

Powering Education...Towering Knowledge

Brochure 2020



IPA

IPA - MSB

PHOTO GALLERY

VENTURES OF
IPA-MSB

VISION, MISSION
PEO'S

LAYOUT

TRAINING,
PLACEMENT,
PARTNERSHIP CELLS

ALUMNI &
FACULTY AWARDS

MILESTONES

PHOTO GALLERY

DEPT. OF
PHARMACEUTICS

DEPT. OF
PHARMACEUTICAL
CHEMISTRY

DEPT. OF PHARMACOLOGY

DEPT. OF
PHARMACOLOGY &
PHYTOCHEMISTRY

DEPT. OF
PHARMACEUTICAL
ANALYSIS

AMRUT MODY
RESEARCH FUND

THE RESEARCH
SOCIETY OF BCP

DR. M. K. RANGNEKAR
MEMORIAL TESTING
LABORATORY

ACADEMY FOR
CLINICAL EXCELLENCE



The Indian Pharmaceutical Association (IPA)

The Indian Pharmaceutical Association (IPA) is the premier professional association of pharmacists in India founded on 23rd December 1939, with a member base of over 10,000, spread across the length & breadth of the nation. IPA operates in India through 21 state branches & more than 46 local branches. The members represent various facets of pharmaceutical profession viz. industry, regulatory, community pharmacy, hospital pharmacy & education. IPA is also actively associated in managing several academic programmes. As member of the Drug Technical Advisory Board, India, IPA is actively involved in advising the government on matters of professional importance. IPA is affiliated to international pharma associations like FIP, FAPA, CPA, AAPS, AAiPS, IPSF & WHO, for carrying out various collaborative professional activities which include organizing training programmes for professionals from industry, academics, regulatory & practice, making representations to the authorities on matters of professional interest & working towards constantly upgrading the standards of professional services offered by the pharmacists.

Mission

Mission: The Indian Pharmaceutical Association (IPA) is the national professional body of pharmacists engaged in various facets of the profession of pharmacy. The IPA is committed to promote the highest professional and ethical standards of pharmacy, focus the image of pharmacists as competent healthcare professionals, sensitize the community, government and others on vital professional issues and support pharmaceutical education and sciences in all aspects

Divisions:



IPA Students' Forum (IPA-SF)

IPA Students' Forum (IPA-SF) is a national forum for pharmacy students under the IPA. It aims to bring all pharmacy students under one umbrella so that their energies can be synergized to make a difference. The forum enables them to become better future pharmacists while abiding with the highest ethical and professional standards. This catalyzes their overall development and facilitates development of their academic, leadership and professional skills for their benefit and in turn the profession and thus health of INDIA. Activities of IPA-Student Forum are guided by esteemed personalities of Pharmaceutical professionals from India and abroad.

The Indian Journal of Pharmaceutical Sciences

The Indian Journal of Pharmaceutical Sciences is the bimonthly scientific publication of the IPA. The journal publishes original research work in the areas of Pharmaceutical Sciences (Pharmaceutical Technology, Pharmaceutics, Biopharmaceutics, Pharmacokinetics, Pharmaceutical/ Medicinal Chemistry, Computational Chemistry and Molecular Drug Design, Pharmacognosy and Phytochemistry, Pharmacology, Pharmaceutical and bioanalysis, Pharmacy Practice, Clinical and Hospital Pharmacy, Cell Biology, Genomics and Proteomics, Pharmacogenomics, Bioinformatics and Biotechnology of Pharmaceutical Interest). IJPS is indexed by various abstracting agencies e.g. Chemical Abstracts, DOAJ, International Pharmaceuticals Abstracts, Journal Citation Reports, PubMed, Pubmed Central, Science Citation Index Expanded, Scimago Journal Ranking, SCOLAR, SCOPUS, SIIC databases & is available online (www.ijpsonline.com) Original research work is published in IJPS either as a Full Research Paper or as a Short Communication. Review Articles on current topics in Pharmaceutical Sciences are also considered for publication by the Journal.

Pharma Times

Pharma Times is the news magazine of the IPA. It is a scientific journal and in addition to featuring general articles of professional interest, it also publishes proceedings of the Central Executive Council of IPA, the Annual Report and Accounts of the Association, reports on branch activities, proceedings of IPA Convention, notifications of IPA and other information such as articles, advertisements, announcements etc. Pharma Times is indexed by the search engines - Scopus & Embase of the premier scientific publication house Elsevier.



The Indian Pharmaceutical Association, Maharashtra State Branch (IPA-MSB)

IPA-MSB is a state branch of the IPA initiated in 1941 immediately after the foundation of IPA in 1939. IPA-MSB runs an educational institute, Bombay College of Pharmacy (BCP). The Amrut Mody Research Fund (AMRF), The Research Society of Bombay College of Pharmacy (RSBCP), the Dr. M. K. Rangnekar Memorial Testing Laboratory (MKR), the Academy for Clinical Excellence (ACE), IPA-SF-MSB are other ventures which are governed by IPA-MSB. IPA-MSB is the only state branch of IPA, that has the distinction of getting the BEST BRANCH AWARD constituted by IPA four times i.e. 2004, 2005, 2011, 2012, 2016 and 2017. It has till date 2359 Life members and has active local branches at Pune, Nashik, Aurangabad, Solapur, Nagpur, Kolhapur, Amravati, Dhule and Raigad.

IPA-Student Forum-MSB (IPA-SF-MSB)

IPA-SF-MSB participates actively under the guidance of IPA-MSB in the organization and conducts the National Pharmacy Week celebrations every year. The Rx Festival, which is a cultural event, is also organized by the Student Forum every year, in which students from all the pharmacy Colleges in Mumbai, Navi Mumbai and Thane region and other parts of Maharashtra participate. The IPA-SF-MSB also publishes a magazine called 'Panache' which is greatly appreciated by the members, industry and academicians.

Some of the Activities (Symposia/Seminars/Lectures, etc.) conducted by IPA-MSB in recent past

- Material Science Solution to Formulation and Drug Delivery with ObD Perspective - Particle Size
- Rx Festival - Every Year
- Prospects after Pharmacy Education
- Training Program for Community Pharmacy
- Building Concentration Through Stress Management - Nerul, Ulhasnagar, Chembur
- Rational Design of Modulators of Human Follicle Stimulating Hormone
- DOTS TB Training Program
- Continuing Professional Development Program
- Matrix & Matrics - Compliance Mantra
- Drug Discovery and Development
- National Pharmacy week (NPW)
- Advanced Instrumental Analytical Techniques
- Studies on Reactive metabolites leading to Mechanism Based Inhibition of Cytochromes
- Orientation and future Trends in Pharmacy
- Overcoming Regulatory Compliance Hurdles
- Role of NAT in blood banking
- Monoclonal Antibodies
- To & Thru the Skin
- Training Workshop on "Regulatory Global Scenario" at Taloja
- International Yoga Day
- Dr. H. P. Tipnis Memorial Lecture
- "Let's Do NBA Accreditation" I P A - M S B & Konkan Gyanpeeth
- Free Medical Camp at Karjat organised by Rahul Dharkar College Of Pharmacy, IPA-MSB & Konkan Gyanpeeth
- Health Check-up Camp at Nagpur by Nagpur Local Branch jointly with IPA - MSB
- Interactive lecture by Dr. R. B. Smarta on Soft Skill
- Lecture on GPAT with Pharmacad
- Asthama Checkup Camp at R.F. Naik School, Koparkhairne - WPD
- Seminar on Nutrition at St. Laureate School, Koparkhairne - WPD
- World Pharmacist Day Celebrations at KEM Hospital by Hosp. Pharmacy Div Of IPA-MSB
- Diabetic Monitoring Camp at Div. of Ashwini Chemist - WPD
- Lecture on Stress Management by Dr. Shantesh Kaushik - WPD
- Medical Health Checkup Camp at BCP - WPD
- World Pharmacist Day Celebrations at SNTD college
- Diabetic Monitoring Camp at Shree Sai Medicals, Koparkhairne - WPD
- World Pharmacist Day at Chemist Bhavan Sanpada - WPD
- Diabetic Monitoring Camp at Health Plus Medicals at Navi Mumbai - WPD
- World Pharmacist Day Celebration at Saifee Hospital at Chani Road.
- Nutrition Awareness Camp at R.F. Naik School, Koparkhairane, Navi Mumbai.
- Program on 'Clinical Trials Regulations in India' on 19th Oct. 2017 at BCP.
- Half Day Seminar on "Recent Trends in Science Journalism and Science Communication"
- Principal Meeting to discuss the Action Plan of 'Education Conclave 2018
- Breath Free Camp held at Ashwini Chemist & General Store
- Interactive meeting with Dr. Khalid and Dr. Giannetti at BCP
- Program oheld on the Occasion of 56th NPW Celebration at R.F. Naik School, Kopakhai.
- Seminar on Innovation in Pharmaceutical Industry - Drug Development and Chromatography.



Bombay College of Pharmacy is the first Pharmacy college in India to install the solar system.



The formal announcement of the commissioning of the 50kw Solar Power-on-grid System at Bombay College of Pharmacy (BCP) campus was done at the programme on 28th May 2015, BCP's Foundation Day and concluding ceremony of the Centennial Birth Anniversary of Padmabhushan Late Shri Amrut Vithaldas Mody (Founder Chairman of the Governing Body of the BCP).

Looking at the success ratio of the 50kv solar power-on-grid system at BCP additional 90kv system has been installed on 4th Feb 2017 totaling to 140kv. followed by installation of Net Meeting for the optimal utilization of resources

HINDUSTAN TIMES, MUMBAI
MONDAY, NOVEMBER 13, 2017

hindustantimes metro 05

Sun shines on Kalina college; ₹1.6L saved

WATT AN IDEA 453 solar panels, installed across a 13,500 sq ft terrace, generate 15,399 units of electricity every month



ECO-FRIENDLY WAYS

Badri Chatterjee

badrichatterjee@hindustantimes.com

MUMBAI: One of the largest rooftop solar power generation systems in Mumbai helps Bombay Pharmacy College in Kalina to power 70% of its electricity requirements from the sun.

The college saves Rs1.6 lakh every month in electricity bills by running the 140 kilowatt-power (kWp) system that has 453 solar panels installed across a 13,500 sq ft terrace area. The system generates an average 15,399 units of electricity per month and runs lights, fans, air-conditioners, and lifts across 13 laboratories, seven classrooms, the college administration office area and the canteen. For a comparison, a two-bedroom flat in Mumbai uses 300-360 units of electricity per month.

Solar energy, apart from being renewable and free, does not cause pollution unlike power plants that burn coal, gas and oil. Solar energy can be used in remote areas where electricity

SOAKING UP THE SUN

WHAT IS SOLAR ENERGY?

Solar energy is a free source of renewable energy

WHY IS IT IMPORTANT?

Generation of solar power does not cause carbon emissions that come from burning coal, gas and oil for generation of electricity

Solar energy can be used in remote areas where electricity from the grid cannot be accessed

Gadgets like calculators, street lights and other low power-consuming devices can be powered by solar power

The potential to harness solar energy as a natural resource is infinite

■ **The 453 solar panels** installed across a 13,500 sq ft terrace area.

HOW TO HARVEST RAINWATER

Rainwater can be harvested in several ways:

One way is to assist rainwater to seep into the ground and recharge groundwater levels. In this process, wells will have water for a longer period in the dry season

Rain water falling on building terraces can be diverted and stored for use in the dry season



■ Students and staff stand near the medicinal garden located near the entry of the college. PHOTOS BY KUNAL PATIL/HT

KEEP IN MIND

Rain can be acidic, because it mixes with atmospheric gases, so it needs to be processed before it is used for drinking or cooking. Unprocessed rain water can be used for non-potable purpose like flushing toilets and watering gardens

Around 800 million litres of water is wasted through leakages in tankers every day, according to the data provided by the BMC. Rainwater harvesting can help save this precious resource

from the grid cannot be accessed. Nitin Navnitray Maniar, chairman, governing body, Bombay Pharmacy College and special executive officer for the state government, said, "We went for such a large-scale setup because this energy source is

both eco-friendly and cost-effective, and allows us to give something back to the environment."

Founded by the Indian Pharmaceutical Association, Maharashtra State Branch in 1957, the college has over 400 undergraduate, postgraduate and PhD stu-

dents along with 80 teachers and staff members. The college is spread across 65,000 sq ft area with one quarter-of-an-acre garden that has medicinal plants and a large ground allocated for extracurricular activities and events.

The solar project was completed in two phases. In the first phase, a 50kWp setup at a cost of Rs39.5 lakh in May 2015, and in the second phase in February this year, a 90kWp unit was installed for Rs49.5 lakh. "We expect to recover the entire Rs89

lakh by 2021. We have already received Rs14.59 lakh in the form of subsidy (30%) from the state government. We estimate annual savings of Rs20 lakh from this project," he said.

Prior to the solar installation, the monthly electricity bill for the college was Rs2.25 lakh that fell to Rs1.65 lakh post installation. The campus also uses a net-metering system, which allows surplus power generated through solar panels to be sent back to the grid and any deficiency is imported from the grid.

The college also has a rainwater harvesting system that collects water during the rains for use later. The college estimates that it has saved close to 32 lakh litres of water through rainwater harvesting since 2009. The college complex does not depend on the civic body for its non-potable water consumption. The rooftop and common areas act as catchment for rainwater. The water collected is channelled into to a well with a capacity of 50,000 litres, and the water is used in the 45 washrooms on campus. "The water is also used in our gardens. Channels have been dug up through the campus that allows water to drain into the well," said Maniar.

The Indian Pharmaceutical Association-Maharashtra State Branch's Bombay College of Pharmacy - Autonomous

Vision

To be a leader in Pharmacy Education, Pharmacy Training and Research in Pharmaceutical Sciences.

Mission

- To educate and train students in the knowledge and practice of pharmaceutical sciences
- To contribute to improvement of health of the society through education programs
- To contribute to improvement of health of the society through research programs

Grant-in-aid institution

Maharashtra State Government Aided Institute Approved by AICTE, DTE, PCI, UGC, Permanent affiliation to University of Mumbai and Recognised by DSIR (Govt. of India)

National Institutional Ranking Framework (NIRF) by MHRD India Rankings 24th in 2019, 8th in 2018, 15th in 2017 & 6th in 2016

FICCI 2019 : 6th Higher Education Excellence Award, Special Jury Mention for 'Excellence in enabling Research Environment'
Best Industry Linked Pharmacy Institution (Established Degree) 2nd in 2019, Mentor in 2015, 1st in 2014 & 2013

Accredited by National Board of Accreditation for UG Program for the Academic years 2017-18 to 2021-22 ie. upto 30.06.2022

For scholarship please visit BCP website www.bcp.edu.in

LEGACY- BOMBAY COLLEGE OF PHARMACY.

Bombay College of Pharmacy is a 62-year old premier pharmacy institute of repute with NIRF ranking of 6th, 15th, 8th and 24th for the last four years.

Bombay College of Pharmacy has been bestowed upon with numerous awards and accolades and the most recent ones include the AICTE-CII award for the 'Best Industry Linked Pharmacy Institute' for the 4th time in recent years, a special 'Jury Mention Award' in Research category at FICCI 2019 and 'National Education Leadership Award', ABP NEWS 2019 and the list goes on and on.....

The Institute is also proud to have the National Facility for Research And Training In Integrated Analytical Strategies For Discovery, Development And Testing Of Drugs, Pharmaceuticals And Nutraceuticals- A 5.87 crore project sanctioned by the Department of Science and Technology under the Drugs and Pharmaceutical Research Program, within the campus.

BCP, through its extensive collaboration with various corporate clients, research grants from various funding agencies and Consultancy projects, has developed excellent infrastructure and 'State Of Art' facility that fosters the development of the students in academics and research. BCP has been a recipient of over Rs. 10 crores as research grants from the DEPARTMENT OF ATOMIC ENERGY (DAE), BOARD OF RESEARCH IN NUCLEAR SCIENCE (BRNS), UNIVERSITY OF MUMBAI (UOM), DST, UGC, DBT, CSIR, ICMR and research grants worth Rs. 1 crore from corporate sector in the last 5 years.

The college has been ranked amongst the top 25 pharmacy institutions in India under NIRF, MHRD.



“Education Leadership Award”
at National Education Awards 2019
organized by ABP news
at Taj Lands' End,
Mumbai on 4th July 2019.



Special Jury Mention Award for 'Excellence in
Enabling Research Environment' at the
6th FICCI Higher Education Excellence Awards 2019
held in New Delhi on November 27, 2019.

The Indian Pharmaceutical Association - Maharashtra State Branch's Bombay College of Pharmacy

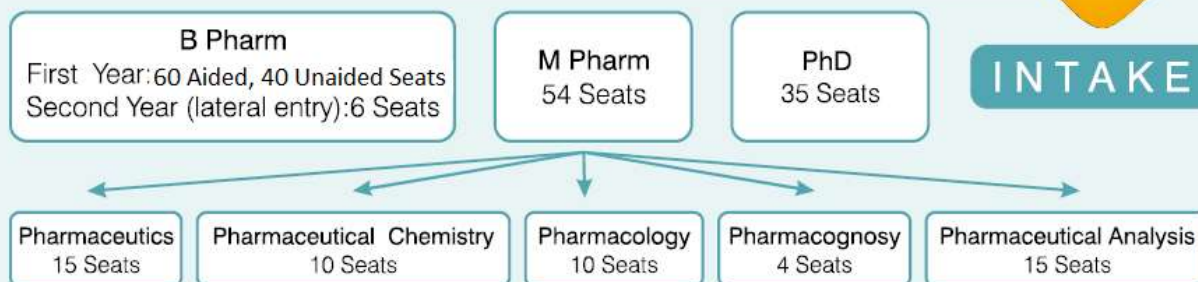
VISION

To be a leader in Pharmacy Education, Pharmacy Training and Research in Pharmaceutical Sciences.

MISSION

- To educate and train students in the knowledge and practice of pharmaceutical sciences
- To contribute to improvement of health of the society through education programs
- To contribute to improvement of health of the society through research programs

Bombay College of Pharmacy (BCP) is a pioneer institution in pharmaceutical education in India. BCP was founded in 1957 by the Indian Pharmaceutical Association - Maharashtra State Branch (IPA - MSB) with financial assistance from the Government of Maharashtra and several pharmaceutical companies. It is centrally located and well connected by road, rail and air. Since its inception as a college offering a Diploma in Pharmacy, the college has grown in stature and at present offers Bachelors, Masters, and Doctoral programs of study in Pharmaceutical Sciences.



PROGRAM EDUCATIONAL OBJECTIVES

To teach and help assimilate theoretical knowledge in various fields of Pharmaceutical and Allied Sciences namely

- Pharmaceutical Chemistry
- Pharmaceutics
- Pharmacology
- Pharmacognosy
- Pharmaceutical Analysis
- Clinical & Industrial Pharmacy
- Microbiology & Immunology
- Biochemistry & Biotechnology
- Mathematics & Statistics

To teach and help assimilate the practical / laboratory skills/ knowledge in various fields of Pharmaceutical and Allied Sciences namely

- Pharmaceutical Chemistry
- Pharmaceutics
- Pharmacology
- Pharmacognosy
- Pharmaceutical Analysis
- Clinical & Industrial Pharmacy
- Microbiology & Immunology
- Biochemistry & Biotechnology

To foster development of students through participation in the Indian Pharmaceutical Association Student Forum, Drug information Agency, Indian Pharmaceutical Association- Maharashtra State Branch Symposia, International Society for Pharmacoeconomics and Outcomes Research

To develop leadership skills, team building skills, community service outlook, continuing education opportunities, and ethical practices

Please visit website links for following information -

Fee structure of B. Pharm, M. Pharm and Ph.D courses - <https://www.bcp.edu.in/Admission.aspx>

Grievance Redressal - https://www.bcp.edu.in/Grievances_Redressal.aspx

Women's Grievance Redressal - https://www.bcp.edu.in/Women%E2%80%99s_Grievance%20Redressal_Committee.aspx

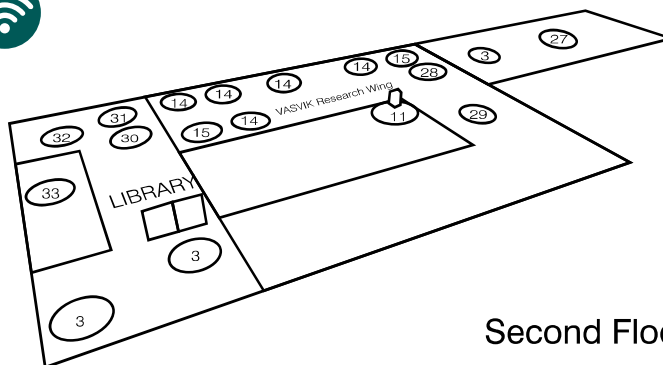
Anti ragging - https://www.bcp.edu.in/Anti_Ragging_Committee.aspx

Anti capitation - <https://www.bcp.edu.in/Anti%20Capitation%20Fee%20Act,%201987,%20Maharashtra%201988.06.pdf>

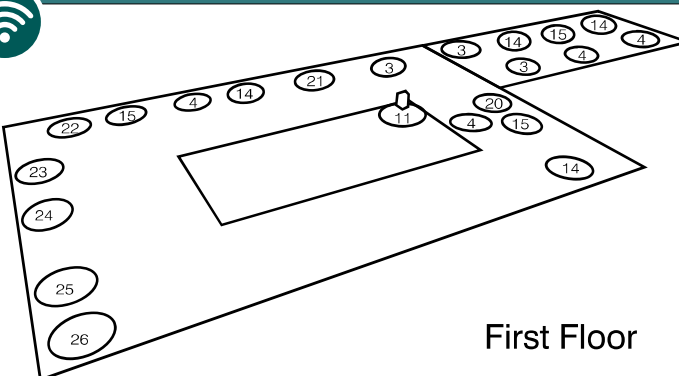


BIRD'S - EYE VIEW

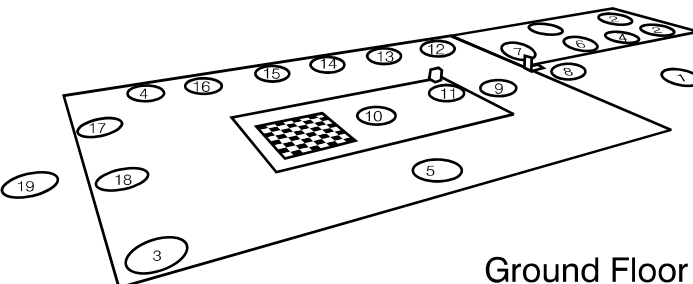
1. Medicinal Plant garden
2. Seminar Halls
3. State- of- the- art class rooms
4. Fully equipped Laboratories
5. Auditorium
6. Aseptic area
7. Distilled water plant
8. Entry for the disabled
9. Canteen area
10. Recreational Area
 - Carrom boards
 - Garden Chess Set
 - Table tennis
11. Lift
12. Girls common room
13. Machine room
14. Research Laboratories
15. Staff rooms
16. Stores
17. RIA laboratory
18. Boys common room
19. 4 Acre Play ground
20. Museum
21. Sophisticated Central Instrument room
22. Administrative office
23. Accounts
24. IPA-MSB office
25. IPA office
26. Conference room
27. National Facility for Research and Training
28. High speed computation facility and server room
29. MKR laboratories LIBRARY
30. Thesis /reference section
31. Language Laboratory
32. Books (> 10000 books) reference section and Periodicals
33. High speed network connected latest computer laboratory
34. VASVIK Research Wing
35. Terrace - 140kv solar system



Second Floor



First Floor



Ground Floor

* Not to scale

* Free usage of Office 365 suite for bonafide students, staff of BCP



: With 30mbps dedicated internet lease connectivity

MILESTONES

2019

Bombay College of Pharmacy attains **"Autonomous"** status for a period of 10 years

2019

FICCI 6th Higher Education Excellence Award Special mention for excellence in enabling Research Environment

2019

Ranked 24th amongst Pharmacy Institutions of India by MHRD under National Institutional Ranking Framework (NIRF)

2018

2nd Prize for Best Industry linker Institute in Pharmacy Category from AICTE-CII

2018

Ranked 8th amongst Pharmacy Institutions of India by MHRD under National Institutional Ranking Framework (NIRF)

2017

Accreditation for 5 years by NBA

2017

Grant Rs. 5.87 Crores from DST DPRP for National facility for Research & Training

2017

Ranked 15th amongst Pharmacy institutions of India under NIRF MHRD

2015

BCP and University of Mumbai fetched First runner up Trophy in national research competition AVISHKAR

2016

Ranked 6th amongst Pharmacy Institutions by MHRD under (NIRF)

2008

Accreditation for 5 years by NBA

2004

FIST grant from DST for improving infrastructure

2008

Golden Jubilee Celebrations. An International Symposium "Designing the future New Medicines and New Methods" conducted on 18th and 19th Jan. 2008 at Hyatt Regency Mumbai

2011

Postgraduate Course in Pharmaceutical Analysis with intake for 18 students

2011

BCP and University of Mumbai fetched Gold Medal(s) and a Trophy in AVISHKAR

2013

Best Industry Linked Institute in Pharmacy category from AICTE- CII

2013

Inauguration of Radioimmunoassay Lab (RIA)

2014

Best Industry Linked Institute in Pharmacy category from AICTE- CII

2013

Ranked Country's 4th Best Pharmacy College by a Survey

2015

IndPact Mentor Award for Best Industry - Linked Pharmacy Institute from AICTE-CII

2001

Patents Awareness Workshop in Collaboration with TIFAC- Govt. of India

1998

Golden Jubilee IPCA Conference Jointly with FAPA Conference

1995

Inauguration of **"Ramesh Banatwala Memorial Industrial Pharmacy Laboratory"** and Permanent Affiliation to University of Mumbai

1993

International Symposium on "Update on Bioavailability and Bioequivalence"

1990-1993

Foundation and opening of **"Bioavailability Centre"**

1984

The Silver Jubilee of the college was celebrated and an International Symposium on "Advance in Drug Delivery System" was held

1956

The idea of establishing the Bombay College of Pharmacy (BCP) was formulated under the leadership of the Late Prof. M. L. Khorana in 1956, in the form of a short term course called "Practicing Pharmacists Training (PPT) course "

1957

The Diploma course was started and BCP was formally constituted

1966

The Building at Kalina was inaugurated and BCP hosted the 18th Indian Pharmaceutical Congress

1970

BCP was affiliated to the Mumbai University for the B. Pharm course

1973

BCP was affiliated to the Mumbai University for the M. Pharm and the PhD(Tech) course. The College also received its first research grant from CSIR. Since then several important events have marked the progress of BCP

1976

The UNESCO Microbiology workshop

1977

The Second Commonwealth Pharmaceutical Congress jointly with the 28th I.P.C.A and the Pharma Expo-77

1981

The Research Society of the Bombay College of Pharmacy was formed and registered with the Department of Scientific and Industrial Research (DSIR), Govt. of India

1982

The M.S.D auditorium, with seating capacity of 500 was opened



TRAINING AND PLACEMENT CELL

The placement cell of Bombay College of Pharmacy acts as a contact point for pharma and allied industries that wish to recruit students from the BCP. It also organizes pre-placement talks for corporates who wish to visit the campus for recruitment.

Some of our eminent recruiters include:



INDUSTRY INSTITUTE PARTNERSHIP CELL

The main objective of this cell is to act as a liaison between industries and the BCP. The following are the major activities of the IIP cell :-

- Maintenance, co-ordination & promotion of consultancy services
- Infrastructure development for strengthening the various departments
- Industry study tour programme (ISTP), internship programme & placement of students
- Tax Incentives from government

- Industrial training and industrial visits for students
- Industrial exhibitions
- Training of industrial personnel in Bombay College Pharmacy
- Guest lectures
- Generate funds from industry / other agencies for maintenance & development of the cell

DEPARTMENT OF PHARMACEUTICS

Faculty:

Ujwala Shinde, Ph.D. (Tech), Associate Professor
Head of Dept. (ujwala.shinde@bcp.edu.in)
Clara Fernandes, Ph.D. (Tech), Associate Professor
(clara.fernandes@bcp.edu.in)
Shubhangi Aher, M.Pharm, Assistant Professor
(shubhangi.aher@bcp.edu.in)
Harita Desai, Ph.D. (Tech), Assistant Professor
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Vivek Dhawan, Ph.D. (Tech), Assistant Professor
(vivek.dhawan@bcp.edu.in)
Mangal Nagarsenkar, Ph.D. (Tech), Professor Emeritus
(mangal.nagarsenkar@bcp.edu.in)
Mala Menon, Ph.D. (Tech), Adjunct Professor
(mala.menon@bcp.edu.in)



The Department of Pharmaceutics is dedicated to undergraduate teaching and is actively involved in research at the post graduate (M. Pharm. and Ph.D.) level. The department is equipped with the necessary infrastructure essential for smooth undergraduate teaching. The department also has state-of-the-art facility to support post graduate research activities.

Key Research areas :

- Novel Drug Delivery Systems-Liposomes, Niosomes, Polymeric micelles, Microparticles, Nanoparticles, Gene delivery, Nanodots & Implants.
- Solubility enhancement technology - Cyclodextrin based systems, Crystal engineering
- Probiotic formulation and testing
- Polymeric coatings and Pelletization
- Novel veterinary formulations
- Polymer Synthesis, design of ligands for targeting
- Mucosal vaccine delivery
- Development of analytical methods and validation of in-vitro dissolution and permeation methodologies
- Sustained and controlled release systems for oral, pulmonary, nasal, ocular and transdermal applications

The Industrial Pharmacy Laboratory has facilities :

- For solid dosage forms, which include rapid mixer granulator, fluidized bed coater, GMP model compression machine and dissolution test apparatuses.
- For novel systems which include probe sonicators, high speed homogenizer, spray dryer, freeze dryer, type 4 dissolution test apparatus, vertical diffusion cells, high pressure homogenizer, DSC, particle size analyzers and HPLC systems.

Collaborations

The department also collaborates with pharmaceutical corporate clients for preformulation, formulation development and pilot plant scale up projects. Some of the clients include :

- | | | | |
|------------------------|--------------------------|------------------|--------------------------------|
| • Unichem Labs | • Bayer (I) Ltd. | • Famy Care Ltd. | • Saife Vetmed Pvt. Ltd. |
| • Novartis (I) Ltd. | • Glenmark Ltd. | • Mother Dairy | • Pfizer Ltd. |
| • Naprod life sciences | • Macleods Pharma Ltd. | • USV (P) Ltd. | • Curatio Healthcare Pvt. Ltd. |
| • Inventia Pvt Ltd. | • Serum Institute | • M/s Infovet | • Brassica Pharma |
| • Abbott India Ltd. | • ACG | | |
| • Hansen Probiotics | • Lubrizol Life Sciences | | |
| • Marico Ltd. | • Gattefosse (I) Ltd. | | |



Department has established several research international as well as national collaborations in areas of drug delivery research. Department has successfully collaborated with:

International

- Interactural Department of Pharmaceutical Technology, University of Jena, Germany
- Centre of Drug Research, University of Helsinki, Finland
- Department of Pharmaceutical Technology, Goethe University, Germany
- Bristol Myers Squibb, USA
- Lupin Pharmaceuticals, USA



National

- Advanced Centre for Treatment, Research and Education in Cancer (ACTREC, Navi Mumbai)
- GS Medical college and KEM Hospital (Parel, Mumbai)
- Bombay Veterinary College (BVC, Mumbai)
- Serum Institute of India (Pune)
- Board of Radiation and Nuclear Science (BRNS, Mumbai)
- Haffkine Institute, Parel
- Department of Pharmacy, Tripura University (Central University)



Department also provides services in characterization of drug delivery systems which include:

- Size determination using Beckmann Coulter, USA
- Zeta potential using Malvern NanoSizer Series ZS (UK)
- In vitro lung deposition using Andreason Cascade Impactor, Copley Scientific, UK
- In vitro skin permeation studies using Vertical Diffusion Cell, Hanson Research, US
- Differential Scanning Calorimetry studies using DSC, Mettler Toledo, Switzerland
- Probiotic cultures and formulation Testing
- Size reduction using high pressure homogenizer
- R&D scale batches on spray dryer, freeze dryer, Fluid Bed Coater.



Publications:

More than 200 publications in high impact factor journals like

- | | |
|---|---|
| • Journal of Controlled Release | • Cell Oncology |
| • International Journal of Pharmaceutics | • Carbohydrate Research |
| • Molecular Pharmaceutics | • RSC Advances |
| • Nanomedicine-Nanotechnology, Biology and Medicine | • Dissolution Technology |
| • AAPS PharmSciTech | • Nanomedicine-Future Medicine |
| • Journal of Pharmaceutical Sciences | • Drug Development and Industrial Pharmacy |
| • Journal of Microencapsulation | • Respiratory Drug Delivery (Proceedings of Conference) |
| • Journal of Drug Delivery and Therapeutics | |

Faculty has contributed chapters in several books and has acquired patents and trademarks.

More than 300 papers have been presented by the department in national and international conferences, symposia and seminars.

Faculty is frequently invited to deliver lectures in field of novel drug delivery systems.



DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

Faculty:

Evans Coutinho, Ph.D. (Tech), Professor

(evans.coutinho@bcp.edu.in)

Krishna Iyer, Ph.D., Professor

Head of Department (krishna.iyer@bcp.edu.in)

Premlata Ambre, Ph.D., Associate Professor

(premlata.ambre@bcp.edu.in)

Abhijeet Dalvi, M. Pharm., Assistant Professor

(abhijeet.dalvi@bcp.edu.in)

Elvis Martis, Ph.D., Assistant Professor

(elvis.martis@bcp.edu.in)



Research Guides from other departments:

Krishnapriya Mohanraj, Ph.D.(Tech), Professor & I/C Principal

(krishnapriya.mohanraj@bcp.edu.in)

Vaishali Shirsat, Ph.D. (Tech), Associate Professor

(vaishali.shirsat@bcp.edu.in)

Areas of Research:

- Multidimensional and multinuclear NMR
- Multidimensional QSAR
- Molecular Dynamics Simulations
- Protein Modeling
- Pharmacokinetics
- Process development for intermediates and bulk drugs
- Molecular modeling and Drug Design
- Binding Free Energy Calculations
- Quantum Mechanical Calculations
- Drug Metabolism
- Synthetic Medicinal Chemistry
- Plant xenobiotic metabolism

Facilities available in the department include:

- CEM Discover Microwave synthesizer
- Shimadzu HPLC with dual wavelength UV detector
- Jasco HPLC with PDA and fluorescence detector
- Jasco UV-visible spectrophotometer
- Low temperature synthesizer
- Buchi Flash Chromatography with fraction collector C-660 and Buchi pump manager C-615
- Jasco HPLC with UV detector
- CAMAG HPTLC
- Roteva Rotary evaporator
- Molecular modeling software -



Extra mural funding:

- All India Council of Technical Education (AICTE)
- Council of Scientific and Industrial Research (CSIR)
- Department of Science and Technology (DST)
- Spring Bank Pharmaceuticals, USA.
- University of Mumbai
- University Grants Commission (UGC)
- Department of Biotechnology (DBT)
- BASF, Germany
- Bristol Meyers Squibb (BMS, USA)

Collaborative Programs:

- UM-DAE Center for Excellence in Basic Sciences, Mumbai
- Chemworks, Mumbai
- Tuberculosis Research Centre, University of Illinois, Chicago, USA
- Chandigarh College of Pharmacy, Mohali, Punjab
- School of Biochemistry, University of Bristol, UK
- Eli Lilly, USA
- Institute for Pharmaceutical and Medicinal Chemistry, Heinrich-Heine University, Düsseldorf, Germany
- University Institute of Pharmaceutical Sciences, Punjab University, Chandigarh
- Department of Chemistry, Saurashtra University, Rajkot
- Indofil Ltd., Thane, Maharashtra
- Department of Molecular Microbiology and Immunology, Bloomberg School of Public Health, Johns Hopkins University, USA
- Kingston University, London
- Central Effluent Treatment Plant, Ambarnath

Publications:

More than 170 research publications in high impact factor journals like:

- The Journal of American Chemical Society
- Journal of Organic Chemistry
- Biochemistry
- FEBS Lett.
- Tetrahedron
- Journal of Computer Aided Molecular Design
- Journal of Molecular Graphics and Modeling
- Journal of Molecular Modeling
- Drug Metabolism and Disposition
- Biomaterials
- Journal of Medicinal Chemistry
- Journal of Chemical Information and Modeling (Formerly known as Journal of Chemical Information and Computer Science)
- Journal of Computational Chemistry
- QSAR and Combinatorial Science
- Journal of Peptide Science
- Bio-organic and Medicinal Chemistry
- Chemical Research in Toxicology
- Biopolymers
- Water Science & Technology

Faculty has also contributed chapters in several books and Encyclopedias. More than 200 papers have been presented by the faculty in Conferences, Symposia and Seminars in India and abroad besides being invited for lectures in Conferences, Seminars, Workshops etc.



DEPARTMENT OF PHARMACOLOGY

FACULTY:

Anuradha Ghosh Majumdar, Ph.D. (Tech), Associate Professor & Dean, Faculty of Science and Technology, University of Mumbai (anuradha.majumdar@bcp.edu.in)

Vaishali Dixit, Ph.D. (Tech), Associate Professor Head of Department (vaishali.dixit@bcp.edu.in)

Rachna Kaul, Ph.D. Associate Professor (rachna.kaul@bcp.edu.in)

Puja Gaikwad, M. Pharm, Assistant Professor (puja.gaikwad@bcp.edu.in)

Shivangi Patel, M. Pharm, Assistant Professor (shivangi.patel@bcp.edu.in)



The Department of Pharmacology, Bombay College of Pharmacy, is reputed for its preclinical research in India. The department offers Master and Ph.D. in Pharmacology. This course is approved by the All India Council of Technical Education, Directorate of Technical Education, Maharashtra State and the University of Mumbai. The department boasts of experienced and renowned faculty and well equipped Pharmacology and Toxicology laboratories. The laboratories are designed to cater to preclinical pharmacological and toxicological evaluations of drugs/herbals/phytochemicals using contemporary in vivo and in vitro tools. The department has been prolific in its outcome of successful completion of several industry and Government sponsored projects.

Some of our Research Expertise:

Pharmacological screening and evaluation in the domain of:

- Inflammation and Immunology
- Cardiovascular and Respiratory disorders
- Cancer
- Cellular and Molecular Biology
- Diabetes and Metabolic disorders
- Neuropharmacology and Behavioural Pharmacology
- Pharmacokinetics
- Safety Pharmacology and Toxicology
- Metalloid toxicity studies
- Herbal and Phytochemical analysis
- Metabolism and Pharmacokinetic studies
- NDDS
- Consultancy in pharmacological and toxicological field
- Medical writing (Publication and Medical Information)
- In-vivo non-invasive imaging (CT, IVIS ect.)
- Radioactivity studies
- Injectable formulation development & preclinical testing
- Transdermal drug delivery
- Neurology
- Orthotopic model development & standardization

Facilities available in the department include:

- CPCSEA approved animal house facility.
- HPLC with PDA and fluorescence detector.
- Intracerebroventricular (i.c.v.) drug delivery and CSF aspiration in rodents using Stereotaxic apparatus and Nanomite pump.
- Real time Polymerase Chain Reaction based Equipments both semi-quantitative PCR and RT-qPCR.
- Radio Immunoassay laboratory offering rat serum insulin and estradiol measurements.
- Zebra fish and Drosophila Experimental facility.
- Physiological data acquisition system like Laser Doppler Flow meter, 8 and 4-channel Power Lab data acquisition system with Spirometry, ECG, NIBP, IBP, NCV, isolated muscle preparation nerve electro physiology measurements etc.

- Protein quantification and characterisation through western blot, gel electrophoresis and gel documentation system.
- Dedicated mammalian cell culture facility for Cell Proliferation and Cytotoxicity studies.
- Other instruments include Roteva Rotary evaporator, Plethysmometer, hot plate, Actophotometer, Rota-rod, Cooks pole climbing apparatus, forced swimming test apparatus, rodent and zebrafish mazes, recording devices etc.
- The biochemical parameter assessment through blood-gas analyzer, auto-analyzer, cell counter, ELISA Plate reader.

Funding, infrastructural support, collaborative research and industrial projects, consultancy assignments include:

Funding Agency (Government)

- | | |
|--|--|
| 1. All India Council for Technical Education (AICTE) | 7. Indian Council of Medical Research (ICMR) |
| 2. Central Council for Research in Ayurveda & Siddha (CCRAS) | 8. Board of Research in Nuclear Sciences (BRNS) |
| 3. Council of Scientific & Industrial Research (CSIR) | 9. University of Mumbai |
| 4. Department of Science and Technology (DST) | 10. Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (Ayush) |
| 5. Department of Biotechnology (DBT) | 11. Department of Biotechnology - Biotechnology Industry Research Assistance Council (DBT-BIRAC) |
| 6. University Grants Commission (UGC) | |

Funding Agency (Industry)

Alembic Ltd., Aurobindo Pharma Ltd., Bharat Serums and Vaccines Ltd., Cipla Ltd., Clinworld Pvt. Ltd., Criticare Laboratories Pvt. Ltd., Elder Pharmaceuticals Ltd., FDC Ltd., Glenmark Pharmaceuticals Ltd., Gufic Healthcare Ltd., Hetero Drugs Ltd., Hindustan Lever Ltd., Ipca Laboratories Pvt. Ltd., Kopran Ltd., Khandelwal Labs Ltd., Lupin Laboratories Ltd., Macleods Pharmaceuticals Ltd., Marico Ltd., Medley Pharmaceuticals Ltd., Micro Labs Ltd., Siro Clinpharm Pvt. Ltd., Sun Pharmaceutical Industries Ltd., Shreya Life Sciences Ltd., Sandu Pharmaceuticals Ltd., Themis Medicare Ltd., Torrent Pharmaceuticals Ltd., Unichem Laboratories Ltd., Yasham P2D Life Sciences, Lamar Group of Companies, Charak Pharma Ltd. etc.



The department also conducts "Technical Developmental Programs" for industry personnel on:

- Skill development program in animal handling and preclinical pharmacological Evaluation Methods.
- Skill development program for Medical Product Marketing and Sales Representation.

Consultancy Services:

- Consultancy Services in field of Preclinical and Clinical Pharmacology.



DEPARTMENT OF PHARMACOGNOSY & PHYTOCHEMISTRY

Faculty:

Alka Mukne, Ph.D., Associate Professor &
I/C Head of Department (alka.mukne@bcp.edu.in)

Galvina Pereira, Ph.D., Assistant Professor
(galvina.pereira@bcp.edu.in)

The Department of Pharmacognosy and Phytochemistry offers Masters and Doctorate in Pharmaceutical Sciences, approved by All India Council of Technical Education (AICTE), Directorate of Technical Education, Maharashtra State and University of Mumbai.



The Department of Pharmacognosy & Phytochemistry has a reputation for excellence in research and has experienced and technically - competent faculty with the following areas of expertise:

- Standardization of crude drugs and herbal extracts
- Bio-activity guided fractionation of herbal extracts
- Evaluation of therapeutic potential of crude drugs and their various extracts
- Study of different parameters of extraction of herbal drugs and optimization
- Isolation and characterization of phytoconstituents from herbal extracts
- Solubility manipulations of drugs of natural origin by various techniques
- Development of conventional formulations and Novel Drug Delivery Systems of herbal extracts
- Analytical method development and validation for crude drugs, herbal extracts and herbal formulations by HPLC, HPTLC and other chromatographic techniques
- Stability studies and shelf life study of herbal formulations
- Development and evaluation of Ayurvedic formulations, Nutraceuticals and cosmeceuticals



The department is well-equipped with state-of-the art equipment and facilities for conducting first-grade research in the area of herbal drug discovery, development and evaluation. Given below are few of the high-end equipment available with the department:

- CAMAG HPTLC with LINOMAT V Applicator and Scanner
- Agilent HPLC with Quaternary pump & PDA Detector
- Supercritical Fluid Extractor
- Buchi Rotary Vacuum Evaporator
- Virtis Lyophilizer
- Esco Class II Biosafety Cabinet
- BioRad ELISA Reader
- Gel electrophoresis

The Department has received funding for its research projects from various government funding agencies including DBT, BARC - BRNS, AICTE, CSIR, SRISTI-BIRAC, UGC and University of Mumbai.

In addition, the department has successfully completed projects sponsored by industry including German Remedies, Marico, Zandu pharmaceutical works, Charak Pharma, Anazeal analyticals and Omniactive Health Technologies. The department has also been engaged in guiding MD students of Ayurved faculty regarding the formulations. Many such funded projects also have been completed.

Medicinal plant garden

The Department has developed a lush, well-maintained medicinal plant garden with almost 40 herbs of medicinal value. The adjunct literature of the planted medicinal herbs of the garden and Pharmacognosy museum has also been maintained and updated by the department.



DEPARTMENT OF PHARMACEUTICAL ANALYSIS

Faculty:

Krishnapriya Mohanraj, Ph.D. (Tech), Professor &
I/C Principal

(krishnapriya.mohanraj@bcp.edu.in)

Vaishali A. Shirsat, Ph.D. (Tech), Associate Professor

I/C Head of Department (vaishali.shirsat@bcp.edu.in)

Dipti Gatne, Ph.D., Associate Professor (dipti.gatne@bcp.edu.in)

Sagar Patel, Ph.D., Assistant Professor (sagar.patel@bcp.edu.in)



Research guides for M. Pharm. (Pharmaceutical Analysis) from other departments:

Krishna Iyer, Ph.D., Professor (krishna.iyer@bcp.edu.in)

Premlata Ambre, Ph.D., Associate Professor, Vice Principal (Administration & Strategy) (premlata.ambre@bcp.edu.in)

Alka Mukne, Ph.D., Assistant Professor (alka.mukne@bcp.edu.in)

Established in 2012, the Department of Pharmaceutical Analysis brings another dimension to specialized research arena at Bombay College of Pharmacy. The department is actively involved in training students at undergraduate and postgraduate levels. The department offers Master of Pharmacy Course in Pharmaceutical Analysis which is approved by the All India Council of Technical Education, Directorate of Technical Education, Maharashtra State and the University of Mumbai for an intake of 15 students per year. The Department has state-of-the-art laboratories, supported by good infrastructure and well-trained faculty.

Distinguished mentors of department:

The department is privileged to have following distinguished mentors who help and guide the department in its various activities including curriculum development, research and resource mobilization.

- Dr. A. J. Vaidya, Director, Analytical Solutions
- Dr. Manish Gangrade, Vice President, Analytical R&D & Regulatory Affairs (API), Cipla Ltd.
- Mr. V. U. Kshirsagar, Director & CEO, TRAC Pharma Consulting



Some Therapeutic areas of interest:

Some of our research expertise:

- Analytical and Bio-analytical method development and validation
- Spectrophotometric multi-component analysis
- HPLC and HPTLC analysis
- Chiral chromatography
- Stability indicating methods, Impurity profiling
- Metabolism and Pharmacokinetic studies
- Herbal and Phytochemical analysis, Drug-herb interaction studies
- Bioactivity guided fractionation of herbal extracts
- In silico analysis and Computer-aided Drug Discovery
- Bioassays, High throughput assay method development
- Structural elucidation assignments
- Polymer synthesis and their evaluation
- Antimicrobial: Anti-bacterial, Anti-fungal, Anti-HIV
- Anti-platelet
- Anti-malarial
- Angiogenesis
- Chemistry of fluorinated Drugs
- Anti Infective Drug Design
- Chemistry of moisture sensitive reaction
- Continuous flow chemistry
- Online reaction monitoring



Facilities available in the department include:

- Shimadzu HPLC with dual wavelength UV detector
- Jasco HPLC with UV detector
- Jasco HPLC with PDA and fluorescence detector
- Jasco UV-visible Spectrophotometer
- CAMAG HPTLC
- Gas Chromatography
- FTIR
- Rotary Evaporator
- Molecular Modeling Facility
- Solid Phase Extractor
- Low Temperature Synthesizer
- Nitrogen Evaporator
- Microbiological testing including resazurin microtitre assay (REMA)



Funding, Collaborations and Technology transfer:

The departmental faculty received substantial **funding from government agencies** namely All India Council of Technical Education (AICTE), University Grants Commission (UGC), Department of Biotechnology (DBT), Department of Science & Technology (DST), National Medicinal Plants Board, Department of AYUSH and University of Mumbai for research projects and travel.

In 2017, **Department of Science and Technology (DST)** sanctioned grant of **Rs. 5.87 crores** for establishment of a **National Facility for Research and Training in Integrated Analytical Strategies for Discovery, Development and Testing of Drugs, Pharmaceuticals and Nutraceuticals** under the Drugs and Pharmaceutical Research Program. The facility includes sophisticated high end analytical instruments viz. **LC-MS-MS, ICP-MS, and HPTLC-MS**.

The faculty collaborates with various pharmaceutical industries and academic institutes for infrastructural support, research, consultancy assignments and technology transfer -

- | | | |
|---|--|--|
| • Aarti Healthcare | • Aventis Pharma | • Ambernath Organics |
| • GlaxoSmithKline Pharma Ltd | • Analytical Solutions | • Sandu Pharmaceuticals Ltd |
| • Shogun Organics | • S.G. Pharma | • Nerlikar Hospital |
| • Unichem | • Loba Chemie | • Schrödinger |
| • T. N. Medical College and
B.Y.L. Nair Hospital, Mumbai | • School of Science,
NMIMS University | • School of Pharmacy,
Kingston University, UK |

The department conducts “Technical development programs” for industry personnel on -

- Analytical skills development
- Chromatographic techniques (Fundamentals, TLC, GC, HPLC, UHPLC)
- Spectroscopic techniques (UV, IR, NMR-1H, 13C, 2D NMR)
- Mass spectrometric and hyphenated techniques (LC MS/MS, GC MS/MS, HPTLC MS, ICP MS)



AMRF

AMRUT MODY RESEARCH FUND

Amrut Mody Research Fund (AMRF) was created out of a donation from Unichem Laboratories Ltd by Late Shri A.V. Mody to form the corpus of Amrut Mody Research Fund. The main objective of the Amrut Mody Research Fund is to recognize and encourage research carried out in the field of pharmaceutical and allied sciences in the Bombay College of Pharmacy (BCP) and such other pharmaceutical institutions in India.

Late Shri Amrut V. Mody was a visionary industrialist who believed in good health as a basic human need. He was committed to providing medicines, especially to the economically backward sections of the society. In this endeavor he founded the Unichem Laboratory, one of the few earlier domestic pharmaceutical industries in 1944.



He was also committed to quality professional education and research and was instrumental, along with others in establishing and supporting the BCP. The College was to provide trained man power needed for the pharmaceutical industry and the profession. In this pursuit he established Amrut Mody Research Fund in 1972 at BCP to support research and development activities in pharmaceutical and allied disciplines. Service to society always played an important part in Shri Amrut Mody's life. In recognition of his services Shri Amrut Mody was awarded the Padmabhushan in 1972 by the President of India.

The aims and objectives of the Amrut Mody Research Fund in addition to those mentioned above are:

- To sponsor doctoral and advanced research in pharmaceutical and allied sciences in the form of scholarships and give grants to the faculty to support the research work of scholars of the BCP.
- To provide/support grants for purchase and maintenance of equipments, books and journals and for creation of such other research facilities to foster research and a research environment in the BCP.
- To promote and encourage scholarly activities of the faculty and scholars of the BCP by providing grants for writing scientific books, monographs, review articles, etc.
- To provide partial travel grants/registration fees to attend and present research findings of the faculty and doctoral students of the BCP at international conferences/seminars, etc once in three years.
- To hold seminars, symposia, conferences and exhibitions for promoting research in pharmaceutical and allied sciences in BCP.
- To arrange lectures or lecture series by inviting eminent scientists and professionals from academia and industry from time to time during each academic year. Amrut Mody Research Fund shall support the honorarium, local travel and such other expenses for the conduct of such activities.
- To carry out all such activities as are incidental or conducive to the attainment of the above objectives or any one of them.

The Amrut Mody Research Fund Distinguished Researcher Award was conferred to Dr. M.S. Nagarsenkar in 2012 and Dr. M. N. Saraf in 2015.

At the occasion of the concluding ceremony of the Centennial Birth Anniversary of Padmabhushan Late Shri. Amrut Vithaldas Mody, his bust was unveiled on the foundation day of BCP i.e 28th May 2015.

Some of eminent scientists and professionals from academia and industry who delivered lectures at Bombay College of Pharmacy in recent past:

- Dr. Aditya Das, Consultant at USA & Associated with Cipla
- Dr. Ajaz Hussain, Inside advance & solution LLC
- Dr. Aparna Khanna, Dean, School of Science, NMIMS
- Dr. Archana Krishnan
- Dr. Aruna Khanolkar, Team leader Qbd IPD, Cipla
- Dr. Abhijeet Date, Assistant Prof. Dept. of Pharmaceutical Sciences, The Daniel K. Inouye College of Pharmacy, USA
- Ms. Almas Sayed, PV-SME at Tata Consultancy Pvt. Ltd.
- Dr. Anil Wani, Foundation for innovation & technology transfer, IIT, Delhi
- Dr. Bettine Boltres, Product Manager Pharmaceutical Tubing SCHOTT AG, Germany
- Chris Freeman, Ametek Brookfield



RSBCP THE RESEARCH SOCIETY OF BOMBAY COLLEGE OF PHARMACY

The Research Society of Bombay College of Pharmacy (RSBCP):

- RSBCP is a scientific society of pharmacy and related profession established in the year 1981 with one of the mandates of promoting and strengthening the pharmacy profession through research collaborations, management & execution of such research collaborations in association with the Bombay College of Pharmacy (BCP) and its faculty members and students.
- RSBCP is recognized by Department of Scientific and Industrial Research (DSIR)



AIMS AND OBJECTIVES OF THE RSBCP:

- To promote, organize, sponsor, establish, conduct research and encourage advancement of scientific knowledge in pharmaceutical and allied sciences in the BCP
- To enhance the quality and efficacy of research outcome and to develop innovation culture in the BCP
- To finance research projects by providing grants for research and supporting infrastructure, instruments and their maintenance
- To endow research fellowships to support and recognize outstanding contributions of individuals and encourage research scholars to pursue studies & research
- To coordinate and manage industrial research collaborations in the BCP
- To assist the teaching and non-teaching staff of the BCP to develop professional skills.

SALIENT FEATURES OF THE RSBCP:

INDUSTRIAL RESEARCH COLLABORATIONS, PROJECTS & SERVICES

- The RSBCP manages and coordinates number of industrial research collaborations and industrial projects for pharmaceutical and related industries.
- The research projects are executed in the BCP laboratories by the faculty and their student team.
- The main benefit for industry from these academic research collaborations is the access to the research results and innovative methodologies at reduced cost. It is of mutual benefit that Industries offer industrially relevant research problems of their interest to BCP and the faculty and students of the BCP provide the methodology and expertise to industry.
- The RSBCP also caters to industries by providing 'pay as you use' equipment and instrument facilities (e.g., Particle size analyzer, Zeta potential determination, HPLC etc).

List of industries for whom research projects have recently been undertaken and consultancy/ services been provided,

• Inventia Healthcare • Panacea Biotech Ltd. • Glenmark • Abbott Laboratories • Marico
• OmniActive Health Technologies • IPCA • Zytex • Enem Nostrum • Shreya Lifesciences • Cipla • GlaxoSmithKline
• Ambernath Organics • Sandu Pharmaceuticals • Bristol Myers Squibb • Getz Pharma Research • Bharat Serum and Vaccines • Evonik Degussa India • Neon Labs • Piramal Healthcare • Bajaj Healthcare • Naprod Life Sciences
• USV • Vaidya Patankar Pharmacy • Nerlikar Hospital • Anazeal Analyticals & Research • Gattefosse India • JMB Pharma • Famy Care • Piramal Life Science • Solumics Plantacid
Herbaceuticals • Franco-Indian Pharmaceuticals • Cymbiotics Biopharma • Mank Industries • Syngene International • Lamar Group of companies
• Ayurchem.



Technology Transfer:

- Technology developed through research at the BCP is made available to industries for further development and commercialization. One recent technology transfer to M/s Saife Vetmed Pvt Ltd was for a novel veterinary formulation for prevention and treatment of bovine mastitis. This technology has been developed in Bombay College of Pharmacy (BCP), in collaboration with Bombay Veterinary College (BVC), Mumbai.
- Another technology transfer to LOBA Chemie Private Ltd. has been done for the synthesis of chiral selector (as mobile phase additive) in enantiomeric separation of several Chiral Active Pharmaceutical Ingredients (APIs), by Reverse Phase High Performance Liquid Chromatography (RP-HPLC) using non-chiral columns. The chiral selector had to be imported from Sigma Aldrich. The BCP team developed a cost effective indigenous method for synthesis of the chiral selector with around 150% reduction in cost. The synthesized chiral selector showed better performance for enantiomeric separation than the commercial imported product.

Research Projects in Collaboration with Foreign Industries:

- Spring Bank Pharmaceuticals, USA for Expressions, Purification and X-ray structure determination of Plasmid RIG-1
- BASF, Germany for Assessment and development of computational methods for predicting which aminoacids in a target protein binding-site are most likely to mutate in order to generate resistance against specific crop protection agents.
- Bristol Myers Squibb Company, NJ, USA for project on design of novel delivery systems, grant received US dollars 5000/- .
- Gattefosse India on exploring role of Gelucires in bioavailability enhancement. The project included formulating tablets containing a drug from BCS class 2 and Gelucires by melt granulation, in-vitro characterisation, scale up and kinetic evaluation in healthy human volunteers. Total grant received at BCP Rs 150 lakhs.
- Bristol Myer Squibbs, USA through BMS-Biocon -Research Centre to support Ph.D fellowship for project work related to Drug Metabolism.

Infrastructural Development:

- RSBCP provides financial support for infrastructural development necessary for research at BCP, e.g., support for purchase of instruments and accessories and development of laboratories.
- RSBCP welcomes industry sponsorship of laboratories for renovation, upgradation and instrument purchase. Laboratories can also be named to recognize the contribution of the sponsoring industry.





ACADEMY FOR CLINICAL EXCELLENCE

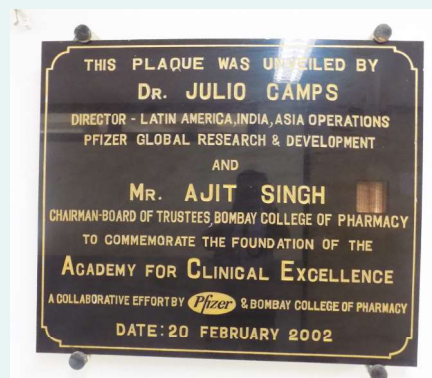
Academy for Clinical Excellence

Key Personnel :

Ms. Uma K. Mhatre, Counsellor cum Relationship Manager
(indrani@aceindia.org)

About ACE:

The Academy for Clinical Excellence (ACE) is the pioneering clinical research training institute in India established in February, 2002. ACE is an initiative signed jointly by Pfizer alongwith Suven Life Sciences, Bombay college of pharmacy and Indian Pharmaceutical Association Maharashtra State Branch. The academy is located in the Bombay College of Pharmacy campus. The Academy is a one-stop-shop for the training needs of all clinical research professionals.



Members of Governing Council :

Mentor

Dr. Arun Nanivadekar,
Consultant

Chairman

Dr. Anand Shedge, Vice President,
Indian Pharmaceutical Association-
Maharashtra State Branch

Members

Mr. Venkat Jasti

Dr. Chandrashekhhar Potkar

Dr. Padmakar Pandit

Dr. Chitra Lele

Ms. Swapnali Raut

Mr. Moin Don



The ACE Advantage:

- **Weekend Programs** - For students pursuing further studies and working professionals
- **Curriculum** - Designed by industry experts from Pfizer Ltd., ClinInvent Research, Lambda Therapeutic Research Pvt. Ltd., Novartis India Ltd., Quintiles Spectral, Ranbaxy Research Laboratories, SIRO Clinpharm Pvt. Ltd., Tata Memorial Hospital, KEM Hospital and Wockhardt Ltd.
- **Faculty** - Eminent persons from the industry and academia
- **Quality of course** - Quality of teaching maintained by strict internal checks
- **Placement** - Placement assistance for students.
- **Facility** - Special classes for soft skills and preparation for interview.



Courses offered

ACE curriculum is the first formal sketch of training in the CR field to meet the global standards and fulfil the needs of the CR activities in India.

The following are the courses offered by ACE

1. Advanced Diploma in Clinical Research(ADCR) (8 Months)

This program provides comprehensive training across the entire clinical trials process from the clinical study site to the sponsor or monitor. This program also provides hands on training for relevant software for Data Management module.

The curriculum is:

- | | |
|--------------------------------------|--------------------------------------|
| 1. Introduction to Clinical Research | 2. Ethics in Clinical Research |
| 3. Regulations in Clinical Research | 4. Clinical Research Methodology |
| 5. Clinical Research Management | 6. Biostatistics and Data Management |

2. Diploma in Pharmacovigilance (DPV) (6 Months)

The objective of the course is to enable participants to understand issues surrounding the manifestations and consequences of adverse drug effects (ADEs) and the risks and benefits of drug used in humans including. The regulatory perspectives of Pharmacovigilance are also the important part of the course.

The curriculum is:

- | | |
|---------------------------------|------------------------------|
| 1. Introduction to PV | 2. PV operations & Processes |
| 3. Safety Database | 4. Pharmacoepidemiology |
| 5. Aggregate Reports | 6. Project Management |
| 7. PV Organization & Management | 8. Allied PV Topics |

- **Eligibility for admission:** Final year Graduating, Graduates and Post Graduates in Life Sciences and Medicine with 50 % aggregate marks
- **Placement:** 100% placement assistance with career opportunities as CRAs, Investigators, Regulatory Managers, Auditors, Data Managers, Medical Writers, QA managers, Drug Safety Officer Etc In top KPO/BPO like TCS, Cognizant, Sciformix, hospitals like Kokilaben Hospital, Tata Hospital, CROs like ICON, SIRO and pharma companies like BI, , SunPharma, Sanofi etc.

3. Customized Certificate Courses (Specially Designed for Corporate)

Continuing the tradition of training, Academy for Clinical Excellence, has conducted more than 70 in-house and customized certificate courses.

ACE offers following Certificate Courses:

- Independent Ethics Committees (IECs)- Composition and Function
- GCP for Investigators
- Fundamentals of Clinical Research and GCP

ACE has successfully done certificate courses for companies like:

- Department of Science and Technology, New Delhi
- GVK Bio • Watson Pharma • Sitec Labs, IPCA Labs, Hetero Labs Hyd.
- Alkem Laboratories • Wyeth • Ranbaxy • Abbott
- KEM, Pune • Ramdas Hospital Pune





National Facility for Research and Training

We provide analytical solutions for discovery, development and testing of drugs, pharmaceuticals and nutraceuticals with state-of-the-art analytical instruments like LC-MS/MS, HPTLC, ICP-MS and modern dissolution apparatus. We are dedicated to provide quality testing and hands-on training, and conduct tailor-made technical development programs, and seminars for industry and academicians.

Objectives

- Train the trainer
- Technical development programs
- Hands-on-training
- Seminars and Deminars
- Research Projects

Testing

- Drugs
- Pharmaceuticals
- Nutraceuticals

Training

- A comprehensive approach to training, covering all methods and techniques through theory as well as demonstration and hands-on-training

Our Expertise

- Impurity Profiling – elemental, organic and chiral
- Bioactivity guided fractionation of natural products
- Bioanalysis and Therapeutic Drug Monitoring
- Structural Elucidation
- Pharmacokinetics and Drug Metabolism
- Analytical Method development and validation
- Herbal and nutraceutical analysis
- Allied areas

State of the art instruments

LC-MS/MS (QTRAP)

Specification

- HPLC model no: Agilent 1260 II HPLC 600Bar
- Triple Quadrupole with ion-Trap Mass spectrometer: SCIEX 5500 QTRAP

Applications

- Bioanalysis and Therapeutic drug monitoring
- Impurity Profiling
- Pharmacokinetics and Drug metabolism
- Structure elucidation of small molecules including impurities



HPTLC and HPTLC with MS

Specification

- Autosampler
- UV cabinet
- Automated Developing chamber
- Automated multiple development gradient
- Visualizer
- MS Interface: HPTLC/ TLC - MS interface
- Derivatization chamber

Applications

- Study of natural products
- Separation & screening of complex mixtures
- Analysis of drugs, vitamins and other products
- Analysis of marker compounds
- Nutraceutical Analysis



ICP-MS (iCAP RQ)

Specification

- Thermo iCAP RQ
- Dynamic Range: > 9 orders of magnitude (< 1 - > 1·10⁹ cps)
- Resolution: User Definable
- Hertz: 2 MHz

Applications

- Detection of elements
- Quantitative elemental composition
- Trace analysis of heavy metal impurities



Dissolution apparatus

Specification

- USP 1 to 7 dissolution apparatus by Sotax

Applications

- Dissolution studies for IR and SR
- Dissolution studies for medical devices
- Dissolution studies for NDDS
- Dissolution studies for all types of transdermal formulations



HPLC and UHPLC

Specification

- HPLC model no: Agilent 1260 II HPLC 400Bar
- UHPLC model no: Agilent 1290 II infinity 1300Bar

Applications

- Analytical method development for API and formulations
- Impurity profiling and stability studies
- Bioanalysis
- Pharmacokinetics and metabolism studies



Dr. M.K. Rangnekar Memorial Testing Laboratory was founded on 2nd July 1988 by The Indian Pharmaceutical Association-Maharashtra State Branch's Bombay College of Pharmacy in the memory of Dr. M.K. Rangnekar, the first commissioner of FDA Maharashtra and past President of IPA-MSB. This is an FDA approved public testing laboratory complying as per new schedule GLP L1. The laboratory follows Good Laboratory Practices as specified by the Regulatory authorities from time to time.

Infrastructure

- Trained qualified and competent technical staff
- 21 CFR compliant software for documentation as well as efficient, reliable and accurate reporting
- Work environment to provide high degree of co-ordination
- Specialization in latest analytical techniques
- Excellent Standard of service to customers
- EPABX system, CCTV cameras and biometric system to maintain laboratory discipline, secrecy and confidentiality



Categories of Products Tested

- Analysis of APIs, Excipients and Pharmaceutical Formulations as per IP/BP/USP/EP or In-house Standards
- Analysis of Cosmetics, Drug Intermediates, etc.



Services Provided

- Analytical method development
- Analytical method validation studies

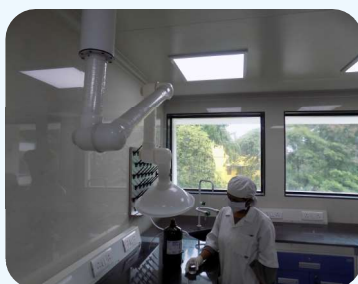
Analysis using the following Instruments

- HPLC
- GC
- FTIR
- UV/Visible Spectrophotometer
- Dissolution apparatus
- Potentiometer titrator
- Karl Fischer apparatus for moisture content
- Brookfield's viscometer
- Liquid particulate counter
- Digital polarimeter
- Raw Material analysis
- Chemical analysis
- Particle size analysis (Microscopically)



Microbial Analysis

- Sterility Testing
- Microbiological assay by cup-plate, cylinder-plate and turbidometric methods
- Effectiveness of Antimicrobial Preservatives
- Microbial Enumeration Test
- Test for specified micro organisms
- Rideal Walker Coefficient test for disinfectants
- Microbial kill rate study
- Minimum Inhibitory Concentration
- Anti microbial activity
- Water analysis
- Bacterial Endotoxins test



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