

S.S.E.S.AMRAVTI'S SCIENCE COLLEGE, NAGPUR

Annual Report for the Session 2017-18

Department of -Physics

Year of Establishment: UG: 1967, PG: 2011-12, CoC: 2013-14, Ph. D /Lab Recognition: 2014-15

1. No of **Certificate / Diploma / Advanced Diploma / PG Diploma** Courses run by Departments: 03
2. Total Number of students

UG		PG		Ph. D.	Others	
B.SC. I	178	M.Sc. I	20		Certificate	19
B.SC. II	158	M.Sc. II	18		Diploma	17
B.SC. III	160	MCA-I			Adv Diploma	-
BCA I		MCA-II			PG Diploma in	01
BCA II		-			Nano	
BCA III		-			Technology	
Total	454	Total	46		Total	29

3. Faculty profile of Regular/Permanent Teaching Staff with name, qualification, designation.

Sr. No	Name	Qualification	Designation	No. of Years of Experience
1	Dr D K Burghate	M.Sc.,Ph.D	Principal	37
2	Dr.H.K.Dahule	M.Sc.,Ph.D.	Associate Professor	27
3	Dr.S.B.Khasare	Ph.D., D.Sc.	Associate Professor	23
4	Dr S W Anwane	M.Sc.,Ph.D.	Associate Professor	19
5	Dr S S Darokar	M.Sc.,Ph.D.	Assistant Professor	13

4. Faculty profile of Adhoc/Contributory Teaching Staff with name, qualification.

Sr. No	Name	Qualification	Adhoc/Contributory	Teaching at UG /PG Level	No. of Years of Experience
1	Ku.Neha Khotale	M.Sc.	Adhoc	PG.	5 Years
2	Ku.Chaitali Joshi	M.Sc.	Adhoc	P.G.	3 Years

5. Details of Administrative and Technical staff

Sr No	Name of the staff	Designation	Permanent /Temporary/ Daily-wages
1	D.S.Wankhade	Lab.Assistant	Permanent
2	D.A.Thakare	Lab.Attent	Permanent
3	M.G.Masram	Lab.Attent	Permanent

4	K.N.Meshram	Lab.Attent	Permanent
5	H.M.Dhawad	Lab.Attent	Permanent

6. Faculty recognized as a Supervisor / No of Students Registered

Sr. No	Name of the Supervisor	No of Students Registered	Whether Ph. D. Awarded
1	Dr D K Burghate	03	03
2	Dr.H.K. Dahule	02	-
3	Dr.S.B. Khasare	-	01
4	Dr S W Anwane	02	-
5	Dr S S Darokar	02	-

7. Results of the RTM Nagpur university examinations Winter -2017

Class	Total No of Students admitted	Appeared	Passed	Fail	Distinction	Pass %
B.SC. Sem- I	177	177	113	64	11	63.84
B.SC. Sem-III	150	150	113	37	16	75.33
B.SC. Sem-V	159	159	128	31	19	80.5
M. Sc. Sem-I	22	22	08	12	01	36.36
M. Sc. Sem-III	16	16	11	5	01	68.75
Ph. D.	10	-	-	-	-	-

8. Results of the RTM Nagpur university examinations summer 2018

Class	Total No of Students admitted	Appeared	Passed	Fail	Distinction	Pass %
B.SC. Sem- II	170	170	123	53	16	72.35
B.SC. Sem-IV	137	137	115	22	30	81.75
B.SC. Sem-VI	156	156	147	09	24	94.23

M. Sc. Sem-II	20	20	09	11	01	45.00
M. Sc. Sem-IV	16	16	10	6	01	62.5
Ph. D.	10	-	-	-	-	-

9. Awards / Recognitions (Merits, Gold Medal, Silver Medal etc.) received by students:

Name of the Student	Class	Details of the awards/ recognitions	National / State / University/ Dist/ College Level	Year
Miss Akansha Deepak Churhe	B Sc VI	08 gold medals	R.T.M.Nagpur University, Nagpur	2016-17
Ku.Ankita Chandak	B.Sc.III PCG	group student of department received Rs 80,000 /- as a "SCHOLARSHIP FOR HIGHER EDUCATION (SHE)"	'Innovation in Science Pursuit for Inspired Research (INSPIRE)' instituted by DST.,New Delhi	2016-17
Ku.Mohammad Fazela Faroz	B.Sc.I Sem I (PCM)	student of our department have applied for INSPIRE SCHOLARSHIP to DST New Delhi, a "SCHOLARSHIP FOR HIGHER EDUCATION (SHE)"	'Innovation in Science Pursuit for Inspired Research (INSPIRE)' instituted by DST.,New Delhi	2016-17
Ku.Priya K. Ghodmare	B.Sc.I Sem I (PCM)	student of our department have applied for INSPIRE SCHOLARSHIP to DST New Delhi, a "SCHOLARSHIP FOR HIGHER EDUCATION (SHE)"	'Innovation in Science Pursuit for Inspired Research (INSPIRE)' instituted by DST.,New Delhi	2016-17

10. Awards / Recognitions received by faculty:

Name of the Faculty	Details of the awards/ recognitions	International / National / State / University/ Dist/ College Level	Year
Dr D K Burghate	Ideal Principal Award	Rashtrasant Tukdoji Maharaj Nagpur University,	2011

		Nagpur	
	Lifetime Achievement	2ND International Conference on “Science and Technology for Society” Colombo, Shi Lanka	2015
	Ideal Principal Award	Shri Shivaji Education Society, Amravati	2015
Dr H K Dahule	Best Researcher Award	Science College, Congress Nagar Nagpur	2015
Dr S W Anwane	Senior Research Fellowship	<i>Council of Scientific & Industrial Research (CSIR),</i> New Delhi, INDIA	1994,1996
Dr S S Darokar	Best Teacher Award	Science College, Congress Nagar Nagpur	2015

11. Faculty participation in conferences/seminar/workshop and symposia:

Name of the Faculty	State Level		National Level		International Level	
	Attended	Presented papers	Attended	Presented papers	Attended	Presented papers
Dr D K Burghate	03	03	02	02	01	01 Singapore
Dr S S Darokar			02	02	01	01 Shri Lanka

12. Details of Major / Minor Projects and Research funds sanctioned and received from various funding agencies, industry and other organizations

Name of the Faculty	Major/ Minor Any other (Specify)	Duration From -To	Funding Agency	Grant sanctioned	Grant Received	Whether Completed/ Ongoing
Dr.D.K. Burghate	Major	2012-2015	UGC	11,42,800	11,42,800	Completed
Dr.S.B.Kondawar	Major	2008-2011	UGC	8,19,300	8,19,300	Completed
Dr.H.K.Dahule	Minor	2010-2012	UGC	1,20,000	1,20,000	Completed
Dr S W Anwane	Minor	2009-2011	UGC	1,55,000	1,55,000	Completed
Dr S S Darokar	Minor	2009-2011	UGC	1,65,000	1,37,500	Completed

13. No of research publications:

Name of the Faculty	Peer Review Journals			Non-Peer Review Journals			Conference proceedings		
	Interna tional	Nati onal	Other	Interna tional	Nati onal	Other	Interna tional	Nati onal	Other
Dr.D.K. Burghate	43						05	22	

Dr.H.K.Dahule	21						02	24	
Dr.S.B.Khasare	30								
Dr S W Anwane	15						05		
Dr S S Darokar	04						03		

14. No of research publications listed in International Database (SCOPUS / Google Scholar)

Name of the Faculty	No of research publications in SCOPUS	No of research publications in Google Scholar	Citations	h-index	i10-index
Dr.D.K. Burghate	43	42	142	7	5
Dr.H.K.Dahule	11	5	3	2	1
Dr.S.B.Khasare	33	33	93	6	3
Dr S W Anwane	9	9	21	2	1
Dr S S Darokar	3	15	19	2	1

15. Details on Impact factor of publications:

Range Average h-index Nos. in SCOPUS

16. Details of publication of Chapter in Book/ Book Edited/ Book Published by the faculty

Name of the Faculty	Chapter in Book	Book Edited	Book Published			Year of Publication
			Title of the Book Published	ISBN/ISSN	Publisher	
Dr H K Dahule		02	Proceeding of ICMS-2012(as a Editor Member) Proceeding of NCNM-2013(as a Editor Member)			
Dr S W Anwane	01	03	Advanced Energy Materials Chapter: <i>Solid Electrolytes – Principles & Applications</i>	9781118686294	Scrivener Publishing	2014
			<i>Fundamentals of Electromagnetic Fields</i>	1934015008	Infinity Science Press, USA	2007
			<i>A Course in Electromagnetic Fields</i>	81-8333-086-X	BPB Publications	2005
			<i>A textbook of</i>	-	Nirali	1997

			<i>Engineering Physics</i>		Prakashan, Pune	
Dr S S Darokar			Mechanics and Oscillation	978-93-82962-01-4	G.C.Publisher Nagpur	2012
			B.Sc.Sem I Physics paper I Properties of matter and mechanics	978-93-82962-12-0	G.C.Publisher Nagpur	2013
			B.Sc.Sem I Physics paper I &II Properties of matter and mechanics(Revised edition)	978-93-82962-12-0	G.C.Publisher Nagpur	2014
Dr S S Darokar			B.Sc.Sem II Physics paper I& II	978-93-82962-26-7	G.C.Publisher Nagpur	2014
			B.Sc.Sem III Physics paper I& II	978-93-82962-39-7	G.C.Publisher Nagpur	2015
			B.Sc.Sem IV Physics paper I& II	978-93-82962-53-3	G.C.Publisher Nagpur	2015
			B.Sc.Sem III Experimental Physics	978-93-81432-75-4	Sai Jyoti Publication Nagpur	2015
			B.Sc.Sem IV Experimental Physics	978-93-81432-73-0	Sai Jyoti Publication Nagpur	2015

17. Areas of consultancy and Revenue generated through consultancy

Areas of consultancy	Revenue generated through consultancy before the assessment period	Revenue generated through consultancy during the assessment period
-	-	-

18. Conferences/Seminar /workshop/Guest Lect. organized by the Department.

Guest Lectures Arranged by the Department

- 13th Sept 2017: COCHLEAR IMPLANT-A BOON TO DEAF** said Dr. C. S. Adgaonkar at the Department of Physics, Shri Shivaji Education Society Amravati's SCIENCE COLLEGE Nagpur in the Guest Lecture. The guest speaker Prof. Dr. C. S. Adgaonkar, former Head Department of Electronics, Govt. Institute of Science, Nagpur was welcomed by Dr. S. B. Khasare. In his talk Dr. Adgaonkar emphasized the importance of basic concept of Cochlear Implant and how it bypasses the damaged portion of ear and directly stimulate the auditory nerve. The lecture was received with admiration by the students. The event ended with vote of thanks.
- 14th Dec.2017, Nagpur:** "Purifying water with the help of solar energy can conserve a lot of water on earth" said Dr C.H. Bhosale Professor Emeritus, Department of Physics, Shivaji University, Kolhapur. He explained how

stratified nano-crystalline transition of metal oxide films can be explored for water purification in environmental friendly way. His wonderful way of presentation and the way nano-technology can sort global issues mesmerized students and teachers. The event started with a welcome address by Dr. S. B. Khasare. Dr D K Burghate, Principal, Shri Shivaji Science College appreciated the office bearers of the Physics Society for arranging this programme on short notice.

3. **20th Feb 2018:** Under the auspicious of Physics Society a guest lecture on **Nuclear Magnetic Resonance (NMR) Spectroscopy** was delivered by Professor N N Karade at Department of Physics, Shri Shivaji Science College, Congress Nagar Nagpur. In his deliberations Dr. N.N. Karade emphasized upon the importance of basic concept of NMR spectroscopy and described examples of certain atomic nuclei as how it is useful to exploit magnetic properties. He has given awareness to the students on the problems on NMR spectroscopy from root level to actual mechanism of operation of the spectrometer. The talk was attended by post graduate students of Physics and Chemistry department and research students. Prof R U Khope, Prof Mrs P D Burghate, Prof Mrs Y K Meshram, Prof Mrs Rashmi Urkude, Prof Mrs C S Joshi, Prof Pratik Deshmukh were prominently present. The programme started with the welcome address by Dr S W Anwane, Head, Department of Physics. Prof Mrs Neha Khotele compared the programme while Dr S S Darokar proposed vote of thanks. Dr D K Burghate, Principal, Shri Shivaji Science College appreciated the office bearers of the Physics Society Aishwarya Gupta, Vivek Gupta, Nishant Dhakulkar, Hitesh Algamwar and Ms Rupal Raut worked hard for success of the programme.
4. **24th Feb.2018, Nagpur:** “Nanomaterials have extensive technological applications right from their use in day-to-day devices to treatment of cancers extending upto space programme” said Dr. S. B. Kondawar, Professor at the Post Graduate Department of Physics of Nagpur University, while addressing the post graduate students at Shri Shivaji Science College Nagpur. He was speaking as an invited guest under the auspices of Physics Society at the Department of Physics. The programme started with the welcome address by Dr. S. W. Anwane, Head, Department of Physics. Prof. Ms. Neha Khotele conducted the programme while Dr. S. S. Darokar proposed the vote of thanks. In his deliberations Dr. S. B. Kondawar explained the existence of nano-fibers in nature and laboratory methodologies to prepare quantum dots and nano fibers and emerging synthesis methods. He explained how physical and chemical properties undergo magnificent changes over its bulk properties due to its nano-form. He also explained the SEM characterization method for analyzing nano-fibers followed by how these nano materials have technological use in gas sensors, energy devices, cosmetics, diagnostics and therapeutic practices especially in treating cancer. The programme was attended in large numbers by the PG and research students as well as faculty. Dr D K Burghate, Principal, Shri Shivaji Science College appreciated the office bearers of the Physics Society Aishwarya Gupta, Vivek Gupta, Nishant Dhakulkar, Hitesh Algamwar and Ms Rupal Raut for arranging programme.
5. **7th March 2018: Dr. Smita Acharya**, Professor, Post Graduate Teaching Department of Physics, Nagpur University, introduced to the students emerging technology called SQUID (**Superconducting Quantum Interference Device Technology**) to the post graduate students at Shri Shivaji Science College, Nagpur. The Programme started with the welcome address by Dr. S. W. Anwane, Head, Department of Physics. Prof. Chaitali Joshi conducted the programme while Dr. S. S. Darokar proposed the vote of thanks. Deliberating a guest lecture Dr. Smita Acharya explained the construction and working of “**Superconducting Quantum Interference Device**” which is a very sensitive magnetometer used to measure extremely subtle magnetic fields. Using a device called Josephson junction, a SQUID can detect a change in energy as much as 100 billion times weaker than the electromagnetic energy that moves a compass needle. She also elaborated the superposition in the tiny loop of superconductors employing Josephson junction in SQUID. It have been used for a variety of testing purposes that demand extreme sensitivity, including engineering, medical, and geological equipments. One of the devices most promising uses is in magnetoencephalography (MEG), the process of measuring magnetic fields to enable brain imaging. The programme was attended in large numbers by the PG and research students as well as the faculty members. Dr D K Burghate, Principal, Shri Shivaji Science College appreciated the office bearers of the Physics Society Aishwarya Gupta, Vivek Gupta, Nishant Dhakulkar, Hitesh Algamwar and Ms Rupal Raut who worked hard for success of the programme.

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19. No. of collaborations linkages

Sr. No	Collaborations	International /National / State / Any Other
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20. List of eminent academicians and scientists / visitors to the department.

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21. Details on student enrichment programs (special lectures/workshops/seminar) with external experts:

Title/ Topic of the Program	Whether lectures/ workshops/seminar /other	Name of the external experts	Details of the external experts	Period of Program

22. Participation in Institutional Social Responsibility (ISR) and Extension activities:

Name of the Faculty/	Details of Participation in Co-curricular activities	Details of Participation in Extracurricular activities	Details of Participation in Extension activities including Institutional Social Responsibility (ISR)	Details with dates and period
Dr.H.K.Dahule	Nanotech Programme	Coordinator		
Dr.S.B.Khasare	Physics Society	Coordinator		
Dr.S.W.Anwane	CPE Programme	Coordinator	CPE, AISHE	
Dr.S.S.Darokar	NSS	Advisor		

23. List of Alumni of the Departments:

Sr No	Name and available details
1	Ashish A. Mahabal Senior Research Scientist At Cal. Tech. U.S.A.
2	Appulingam Shriram Working in NABARD
3	Dr. Ashish A. Deshmukh Pursuing Ph.D. IISC Baglore

4	Mr.Prafulla D.Vairagade M.Sc. Applied Geology IIT Mumbai.
5	Ku.Pooja Pingale Canara Bank Mumbai
6	Ku.Roop Singh. IIM
7	Dr.Kamlesh Moon M.P. Deo Science College, Nagpur
8	Dr.S.N.Patil M.Sc.Physics ,Associate Prof .Nashik.
9	Shri Rahul D.Khade Advocate High Court Nagpur
10	Dr.Vikas Bangre , Institute of Science, Mumbai
11	Mr. R. J. Sasan Indian Air Force
12	Mr. A. M. Lele Multinational Based Elect. Space Company U.S.A.
13	Mr. G. Agarwal IIT Guwahati
14	Mr. V. S. Marathe UK
15	Ku. Sandhya U.S.A.
16	Mr. Joshi S. S. Indian Air Force
17	Dr. Varambhe Prof. Food & Tech LIT Nagpur
18	P. V. Dhanodkar System Engg. United Bank Of India Pune
19	Shri Jayant M. Borade NIC Nagpur
20	Shri. Arora Programmer UK
21	Dr. Satish Sangode Scientist E Wadia Inst. of Himalaya Geology Deharadon (UP)
22	Shri V. K. Patkhmode Hydrologist GSDA Pune
23	Shri Devendra Mahajan Hydrologist Sahara India, Lonawala
24	Shri Anup Fartode Lecturer KDK Engg. College, Nagpur
25	Appulingam Shriram Geologist Nabard Patna Bihar
26	Shri D. M. Kolte ,Nagpur
27	Shri. Ravi Bhojar Adv. High Court Nagpur
28	Shri. Arora Programmer UK
29	Shri V. K. Patkhmode Hydrologist GSDA Pune
30	Shri Devendra Mahajan Hydrologist Sahara India, Lonawala
31	Shri Anup Fartode Lecturer KDK Engg. College, Nagpur
32	Appulingam Shriram Geologist Nabard Patna Bihar
33	Shri D. M. Kolte ,Nagpur
34	Shri. Ravi Bhojar Adv. High Court Nagpur
35	Shri. Arora Programmer UK
36	Dr.S.N.Patil M.Sc.Physics ,Associate Prof .Nashik.
37	Dr.Kamlesh Moon M.P. Deo Science College, Nagpur
38	Mr. Malke Govt Poly,Sadar Nagpur.
39	Mr. C.G.Pande WCL
40	Mr. Y.S. Tijare,Nagpur.
41	Mr.Mukwane Meyo Hospital, Nagpur
42	Ku.Nikita Mathankar Enthrall Tech Pune
43	Ku.Renuka Raut Enthrall Tech Pune

24. Plan for the Current Academic Session (2018-19) :

To strengthen academic activities in the department for various courses viz; UG, PG, CoC, Innovative Programme (Nano-tech) and Research Centre.

Future plan for Next Academic Session (2018-19) :

25. To strengthen academic activities in the department for various courses viz; UG, PG, CoC, Innovative Programme (Nano-tech) and Research Centre.

26. Any other information: -

Date:27/09/2018

Signature
Head
Department of Physics