

Madha Taluka Shikshan Prasarak Mandal's

# **K.N. Bhise Arts, Commerce and Vinayakrao Patil Science College, Bhosare**

Paranda Road, Bhosare, (Kurduwadi) Tal-Madha Dist.-Solapur Pin-413 208 (Maharashtra)

## **Department of Physics**

### **Profile**

#### **Objective:**

- 1) To develop an academic excellence as well as thin film materials research
- 2) To achieve overall development of the students to meet the International Standards and to use the knowledge of Physics for Industrial and Research Development in the field of Science.
- 3) To take joint research projects in the field of Nanomaterials, thin film for energy storage devices and solar cells to fulfill the requirements of the society.
- 4) To tie up with Industry for Industry-Departmental joint research projects.

#### **Mission:**

- 1) To undertake quality related research studies, Training programs for the students, Farmers and new Entrepreneur.
- 2) Fostering the Physics research and technology among the students.
- 3) Promoting the use of renewable energy sources in the rural areas.
- 4) Promoting the use of Plastic and electronic waste by making Physics instruments.
- 5) To encourage the Physics students for self-evaluation for higher studies and innovation in Physics.

#### **Activities and Highlights of the Department:**

- 1) Students are encouraged to solve the Quantitative and qualitative aptitude tests as well as previous university question papers.
- 2) Guidance for higher education including Teaching, Research studies, Training and Co-curricular activities.
- 3) Extra efforts are taken for personality development and fine manners and communication skill as well as soft skills.
- 4) Extra care is taken for slow learner through remedial and bridge courses to enrich the knowledge of students as well as they should be computer literate.
- 5) Department organized study tours, science exhibition, institutional visits, encourage to participated in poster presentation for students.

#### **Departmental Facilities:**

Magnetic stirrer; Digital pH meter; Spectrometers; CRO's, Optical bench; Travelling Microscope; Frequency Generators; Sodium (Na) and Mercury (Hg) Lamps; Optical Gratings; He-Ne Laser; Ballistic Galvanometer and various materials for thin film deposition.

## Laboratories

| Sr. No. | Laboratory Name       | Area<br>(Sq. Ft.) | In-charge   |
|---------|-----------------------|-------------------|---|
| 1       | General Physics Lab 1 | 500 Sq. Ft.       | Head, Department of<br>Physics and Mr. B. S.<br>Shiraskar |
| 2       | Dark Room             | 240 Sq Ft         |   |
| 3       | Physics Class room    | 500 S1. Ft/.      |   |

### 1) Physics: Profile

1) Name of the Department: Physics

2) Year of Establishment: 2009

3) Name of Programs/Courses offered:

| Programme (UG)          | Other   |
|-------------------------|---|
| B.Sc.<br>I<br>II<br>III | 1) Subject related Certificate Course.<br>2) Value added Certificate Course.<br>3) Personality development and fine manner. |

4) Names of Interdisciplinary Courses and the departments/ units involved: NIL

5) Annul/Semester/Choice Based Credit System (Programme Wise):

| Annual | Semester/CBCS             |
|--------|---------------------------|
| NIL    | F.Y.; S.Y. and T.Y. B.Sc. |

6) Participation of the departments in the courses offered by other departments:

Faculty of the department contributes in conducting two courses i.e. 1) Personality development and fine manner and 2) Chemical methods for thin films preparation.

7) Courses in collaboration with other university, Industry, Foreign institution: Yes

8) Details of courses/Programs discontinued ( if any) with reason: NIL

9) Number of Teaching Posts:

| Teaching posts | Sanctioned | Filled | CHB Posts Suctioned | Filled |
|----------------|------------|--------|---------------------|--------|
| 3              | 3          | 1      | 6                   | 4      |

10) Faculty Profile with names, qualification, designation, specialization etc.:

| Name                | Qualification | Designation | Specialization    | No. of Yrs. of Teaching Experience. | Ph.D. Student Guided |
|---------------------|---------------|-------------|-------------------|-------------------------------------|----------------------|
| Dr. Ajinkya M. More | M.Sc. Ph.D.   | Asst. Prof. | Thin film Physics | 10                                  | 0                    |

11) List of senior Visiting faculty: NIL

**12) Percentage of lectures delivered and practical classes handled (Programme wise) by temporary faculty:**

| Programme | Total* W/L of Dept.<br>*(2019-20) | Total W/L of permanent faculty | Lectures delivered by Temp. Faculty |      | Practical classes Handled by Temp. Faculty |      |
|-----------|-----------------------------------|--------------------------------|-------------------------------------|------|--|------|
|           |                                   |                                | Yes                                 | 100% | Yes  | 100% |
| B.Sc.     | 150                               | 20                             | Yes                                 | 100% | Yes  | 100% |

**13) Student-Teacher Ratio (Programme Wise):**

| Level | Class                   |    | No. Teachers |     |       | Student-Teacher Ratio |
|-------|-------------------------|----|--------------|-----|-------|-----------------------|
|       | B.Sc. Students Strength |    | Permanent    | CHB | Total |                       |
| UG    | F.Y.                    | 44 | 1            | 1   | 2     | 22:1                  |
|       | S.Y.                    | 37 | 1            | 1   | 2     | 18.5:1                |
|       | T.Y.                    | 18 | 1            | 4   | 5     | 3.6:1                 |
|       |                         |    |              |     |       |                       |

**14) Number of academic support staff (technical) and administrative staff:**

| No. of support staff (Laboratory assistant and laboratory Attended) |            |       |
|---|------------|-------|
| Post  | Sanctioned | Filed |
| Lab Assistant   | -          | -     |
| Lab Attendant   | 01         | 01    |

**15) Qualification of Teaching faculty with D.Sc./ Litt./Ph.D./PDF/M.Phil./SET/NET/SLET/GATE/PG:**

| Qualification of Teaching Faculty |       |         |                           |    |
|-----------------------------------|-------|---------|---------------------------|----|
| PDF                               | Ph.D. | M. Phil | PG with SET/NET/SELT/GATE | PG |
| 1                                 | 1     | -       | 0                         | 4  |

**16) Number of faculty with ongoing projects from a) National b) International funding agencies and grant received: NIL**

**17) Departmental projects funded by DST-FIST, UGC, DBT, ICSSR etc. and total grant received:**

| Faculty Name  | Funding agency | Amount Received | Year | Name of the Project             | Status    |
|---------------|----------------|-----------------|------|---------------------------------|-----------|
| Dr. A.M. More | DST Ahmadabad  | 20000/-         | 2018 | Entrepreneurship Awareness Camp | Completed |

**18) International Travel Grant for attending conference/Symposium: NIL**

**19) Research Center/Faculty recognized by the university: NIL**

Number of recognized research guide: No Associate Research Guide: No

**20) Publications:**

| Publications        |                 |      |       | Total Publications | Books | Edited Books | Total Citation | H Index | I.F. (Avg.) |
|---------------------|-----------------|------|-------|--------------------|-------|--------------|----------------|---------|-------------|
| Name of the Faculty | Research Papers |      |       |                    |       |              |                |         |             |
|                     | Int.            | Nat. | Proc. |                    |       |              |                |         |             |
| Dr. A.M. More       | 12              | 0    | 6     | 18                 | 0     | 0            | 720            | 14      | 1.5         |

**21) Name of Constancy and income granted:**

**Non remunerative Consultancy:**

# Provides assistance to use various laboratory instruments to complete projects students from B.A. and B.Com. of our college as well as school students and other science departments of our college.

# Provides assistance to use lab to prepare thin films of Deshbhakt Garad College students, Mohol.

**22) Faculty as member in:**

| Name of the Faculty | National/International/Other member/Editorial board   | Post Held by the faculty  |
|---------------------|---|---------------------------|
| Dr. A. M. More      | BOS (Co-Board)  | Member                    |
|                     | National Conference (MAS-2018)                        | Convener                  |
|                     | College Various committees                            | Member                    |
|                     | University Flying Squad Committee                     | Member                    |
|                     | Syllabus Committee (PAH SuS)                          | Member                    |
|                     | University Paper Setting Committee                    | Member                    |
|                     | Internal and External Supervisor Committee            | Member                    |
|                     | International Conference @ Pandharpur                 | Technical Advisory member |
|                     | College Avishkar                                      | Coordinator               |
|                     | College EDC   | Coordinator               |
|                     | University Revaluation of Papers Assessment Committee | Member                    |

**23) Student Projects:**

- Percentage of students who have done in-house projects including interdepartmental/Programme: 100%
- Percentage of students placed for projects in organization outside the institution i.e. Research laboratories/Industry/Other agencies: 4.49 %

**24) Awards/Recognition received by faculty and students:**

| Name of the Faculty/Students | Award/Recognition                            | Year | Event and Place                               |
|------------------------------|--|------|---|
| Mr. Dhiraj Bagal             | 1 <sup>st</sup> prize in poster presentation | 2017 | Nat. Conference at Barshi                     |
| Mr. Ganesh Khande            | 2 <sup>nd</sup> prize in poster presentation | 2018 | Nat. Conference at Mohol                      |
| Mr. Sambhaji Kumbhar         | Best poster presentation Prize               | 2018 | Int. Conf. at Jath, Sangli                    |
| Ms. Rohinee Gidde            | Best poster presentation Prize               | 2018 | Nat. Seminar. MAS-2018 at (Bhosare) Kurduwadi |
| Prof. Amar Jadhav            | 2 <sup>nd</sup> prize in poster presentation | 2019 | National Conf. at Dayandand College, Solapur  |
| Ms. Rinaj Shaikh             | Best poster prize                            | 2020 | PAH Solapur University                        |
| Ms. Balu Devkate             | Best poster prize                            | 2020 | SKN Sinhgad Engg. P'pur                       |

**25) Financial assistance Received by students: No****26) Corpus Fund (Toppers Scheme) of College:**

| Name of the student | Class | Year | Amount |
|---------------------|-------|------|--------|
| NIL                 | NIL   | NIL  | NIL    |

**27) List of eminent academicians and scientist/visitors to the department:**

| Sr. No. | Name                     | Address  | Year |
|---------|--------------------------|--|------|
| 1       | Dr. N. V. Kathole        | Director, Mission IAS Amravati   | 2016 |
| 2       | Dr. A. M. Deshmukh       | President, Microbiologist Ecocity, Osmanabad                                     | 2016 |
| 3       | Mr. Sunil Vibhute        | Dept of Chemistry, Shri Shivaji College Barshi                                   | 2016 |
| 4       | Dr. N. M. Shinde         | Busan S. Korea   | 2017 |
| 5       | Prof. (Dr.) B. R. Karche | BOS Chairman Physics, PAH Solapur University                                     | 2017 |
| 5       | Prof. Dr. Ajana Sigh     | Tribuvan University, Nepal   | 2018 |
| 6       | Dr. M. S. Kavale         | Dept. of Physics, Sangmeshwar College, Solapur                                   | 2018 |
| 7       | Prof. S. I. Patil        | Ex. Pro. V C PAH Solapur Univeristy  | 2018 |
| 8       | Dr. Sanjay Lathe         | Asst. Prof Jath. Dist: Sangli  | 2018 |
| 9       | Dr. Shrikant Kokare      | COE, PAH Solapur University  | 2018 |
| 10      | Prof (Dr.) V. B. Patil   | Director School of Physical Sciences and IQAC Coordinator PAH Solapur University | 2018 |
| 11.     | Dr. D. S. Dhawale        | Doha, Qatar  | 2019 |
| 12.     | Dr. S. G. Deshmukh       | Sinhgad College of Engg. Pandharpur  | 2020 |
| 13.     | Dr. Vadagbalkar          | Ex. Pricipale, Dayandand College, Solapur  | 2020 |

**28) Seminar/Conferences/Workshops Organized and the source of Funding;**

| <b>Sr. No.</b> | <b>Title of Seminar/Conference/Workshop/Exhibition</b>          | <b>Funding Agency</b> | <b>Year</b> | <b>Sanctioned Amount</b> | <b>Post held by the staff of Physics Dept.</b> |
|----------------|---|-----------------------|-------------|--------------------------|--|
| 1              | Physics is Fun  | Self Funding          | 2014        | 5000/-                   | Convener                                       |
| 2              | One Day Workshop on B.Sc. –III Revised Syllabus (CBCS -2018/19) | Solapur Uni. Solapur  | 2017        | 5000/-                   | Convener                                       |
| 3              | National Seminar on Modern Approaches in Science (MAS)-2018)    | College Funding       | 2018        | 85000/-                  | Convener                                       |
| 4              | Entrepreneurship Awareness Camp                                 | DST Ahemad abad       | 2018        | 20000/-                  | Convener                                       |

**29) Student Profile Programme/Course wise:**

| <b>Name of the Coured/Prog.</b> | <b>Applications Received</b> | <b>Selected</b> | <b>Enrolled</b> |               | <b>Pass %</b> |
|---------------------------------|------------------------------|-----------------|-----------------|---------------|---------------|
|                                 |                              |                 | <b>Male</b>     | <b>Female</b> |               |
| UG-2014/15                      | 25                           | 22              | 10              | 12            | 68            |
| UG-2015/16                      | 12                           | 10              | -               | 10            | 100           |
| UG-2016/17                      | 20                           | 20              | 5               | 15            | 80            |
| UG-2017/18                      | 20                           | 20              | 10              | 10            | 85            |
| UG-2018/19                      | 20                           | 20              | 10              | 10            | 65            |
| UG-2019/20                      | 18                           | 18              | 08              | 10            | 95            |
| UG-2020/21                      | 22                           | 21              | 8               | 13            | -             |

**30) Diversity of Students:**

| <b>Name of the Course</b> | <b>% students from the same state</b> | <b>% of the from the other state</b> | <b>% students from abroad</b> |
|---------------------------|---------------------------------------|--------------------------------------|-------------------------------|
| UG                        | 100                                   | -                                    | -                             |

**31) How many students have cleared national state competitive examination such as NET, SLET, GATE, SET, Civil services, Defense services etc.?**

| <b>Examination</b> | <b>NET</b> | <b>SET</b> | <b>GATE</b> | <b>Other</b> |
|--------------------|------------|------------|-------------|--------------|
| Students           | 00         | 02         | 00          | 00           |

**32) Student Progression: (2017-2018)**

| <b>Student Progression</b>           | <b>Against enrolled (%)</b> |
|--------------------------------------|-----------------------------|
| UG to PG                             | <b>30</b>                   |
| PG-M.Phil.                           | -                           |
| PG to Ph.D.                          | <b>1.5</b>                  |
| Ph.D. to PDF                         | -                           |
| <b>Employed:</b><br>Campus selection | <b>3.8</b>                  |
| Other than Campus Selection          |                             |
| Entrepreneurship/Self employment     | <b>0.7</b>                  |

**33) Details of Infrastructure Facilities:**

|   |   |
|---|---|
| <b>Departmental library</b>                     | Nearly 90 Ref. and Text books are available             |
| <b>Internet Facility for staff and students</b> | LAN and Wi-fi with 2 desktops                           |
| <b>Class rooms with ICT facility</b>            | 1 Class Room with LCD projector and Lightboard facility |
| <b>Laboratories</b>                             | 2; One general lab and One dark room                    |

**34) Number of students receiving Financial assistance from college, university, Government or other agencies: NIL**

**35) Details on students enriched programs (Special lectures/Workshops/Camp) with external expert:**

| <b>Sr. No.</b> | <b>Year</b> | <b>Title/Type of Prog.</b>            | <b>Name of Resource Person(s) (External)</b>  |
|----------------|-------------|---------------------------------------|---|
| 1              | 2014        | Physics is Fun (Exhibition)           | S. B. Kulkarni  |
| 2              | 2017        | Premotion of Physics through Research | Dr. N. M. Shinde  |
| 3              | 2018        | Superstitions in the era of science   | Mr. Anil Mane   |
| 3              | 2018        | Entrepreneurship awareness            | Mrs. Kamini Gandhi<br>C.A. S. G. Pukle,<br>Prof. Shobha Khnadare,<br>Shri, Ram Sutar<br>Shir. Nagesh Kokare |
| 4              | 2019        | Opportunities in Physics              | Dr. D. S. Dhawale   |
| 5              | 2021        | Opportunities in Material Science     | Dr. Abhijeet Yadav  |

**36) Study tours and Exhibition:**

| <b>Study Tours</b> |                          |                                |  |
|--------------------|--------------------------|--------------------------------|--|
| <b>Sr. No.</b>     | <b>Duration and Year</b> | <b>Name of the Coordinator</b> | <b>Place</b>                                   |
| 1                  | 1 day, 2012              | Dr. A. M. More                 | Science Center, Solapur                        |
| 2                  | 3 days, 2013             | Dr. A. M. More                 | Hydrabad, A.P.                                 |
| 3                  | 2 days, 2014             | Dr. A. M. More                 | Utty, Maysor, Bangalore                        |
| 4                  | 2 days, 2015             | Dr. A. M. More                 | Shivaji University, Kolhapur and Konkan        |
| 5                  | 1 days, 2016             | Dr. A. M. More                 | Railway Coach Industry, Kurduwadi              |
| 6                  | 2 days, 2017             | Dr. A. M. More                 | Shivaji University, Kolhapur and Mahabaleshwar |
| 7                  | 2 days, 2018             | Dr. A. M. More                 | Shivaji University, Kolhapur and Konkan        |
| 8                  | 1 day, 2019              | Dr. A. M. More                 | Solapur University, Solapur                    |
| 9                  | 1 day 2020               | Dr. A. M. More                 | SPPU Pune                                      |
| <b>Exhibition</b>  |                          |                                |  |
| 1                  | 1 day 2014               | Dr. A. M. More                 | KNB College, Kurduwadi                         |

**37) Teaching methods adopted to Improve Students:**

Use of ICT; **Lightboard teaching**, small projects with waste materials; PPT presentation; communication and fine manner skills; Educational tour; Hospital visit; Seminars; video animations, Problem Solving; Poster preparation and presentation skill etc.

**38) Participation in Departmental Social Responsibility (DSR) and Extension activities:**

- 1) Participation in Avishkar from 2016
- 2) Participation in Poster Presentation at Various International/National Conferences in other cities of the state
- 3) Participation and donated "Khau" to Ummid Sanstha
- 4) Participation and donated Books to ZP school Bhosare.
- 5) Eco-Brick project participation to make plastic free campus.
- 6) Social awareness creation by students through small physics projects by waste materials.
- 7) Tree plantation

**39) SWOC analysis of the department and Future plans****\* Strength:**

- # Adequate infrastructure for laboratories
- # Well equipped lab for thin film preparation.

**\* Weakness:**

- # No Collaboration with international and national level research and academic institution
- # Not adequate teaching staff



**\*Opportunities:**

# Undertake minor/major research projects funded by various agencies

**\* Challenges:**

# To fulfill the need of Industry by updating curriculum

# Provide job oriented Programme and campus placements

# To fill the sanctioned post of teaching staff

**\* Future Plans:**

# To have collaboration with institutes and colleges of national repute

# To organize International conference on Nanoscience

**Physics: Achievements  
SET/NET Ph.D. Students**

| Sr. No. | Name of the student     | B.Sc. Passed out year | SET/NET/Ph.D. passed out year |
|---------|-------------------------|-----------------------|-------------------------------|
| 1       | Miss. Nanaware Mangal   | 2014                  | 2018 (SET)                    |
| 2       | Mr. Dattatray Tipe      | 2012                  | 2019 (SET)                    |
| 3       | Dr. Sachhidanand Shinde | 2014                  | 2018 (Ph.D.)                  |
| 4       | Mr. Shivaji Ubale       | 2013                  | 2019 (Ph.D. perusing)         |
| 5       | Mr. Sambhaji Kumbhar    | 2018                  | 2021 (Ph.D. perusing)         |