsVHB5>

[https://drive.google.com/open?id=1uG2Z\\_X3xhUxcDtMrEmsaneDOsFPpzbSo](https://drive.google.com/open?id=1uG2Z_X3xhUxcDtMrEmsaneDOsFPpzbSo)

Sr. No.	Title of the paper presented	Title of Conference / Seminar	Organized by	Whether International/ National/ State / Regional College or University level
1.	Magnetic study of study of Ni-Cd ferrites	International conference on Innovations in energy, Polymer and Environmental Sciences 10 <sup>th</sup> to 12 <sup>th</sup> January 2014	Yashavantrao Chavan Institute of Science Satara	International
2.	Boosting the efficiency of the semiconductor sensitized solar cells through assembly of titanium dioxide based cadmium chalcogenide electrodes.	Physics of materials and materials based device fabrication (ICPM-MDF-2014) Jan 13-15, 2014	Department of Physics, Shivaji University, Kolhapur	International
3.	XRD and IR study of Ni-Cd ferrites	Recent trends and issues in renewable Energy (NCRTIRE-2014) 27 <sup>th</sup> and 28 <sup>th</sup> January 2014	Rajashri Chhatrapati Shahu College, Kolhapur	National
4.	Co-Electrodeposition of MnO <sub>2</sub> -PANI Nanocomposite Electrode Material For high Performance Supercapacitor	Recent Trends in Biophysics (RTB-2014) 19 <sup>th</sup> and 20 <sup>th</sup> September 2014	Department of Physics Devachand College, Arjunnagar	National
5.	Efficient semiconductor Sensitized Solar cell through Assembly of TiO <sub>2</sub> Based CdS and CdSe photoanode	Materials for future technology 26 <sup>th</sup> and 27 <sup>th</sup> September 2014	Rajaram College, Kolhapur	National

6.	IR and X-Ray Study of Ni-Cd ferrites	NATIONAL CONFERENCE ON RECENT TRENDS IN PHYSICS 10-11 October 2014	Yashavantrao Chavan Institute of Science Satara	National
7.	Academic Session -I	International conference on Emerging Trends in Basic and Applied Sciences 10 <sup>th</sup> March 2015	Karmaveer Hire Arts, Science, Commerce and education College, Gargoti	International
8.	Academic Session –II	National seminar on Changing conditions of Rural Labour in India 28 <sup>th</sup> & 29 <sup>th</sup> August 2015	Vivekanand College, Kolhapur	National
9.	Recourse person	Scope & awareness of enviornmental & job oppurtinities in the Environmental Depts for B.Sc.Students 13 th July 2015	Vivekanand College, Kolhapur	Workshop
10.	Invited lecture	“Differential Equations,”  21-07-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
10.	Invited lecture	“Quantum Statistics,”  17-8-2015	School of Nanoscience and Technology, Shivaji University, Kolhapur	University
11.	Invited lecture	“Cartesian coordinates,”  3-8-2015	School of Nanoscience and Technology, Shivaji University, Kolhapur	University
12.	Invited lecture	“Bose einsteins Statistics” 17-8-2015	School of Nanoscience and Technology, Shivaji University, Kolhapur	University

13.	Invited lecture	“Divergence and curl” 7-9-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
14.	Invited lecture	“Orthogonal curvilinear co-ordinate system” 22-9-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
15.	Invited lecture	“Spherical polar coordintes” 9-10-2015	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University
16.	Chairman	Challenges and Opportunities before 21 <sup>st</sup> century India in the fields of social sciences, science , managemnt and technology 6 <sup>th</sup> and 7 <sup>th</sup> Feb 2016	Rajashri chhatarpati shahu college, Kolhapur	Intertnational
17.	Chairman	“ Revolutionary Role Of Renewable Energy for Make in India” 12 <sup>th</sup> & 13 <sup>th</sup> February, 2016	Vivekanand College, Kolhapur	National
18.	Chairman	One day International Seminar on “ Socio- Economic, Historical, Political, Commercial, Managerial and environmental Approach towards Make in India Through Tourism in India 5 <sup>th</sup> August, 2016	Vivekanand College, Kolhapur	International
19.	Resource person	‘Computer literacy Program’ on Website development, Google services, photoshop 14 <sup>th</sup> January 2016	Vivekanand College, Kolhapur	College level
20.	Resource person	NAAC Preparation 27-02-2016	Yashwantrao Chavan Mahavidyalaya, Halkarni.	College level



21.	Resource person	Auotonomy and CBCS Structure 27-09-2016	Vivekanand College, Kolhapur	College level
22.	Invited Lecture	Maxwell Boltzman Statistics 21-01-2016	SNST, Shivaji University, Kolhapur	University level
23.	Invited Lecture	Atomic Model 17-02-2016	SNST, Shivaji University, Kolhapur	University level
24.	Invited lecture	“Autonomy” 27-09-2016	Vivekanand college, Kolhapur	College level
25.	Invited lecture	“Introduction to Cartesian, spherical polar and cylindrical co-ordinate systems,” 10-7-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
26.	Invited lecture	“Concept of orthogonal curvilinear co-ordinates,” 17-07-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
27.	Invited lecture	“Unit tangent vectors, arc length, area and volume elements in orthogonal curvilinear co-ordinate system” 24-07-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
28.	Invited lecture	“Gradient, divergence, curl, del” 14-08-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
29.	Invited lecture	“Laplacian in orthogonal curvilinear co-ordinate system” 21-08-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
30.	Invited lecture	“Extension of gradient,divergence, curl, del” 28-08-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
31.	Invited lecture	“Laplacian in Cartesian, spherical polar and cylindrical coordinate systems”	School of Nanoscience and Technology, Shivaji University	University level

		4-09-2016	,Kolhapur	
32.	Invited lecture	“M-B distribution law” 11-09-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
33.	Invited lecture	“Molecular speeds” 18-09-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
34.	Invited lecture	“Law of equipartition of energy” 25-09-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
35.	Invited lecture	“Bose Einstein Statistics” 2-10-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
36.	Invited lecture	“Comparison between M-B, B-E and F-D statistics” 7-10-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
37.	Invited lecture	“Planck’s radiation formula” 9-10-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
38.	Invited lecture	“Planck’s radiation formula” and its applications 12-10-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
39.	Invited lecture	“ Deduction of Wien’s displacement Law” 15-10-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level

40.	Invited lecture	“ Deduction of Stefan’s law” 16-10-2016	School of Nanoscience and Technology, Shivaji University ,Kolhapur	University level
41.	Resource person	“Milky way Galaxy and Solar System” 13-10-2016	RCSC college, Kolhapur	College level

### Activities:-

Sr. No.	Name of Activity	Link
1	Sky Observation -Ashram Shala- Girgaon- Tal. Karveer, Dist. Kolhapur February 18, 2019	<a href="https://www.youtube.com/watch?v=UKCfgi-jNeE">https://www.youtube.com/watch?v=UKCfgi-jNeE</a>
2	kirnotsav in Mahalaxmi Temple	<a href="https://www.youtube.com/watch?v=VntE4IbQGus">https://www.youtube.com/watch?v=VntE4IbQGus</a> <a href="https://youtu.be/LcDjRhs3bxY">https://youtu.be/LcDjRhs3bxY</a> <a href="https://youtu.be/6yzk3zfFpzA">https://youtu.be/6yzk3zfFpzA</a> <a href="https://youtu.be/S-yHZkr3rX8">https://youtu.be/S-yHZkr3rX8</a> <a href="https://youtu.be/8-Oj_whSuj8">https://youtu.be/8-Oj_whSuj8</a>
3	Surface tension measurement at Rankala Lake	<a href="https://youtu.be/CVlTeFLSXsE">https://youtu.be/CVlTeFLSXsE</a> <a href="https://youtu.be/CVlTeFLSXsE">https://youtu.be/CVlTeFLSXsE</a>
4	Asteroid study	<a href="https://www.bbc.com/marathi/india-46562847">https://www.bbc.com/marathi/india-46562847</a>
5	Zero shadow day May 6, 2018	<a href="https://drive.google.com/open?id=1nNPsmEP2Sb_-GxnLWstZMRTN8pP1Q2F6">https://drive.google.com/open?id=1nNPsmEP2Sb_- GxnLWstZMRTN8pP1Q2F6</a>
6	Lunar eclipse study 7 <sup>th</sup> August, 2017	<a href="https://drive.google.com/open?id=1TtZVUoTQxVQpbGxNYKJfTEymSwwyIIFU">https://drive.google.com/open?id=1TtZVUoTQxVQpbGxNYKJfTE ymSwwyIIFU</a>
7	Project on Solid and Liquid Waste Management in Kolhapur city: The Zoom Project and Jayanti Nala Treatment	<a href="https://drive.google.com/file/d/0Bx55WUedFE5mcTRpQjhTLVVG_M3IxUjlcGVsMWR5emhycG04/view?usp=sharing">https://drive.google.com/file/d/0Bx55WUedFE5mcTRpQjhTLVVG M3IxUjlcGVsMWR5emhycG04/view?usp=sharing</a>
8	Paper Cuttings in Times of India ( Kirnotsav in Mahalaxmi Temple)	<a href="https://drive.google.com/file/d/1bXSaDR4OW6YlxPWiYbFvBLkV_R2BZOpFT/view?usp=sharing">https://drive.google.com/file/d/1bXSaDR4OW6YlxPWiYbFvBLkV R2BZOpFT/view?usp=sharing</a>
9	Zero Shadow Day ( 6th May 2019)	<a href="https://drive.google.com/file/d/1BMpMj0o_wckEToGb5d1FmTcAMtBaUdwN/view?usp=sharing">https://drive.google.com/file/d/1BMpMj0o_wckEToGb5d1FmTcA MtBaUdwN/view?usp=sharing</a>
10	1.Sun (Halo Study) 2nd May 2019	<a href="https://youtu.be/i39UWPK8f4M">https://youtu.be/i39UWPK8f4M</a> <a href="https://drive.google.com/open?id=10U2_0Tc2M3xMR6py1f_i4bsd9">https://drive.google.com/open?id=10U2_0Tc2M3xMR6py1f_i4bsd9</a>

		<p><a href="#">f5bkZEN</a></p> <p><a href="https://drive.google.com/file/d/1GWgoOumxXuBNHqgUELY7ZabbIbT6hAoE/view?usp=sharing">https://drive.google.com/file/d/1GWgoOumxXuBNHqgUELY7ZabbIbT6hAoE/view?usp=sharing</a></p>
11	Lunar Eclipse 15 <sup>th</sup> to 16 <sup>th</sup> July 2019	<a href="https://drive.google.com/file/d/1NVoUSNXsWCx9-P7YQtQEhRPCjXV7fEb7/view?usp=sharing">https://drive.google.com/file/d/1NVoUSNXsWCx9-P7YQtQEhRPCjXV7fEb7/view?usp=sharing</a>
12	Kirnotsav at Mahalaxshmi Temple November 2019	<p><a href="https://drive.google.com/file/d/1_wVKEmnuamF8OIO5FoFhxggER7XDp-u/view?usp=sharing">https://drive.google.com/file/d/1_wVKEmnuamF8OIO5FoFhxggER7XDp-u/view?usp=sharing</a></p> <p><a href="http://toi.in/fHEfkY46/a24gk">http://toi.in/fHEfkY46/a24gk</a></p> <p><a href="https://www.youtube.com/watch?v=Qvqe8TfXV0Q&amp;feature=youtu.be">https://www.youtube.com/watch?v=Qvqe8TfXV0Q&amp;feature=youtu.be</a></p> <p><a href="https://drive.google.com/file/d/1XuLXqYsBqkvjdSeT_0fg_oPL75Q0-LzX/view?usp=sharing">https://drive.google.com/file/d/1XuLXqYsBqkvjdSeT_0fg_oPL75Q0-LzX/view?usp=sharing</a></p> <p><a href="https://drive.google.com/file/d/1hj7Ai6NASKHfxU29DDGMgIus36i9xk4/view?usp=sharing">https://drive.google.com/file/d/1hj7Ai6NASKHfxU29DDGMgIus36i9xk4/view?usp=sharing</a></p>
13	<u><a href="#">Sun Eclipse</a></u> <u><a href="#">26th December 2019</a></u>	<a href="https://drive.google.com/file/d/1xO34gC1Y6XqQzyXdZEPK6FhJUPQFn6Ma/view?usp=sharing">https://drive.google.com/file/d/1xO34gC1Y6XqQzyXdZEPK6FhJUPQFn6Ma/view?usp=sharing</a>
14	Saturn and Jupiter conjunction Dec-2020	<p><a href="https://youtu.be/der6161y51Y">https://youtu.be/der6161y51Y</a></p> <p><a href="https://www.facebook.com/1059617197393527/posts/3746174608737759/">https://www.facebook.com/1059617197393527/posts/3746174608737759/</a></p> <p><a href="http://iyemarathichiyenagari.com/2020/12/15/jupitar-and-saturn-unity-on-21-december-2020/">http://iyemarathichiyenagari.com/2020/12/15/jupitar-and-saturn-unity-on-21-december-2020/</a></p> <p><a href="http://iyemarathichiyenagari.com/2020/12/15/jupitar-and-saturn-unity-on-21-december-2020/">http://iyemarathichiyenagari.com/2020/12/15/jupitar-and-saturn-unity-on-21-december-2020/</a></p> <p><a href="https://www.youtube.com/watch?v=zLhYMeas3m0">https://www.youtube.com/watch?v=zLhYMeas3m0</a></p> <p><a href="#">Print media</a></p>
15	Supermoon 11 March 2020	<a href="https://drive.google.com/file/d/1XymiDuuzbdAvjbdL_k84zaCGL-jM4xsV/view?usp=sharing">https://drive.google.com/file/d/1XymiDuuzbdAvjbdL_k84zaCGL-jM4xsV/view?usp=sharing</a>

16	Water analysis (Rankala) May24,2020 and other	<a href="https://youtu.be/16kNJyJIUE">https://youtu.be/16kNJyJIUE</a> <a href="https://youtu.be/8AjXXmGe8yo">https://youtu.be/8AjXXmGe8yo</a> <a href="https://drive.google.com/file/d/1GMBZL8fIn30PUJZuW6vnK5LLJUEZmPLr/view?usp=sharing">https://drive.google.com/file/d/1GMBZL8fIn30PUJZuW6vnK5LLJUEZmPLr/view?usp=sharing</a>
17	Sun Eclipse 22 June 2020	<a href="https://drive.google.com/file/d/12TaBD05cXLwb6D8gSGc0H_PUJ74GGitU/view?usp=sharing">https://drive.google.com/file/d/12TaBD05cXLwb6D8gSGc0H_PUJ74GGitU/view?usp=sharing</a>
18	Kirnostav Jan-2020	<a href="https://drive.google.com/file/d/1U_LO4AK5ImoBHtVq5dj0XPt85HjLMIW/view?usp=sharing">https://drive.google.com/file/d/1U_LO4AK5ImoBHtVq5dj0XPt85HjLMIW/view?usp=sharing</a>
19	Blue Moon Nov 2020	<a href="https://drive.google.com/file/d/1wn0bAkQNNBxfoEznsjoJhbHQxgdzufDi/view?usp=sharing">https://drive.google.com/file/d/1wn0bAkQNNBxfoEznsjoJhbHQxgdzufDi/view?usp=sharing</a>
20	Kirnostav Dec-2020 and Jan 2021	<a href="https://www.facebook.com/pudharionline/videos/725973971346389/">https://www.facebook.com/pudharionline/videos/725973971346389/</a> <a href="https://www.facebook.com/pudharionline/videos/725973971346389/">https://www.facebook.com/pudharionline/videos/725973971346389/</a> <a href="#">Print media 1</a> <a href="#">January- 2021</a>
21	Sky observation_Space station	<a href="http://iyemarathichiyenagari.com/2020/12/14/chance-to-see-international-space-station/">http://iyemarathichiyenagari.com/2020/12/14/chance-to-see-international-space-station/</a> <a href="http://dhunt.in/c9EjA?s=a&amp;uu=0xb015a02428f91e37&amp;ss=wsp">http://dhunt.in/c9EjA?s=a&amp;uu=0xb015a02428f91e37&amp;ss=wsp</a>
22	Solar eclipse June2020	<a href="https://youtu.be/mceHjcYnCjw">https://youtu.be/mceHjcYnCjw</a>

23	Super Moon May 7 2020	<a href="https://youtu.be/8AjXXmGe8yo">super moon https://youtu.be/8AjXXmGe8yo</a>
24	Lunar eclipse June 2020	<ul style="list-style-type: none"> <li>• <a href="https://youtu.be/mceHjcYnCjw">News in Baramati paper-</a></li> <li>□ <a href="https://youtu.be/mceHjcYnCjw">https://youtu.be/mceHjcYnCjw</a></li> </ul>
25	Zero shadow day 6 May 2020	<a href="https://drive.google.com/file/d/1KBgGpvtN7SurAG2Ga7rR9TI3lSnbnN4q/view?usp=sharing">https://drive.google.com/file/d/1KBgGpvtN7SurAG2Ga7rR9TI3lSnbnN4q/view?usp=sharing</a>

### Research Collaborative work:-

Sr. No.	Title of the collaborative activity	Name of the collaborating agency with contact details	Name of the participants	Duration	Nature of the activity	Link of the relevant document
1	To study the Kirnotsav in Mahalaxmi Temple during the Daxinayan and Uttarayan of Sun	Pacchim Maharashtra Devasthan Samitti, Kolhapur. Government of Maharashtra.	7	2018-19	During the Daxinayan and uttarayan of sun the sun rays enters in <i>Mahalaxmi Temple</i> and after travelling the distance 100 meters incident directly on Diety <i>Mahalaxmi</i> . This <i>prcess</i> is called <i>askirnotsav</i>	<a href="https://youtu.be/6yzk3zfFpzA">https://youtu.be/6yzk3zfFpzA</a> <a href="https://youtu.be/8-0j_whSej8">https://youtu.be/8-0j_whSej8</a> <a href="https://youtu.be/VntE4lbQGus">https://youtu.be/VntE4lbQGus</a> <a href="https://youtu.be/S-yHZkr3rX8">https://youtu.be/S-yHZkr3rX8</a> <a href="https://youtu.be/LcDjRhs3bxY">https://youtu.be/LcDjRhs3bxY</a> <a href="https://youtu.be/jo8pAk35n58-">https://youtu.be/jo8pAk35n58-</a>
2	To study the Tempaeature and humidity in Mahalaxmi Temple through out the year	Pacchim Maharashtra Devasthan Samitti, Kolhapur. Government of Maharashtra.	7	2018-19	Measurement of the temperature and humidity inside the temple from the area <i>Garbhakutti</i> to <i>Kasav chowk</i> through the year. .	

## **Research Collaborative Work (international)**

1) School of Chemical Engineering

Chonnam National University,

South Korea-61186

<https://drive.google.com/file/d/1e8ktKQCid-awN3GvZYWh0uq4w16Cm3f8/view?usp=sharing>

2) School of Advanced Material Science & Engineering

Research Professor Sungkyunkwan University, South Korea

[https://drive.google.com/file/d/18fbKPzAvw5sdkwX\\_AirrrYdF9Z\\_CqSqM/view?usp=sharing](https://drive.google.com/file/d/18fbKPzAvw5sdkwX_AirrrYdF9Z_CqSqM/view?usp=sharing)