



DEPARTMENT OF **CHEMISTRY**

ABOUT THE DEPARTMENT



PROFESSOR R. V. JAYARAM

M.Sc., Ph.D., F. M. A. Sc.

Professor of Physical Chemistry and
Head of Department

Email: rv.jayaram@ictmumbai.edu.in

Phone: 91-2222-33612601

It is my pleasure to present the Annual Report (2016 – 2017) of the Department of Chemistry, Institute of Chemical Technology. The Department continues to grow. To the M. Sc. programme of the Department, 20 admissions were made. Six research scholars successfully completed their doctoral work and awarded the Ph. D. Degree. Presently 52 doctoral candidates are enrolled in the Department.

The research output of the Department continues to be creditable. The faculty members published 66 peer-reviewed research papers in reputed international journals, in addition to contributing to book chapters and patents. Both the faculty members and

students made a number of oral and poster presentations in conferences and workshops at both national and international platforms, thus benefitting from the scientific interactions.

The performance of the M.Sc. and PhD students in curricular and extra-curricular activities was commendable and brought laurels to the Department. It is a matter of pride that many of the M. Sc and PhD students of the Department have been selected by reputed universities and Institutions from India and abroad for further studies and for suitable employment.

The Department continues with the commitment in training the staff and research students of ICT with the support of the TEQIP programme and various endowment funds. “Rasayanam”, the inter-collegiate annual programme and Chem. Careers (an event

organised for the benefit of the college students of the city and supported by RSC), were met with over whelming response. This was organised on 12th and 13th January 2017. The Department also arranged an annual get together in the month of May in which a warm farewell was given to the outgoing students of the year. The Department also organised various invited lectures by experts for the benefit of the students of the Institute.

We are thankful to all the faculty members, support staff, visiting faculty and the students of the Department for their commitment and contribution. in all the activities. With all this support, Department of Chemistry at ICT will continue to thrive to excel in teaching and research that would lead to the betterment of society and mankind.



PROFESSOR R. V. JAYARAM

M.Sc., Ph.D., F. M. A. Sc.

Professor of Physical Chemistry and
Head of Department

ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
B. Chem. Engg	II	Physical and Analytical Chemistry (lab course)
B.Tech	I	Physical and Analytical Chemistry (lab course)
B.Pharm	I	Organic Chemistry (lab course)

Postgraduate

Class	Semester	Course
MSc. Chemistry	I	Chemical kinetics and phase equilibria
		Physical Chemistry Lab -I
	II	Quantum mechanics, Physical chemistry lab II
	III	Solid state chemistry
	IV	Catalysis
M. Tech. Green Tech.	II	Catalysis II

RESEARCH INTERESTS

- Heterogeneous catalysis
- Green Chemistry
- Photocatalysis
- Functional polymers
- Adsorption techniques for removal of water pollutants
- Enzyme catalysis

RESEARCH OUTPUT

A) Current research students

M. Tech.- 02

M.Sc. (Chemistry)- 02

Ph. D.- 13

PDF- 01

UG- 03

B) Research Publications

(from 1st July 2016 to 30th June 2017)- 04

C) Sponsored Projects

(from 1st July 2016 to 30th June 2017)- 02

PROFESSIONAL ACTIVITIES:

- Faculty Member, NIUS Programme, HBCSE.
- Member, Board of Examiners, Indian National Chemistry Olympiad (INChO)
- Fellow of Maharashtra Academy of Science
- Resource person, Orientation-cum-selection Camp for selecting Indian Team for International Chemistry Olympiad.
- Member, Scientific committee, 48th International Chemistry Olympiad, July

2016(Tibilis, Georgia)

PROFESSIONAL ACTIVITIES:

- Faculty Member, NIUS Programme, HBCSE.
- Member, Board of Examiners, Indian National Chemistry Olympiad (INChO)
- Fellow of Maharashtra Academy of Science
- Resource person, Orientation-cum-selection Camp for selecting Indian Team for International Chemistry Olympiad.
- Member, Scientific committee, 48th International Chemistry Olympiad, July 2016(Tibilis, Georgia)

IN-HOUSE RESPONSIBILITIES

- Coordinator- Green Technology programmes
- Warden- Hostel No. 2
- Coordinator – UGC –SAP (DRS-I), Department of Chemistry
- Chairperson, Research Committee, Green Technology
- Chairperson, Research Committee, Chemistry
- Member, Examination committee
- Member secretary, Faculty Common Room
- Member – Exam Committee
- Member – UGPC, PGPC



PROFESSOR BHALCHANDRA M. BHANAGE

M.Sc., PhD (Sci.)

Professor of Industrial & Engg. Chemistry &

Dean (Infrastructure and Campus Development)

Department of Chemistry

Email: bm.bhanage@gmail.com

Phone: 91-22- 33612603

ACADEMIC COURSES TAUGHT UNDERGRADUATE

Class	Semester	Course
S.Y.B.Tech	III	Green Chemistry

POSTGRADUATE

Class	Semester	Course
M.Sc.	III	Organometallic Chemistry
M. Tech Green Tech.	I	Industrial Catalysis - I

RESEARCH INTERESTS

- Homogeneous catalysis, Reaction kinetics and mechanism
- Preparation and Characterization of organometallic complexes.
- Catalyst-product separation techniques in homogeneous catalysis such as biphasic catalysis, supported liquid phase catalysis.
- Ultrasound assisted organic reactions and catalysis.
- C-C, C-N coupling reactions for organic synthesis.
- Microwave assisted organic reactions and catalysis.
- Preparation and application of ionic liquids for organic synthesis.
- Catalysis and reactions in supercritical carbon dioxide.
- Carbon dioxide fixation into valuable chemicals
- Carbon monoxide fixation into valuable chemicals.
- Hydroformylation for synthesis of fine chemicals.
- Polycarbonates synthesis via organometallic complexes.
- Heterogeneous catalysis.
- Bio-catalysis- Mainly study of the behavior of various enzyme in organic solvents and neoteric solvents like ionic liquids, supercritical carbon dioxide for organic synthesis and enzyme immobilization.
- Synthesis of nano-materials

- & exploration of the nanomaterials synthesized as catalysts for organic synthesis.
- Green chemistry- Development of environmentally benign synthetic procedures for organic synthesis.
 - Hydrogenation reactions for organic synthesis.
 - Asymmetric catalysis for organic synthesis.

RESEARCH OUTPUT

A] Current research students

M. Tech. - 1
M.Sc. (By Research)- 0

M.Sc. (Chemistry)- 2
Ph. D.- 20
Others, if any- 1 RA/ 2 Summer Trainee /1 postdocs

B] Research Publications (from 1st July 2016 to 30th June 2017)- 39

C] Patents (from 1st July 2016 to 30th June 2017)- 4

D] Book Chapters (from 1st July 2016 to 30th June 2017)- 3

E] Sponsored Projects (from 1st July 2016 to 30th June 2017)- 2

PROFESSIONAL ACTIVITIES:

- Catalysis Science & Technology (Royal Society of Chemistry Journal)

- The Open Catalysis Journal (Bentham Publisher) since 2007
- The Open Acoustics Journal (Bentham Publisher) since 2008
- Science Magazine Patrika Language : Marathi (ISSN No. 0971-6912)

IN-HOUSE RESPONSIBILITIES

- Dean, Infrastructure and Campus Development



PROFESSOR SHRINIWAS D. SAMANT

M. Sc., Ph. D.
Professor of Organic Chemistry
Department of Chemistry
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ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
B. Chem. Engg.	II	Organic Chemistry (Theory)

Postgraduate

Class	Semester	Course
M.Sc. (Chemistry)	I	Organic Reaction Mechanism (Theory)
M.Sc. (Chemistry)	II	Stereochemistry (Theory)
M.Sc. (Chemistry)	III	Advanced Spectroscopy (Theory)
M.Sc. (Chemistry)	I	Organic chemistry laboratory
PhD	--	Research Methodology

RESEARCH INTERESTS

- Mechanistic organic chemistry
- Synthesis of biologically interesting compounds
- Organic sonochemistry
- Catalysis
- New methods of organic synthesis

RESEARCH OUTPUT

A] Current research students

M.Sc. (Chemistry)- 2
Ph. D.- 2

B] Research Publications

(from 1st July 2015 to 30th June 2016)- 2

PROFESSIONAL ACTIVITIES:

Activities outside ICT:

- Member, National Steering Committee, Science and

- Mathematics Olympiads
- Member, Academic Board, Ruia College (Autonomous)
- Member, Chemistry Research Board, The IIS University, Jaipur.
- Member, Advisory Committee, Star College, DBT, Ruia College, Mumbai.
- Member, Advisory Committee, Star College, DBT, Jhunjhunwala College
- Member, Advisory Committee, Skill Development Programmes, Ruia College
- Member, IQAC, Ruia College, Mumbai
- Member, Statutes Committee, Dr. Babasaheb Ambedkar Technological University, Lonere, Maharashtra

- Member, Association of Chemistry Teachers
- Member, Catalysis Society of India
- Member, Society of Materials Chemists
- Member, Asiatic Society, Mumbai

Office bearers of professional bodies:

- President, Association of Chemistry Teachers

IN-HOUSE RESPONSIBILITIES

- Wardenship /
- Member, Board of Management, ICT, Mumbai
- Member, Research Committee, Department of Chemistry, ICT, Mumbai.



PROFESSOR JAYASHREE MILIND NAGARKAR

M. Sc., Ph. D.
Professor of Chemistry
Department of Chemistry
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ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
F.Y.B. Tech.	I	Analytical Chemistry practical
F.Y.B. Chem. Engg.	II	Analytical Chemistry practical

Postgraduate

Class	Semester	Course
M.Sc.(Chem.)	I	Kinetics and Phase Equilibria
M.Sc.(Chem.)	II	Advanced Thermodynamics and Electrochemistry
M.Sc.(Chem.)	IV	Electrochemistry

RESEARCH INTERESTS

- Homogeneous catalysis
- C-C, C-N coupling reactions for organic synthesis
- Heterogeneous Catalysis
- Synthesis and Exploration of Nanomaterials synthesized as catalysts for organic synthesis
- Green chemistry development of environmentally benign synthetic procedures for organic synthesis
- Emulsifications of Vegetable oils

RESEARCH OUTPUT

A] Current research

students

M.Sc. (Chemistry)- 02

Ph. D.- 07

B] Research Publications

(from 1st July 2016 to 30th June 2017)- 06

PROFESSIONAL ACTIVITIES:

- Life member, Indian Society of surface Science & Technology
- Life member, Indian Women Scientist Association
- Life Member, Catalyst Society of India
- Life Member, Society of Advancement of

Electrochemical Science & Technology

- Member, Board of Studies , University of Goa

IN-HOUSE

RESPONSIBILITIES

- Incharge, Art Club TA
- Incharge, Departmental Colloquium, Department of Chemistry, ICT
- Member, PG Admissions Committee
- Member, Woman Cell, ICT
- Member, Departmental Safety Committee
- Co-ordinator Safety Workshop programme of the Institute.



Dr. ANANT R. KAPDI

M.Sc. Ph.D.

UGC-FRP Assistant Professor

Department of Chemistry

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ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
F.Y. B.Chem. Engg	I	Organic Chemistry
F. Y. B. Chem. Engg.	I	Organic Chemistry Practicals
F. Y. B. Chem. Engg.	I	Organic Chemistry
F. Y. B. Chem. Engg.	I	Organic Chemistry Practicals

Postgraduate

Class	Semester	Course
M. Sc. Chemistry	I	Heterocyclic Chemistry
M. Sc. Chemistry	III	Analytical Practicals
M. Sc. Chemistry	IV	Natural Products

RESEARCH INTERESTS

- Homogeneous catalysis using palladium and nickel based complexes.
- Heterogenization of the complexes on solid support\
- C-H bond functionalization
- Green Technology approaches for synthesis
- Microwave assisted organic synthesis
- Nucleoside Modification and Applications

RESEARCH OUTPUT

A] Current research students

M.Sc. (Chemistry)- 2
Ph. D.- 11

B] Research Publications

(from 1st July 2016 to 30th June 2017)- 2

C] **Book Chapters** (from 1st July 2016 to 30th June 2017)- 3

D] **Sponsored Projects** (from 1st July 2015 to 30th June 2016)
5 Government-funded
4 Private sponsors

a) Secretary of Faculty forum
ICT Mumbai

- b) Convener of Freshers events for the year 2016-17.
- c) Committee member for Purchase Committee, ICT Mumbai
- d) Committee member for Institutional Handbook Committee: Compilation, Designing, Detailing and Final Compilation handled.
- e) Committee member for safety committee for Department of Chemistry 2016-17.



Dr. VIJAY KUMAR A.

M.Sc, PhD

Assistant Professor in Organic Chemistry

Department of Chemistry

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vijayakki@gmail.com

Phone: +91-2233612614

ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
FY B. Chem. Engg.	I	Organic Chemistry
FY B. Chem. Engg.	I	Organic Chemistry Laboratory
FY B. Tech.	II	Organic Chemistry
FY B. Tech	II	Organic Chemistry Laboratory

Postgraduate

Class	Semester	Course
MSc	III	Organic Synthesis
MSc	III	Organic Chemistry Laboratory
MSc	IV	Bioorganic Chemistry

RESEARCH INTERESTS

- New synthetic methodologies development
- Total Synthesis of Natural Products & drugs
- Catalysis for Organic Synthesis
- Biomimetic Organic Synthesis

RESEARCH OUTPUT

A] Current research students

M.Sc. (Chemistry)- 02
Ph. D.- 04

B] Research Publications

(from 1st July 2016 to 30th June 2017)- 01

IN-HOUSE RESPONSIBILITIES

- Department TEQIP co-ordinator
- Instrumentation room in charge
- Member: Mentorship Program 2016-17



Dr. KAUSTUBH JOSHI

M.Sc., Ph.D.

DST Ramanujan Faculty

Department of Chemistry

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Phone: 022 33612614

ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
B. Chem. Engg	I	Physical Chemistry (Theory)
B. Pharm.	II	Physical Pharmacy (Theory)

Postgraduate

M. Sc. (Chemistry)	II	Chemical Engineering Component (Laboratory)
	III	Computational Chemistry (Laboratory)
	III	Computational Chemistry (Theory)

RESEARCH INTERESTS

- Cycloaddition reactions
- Organic Reaction mechanism
- Bone Health
- Python based GUI development

- NNRT based Anti-HIV drug designing
- Targets for Neurodegenerative diseases
- Silicon Chemistry

RESEARCH OUTPUT

A] Current research students

M.Sc. (Chemistry)- 01
Ph. D.- 02

B] Research Publications

(from 1st July 2016 to 30th June 2017)- 01



Dr. SHRAEDDHA TIWARI

M.Sc., Ph.D.

Assistant Professor in Inorganic and Physical Chemistry

Department of Chemistry

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Phone: 022-33612618

ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
F.Y. B.Tech.	I	Physical Chemistry – 1
F. Y. B. Tech.	I	Physical and Analytical Chemistry Practicals
F. Y. B. Tech.	II	Physical Chemistry – II
F. Y. B. Pharm.	II	Physical Chemistry and Physical Pharmacy

Postgraduate

Class	Semester	Course
M. Sc. Chemistry	I	Instrumental Methods of Analysis

RESEARCH INTERESTS

- Mechanistic investigation of organic reactions
- Effect of reaction media on the selectivity and reactivity
- “on water” chemistry
- Space and time-resolved study of reactions in confined media
- Vibrational spectroscopy and microspectroscopy
- Mechanistic studies of

asymmetric amplification

- Interfacial reactions

RESEARCH OUTPUT

A] Current research students

M.Sc. (Chemistry)- 02

Ph. D.- 04

Others, if any- 01

B] Research Publications

(from 1st July 2016 to 30th June 2017)- 01

C] Sponsored Projects (from 1st July 2016 to 30th June 2017)- 02

IN-HOUSE RESPONSIBILITIES

- Member, Student Diary Committee
- Member, Annual Report / ICT Diary/ Posters Committee
- Member, NBA / NAAC Documentation Committee



Dr. DIPANWITA DAS
M.Sc. Ph.D.
DST-INSPIRE Faculty
Department of Chemistry
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Phone: 91-22-33612616

ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
F. Y. B. Pharm	I	Inorganic Chemistry Theory
F.Y.B.Tech	I	Analytical Physical Chemistry Lab
F.Y.B.Pharm	II	Physical Pharmacy Lab

Postgraduate

Class	Semester	Course
M.Sc. Chemistry	I	Inorganic Chemistry Lab
M.Sc. Chemistry	II	Chemistry of Transition Elements, Theory

RESEARCH INTERESTS

- Catalytic oxygen reduction reaction by metal organic frameworks
- Molecular recognition and sensing
- Photochromic metal organic frameworks
- Inorganic photo physics and bio-sensing
- DNA binding and

photocleavage

RESEARCH OUTPUT

A] Current research students

M.Sc. (Chemistry)- 2
Ph. D.- 4
Others, if any- 1 (Project Assistant)

B] Research Publications

(from 1st July 2016 to 30th June

2017)- 2

C] Sponsored Projects (from 1st July 2016 to 30th June 2017)- 2

PROFESSIONAL ACTIVITIES:

- Member of Royal Society of Chemistry

**Dr. SANGHAMITRA CHATTERJEE***M.Sc., Ph.D*

DST INSPIRE Faculty

Department of Chemistry

Email: sk.chatterjee@ictmumbai.edu.in

Phone: 022-33611144

ACADEMIC COURSES TAUGHT**Undergraduate**

Class	Semester	Course
F.Y. B. Tech.	I	Analytical Chemistry (Theory)
F.Y. B. Tech.	I	Physical/Analytical Chemistry (Laboratory)
F.Y. B. Chem. Engg.	II	Analytical Chemistry (Theory)
F.Y. B. Chem. Engg.	II	Physical/Analytical Chemistry (Laboratory)

RESEARCH INTERESTS

- Organic Electrochemistry
- Biomedical Applications of Nanomaterial Modified Sensors
- Materials Science and Nanotechnology
- Electrochemical Sensing Techniques for

Clinical Diagnostics and Environmental Monitoring

- Development of Sensors for Biomolecules, Drugs and Doping Agents
- Biosensors and Arrays
- Electrochemical catalysis

RESEARCH OUTPUT**A] Current Research Students**M.Sc. (Chemistry- 02
Ph. D.- 03**B] Research Publications**

(from 1st July 2016 to 30th June 2017)- 01

C] Sponsored Projects (from 1st July 2016 to 30th June 2017)
01**Dr. P. M. MORE***MSc. PhD.*

Assistant Professor

Department of Chemistry

Email: pm.more@ictmumbai.

extension preferred- 91-22-33612605

ACADEMIC COURSES TAUGHT**Undergraduate**

Class	Semester	Course
B. Chem. Engg.	I	Analytical Chemistry Theory
B. Chem. Engg.	I	Physical and Analytical Chemistry Lab.

Postgraduate

Class	Semester	Course
MSc. (Chem)	I	Physical Chemistry Lab.

RESEARCH INTERESTS

- Environmental Catalysis,
- Complete oxidation of CO and volatile organic compounds into CO₂
- Selective oxidations of hydrocarbon/alcohol by heterogenous catalysis

- Development of method for sample analysis

1st July 2016 to 30th June 2017)- 02

RESEARCH OUTPUT

A] Current research students

M.Sc. (Chemistry)- 02

Ph. D.- 02

B] Sponsored Projects (from

IN-HOUSE

RESPONSIBILITIES

- Comitte member of Shri G.M.Abhyankar Students' Travel Assistance Award



Dr. S.G. DAWANDE

M. Sc., Ph.D

Assistant Professor

Department of Chemistry

Email: sg.dawande@ictmumbai.edu.in

Phone: 91-22-33611145

ACADEMIC COURSES TAUGHT

Undergraduate

Class	Semester	Course
F.Y. B. Pharm	I	Organic Chemistry-I
F.Y. B. Pharm.	I	Organic Chemistry Laboratory
F.Y. B. Pharm.	II	Organic Chemistry II
F.Y. B. Chem. Eng.	II	Organic Chemistry II
F.Y. B. Tech.	II	Organic Chemistry Laboratory

Postgraduate

Class	Semester	Course
M. Sc. (Chemistry)	I	Organic Chemistry Laboratory
M. Sc. (Chemistry)	II	Organic Chemistry Laboratory

RESEARCH INTERESTS

- Transition Metal catalysis
- Organocatalysis
- Natural Product Synthesis
- Green Chemistry

RESEARCH OUTPUT

A] Current research students

M.Sc. (Chemistry)- 01

Ph. D.- 01

Others, if any- 01

B] Research Publications

(from 1st July 2016 to 30th June 2017)- 01

C] Sponsored Projects (from

1st July 2016 to 30th June 2017)- 02

SUPPORT STAFF



Mr. P. S. Gaikwad
Lab Assistant



Mr. V. R. Haval
Lab Assistant



Mr. R. M. Mhatre
Lab Assistant



Mr. A. P. Patil
Lab Assistant



Mr. A. H. Awale
Lab Attendant



Mr. S. P. Chavan
Lab Attendant



Mr. S. B. Khapne
Lab Attendant



Mr. B. V. Tilve
Lab Attendant

SUPPORT STAFF - SUPER ANNUATION



Mr. S. B. Khapne
Mr. S. b. Khapane (Lab Attendant)
Organic Chemistry Laboratory
Date of Retirement - 30/11/2016
Date of Farewell by Department - 29/11/2016

VISITING FACULTY

Name	Affiliation	Course	Class/Semester
Prof. P. A. Sathe	Department of Chemistry, Ram Narayan Ruia Autonomus College, Mumbai-400019	Physical Chemistry-II	S Y B Tech. (Pharma) Semester- II
		Electrochemistry and Advance Thermodynamics	M Sc. Chemistry Semester- II
		Solid State Chemistry Molecular Symmetry & Group Theory	M Sc- Chemistry Semester – III
Dr. Lakshmy Ravishankar	Department of Chemistry, V.G.Vaze College, Mulund, Mumbai.	Radicals, Photochemistry & Pericyclic reactions	M Sc- Chemistry Semester – I
Dr. Mandal	Head, Materials Section Chemical Engineering Division Bhabha Atomic Research Centre Trombay, Mumbai, PIN: 400085	Fundamentals of Fluid Flow and Heat Transfer	M Sc- Chemistry Semester – II
		Material and Energy Balance	M Sc- Chemistry Semester – I
		Environment Engineering	M.Tech Green Tech Semester –II
Dr.Vishnu Ajaonkar	Retired Department of Chemistry, University of Mumbai	Quantum Chemistry	M Sc- Chemistry Semester – II
Dr. Hemant Khanolkar	Assistant Professor, Department of Applied Chemistry Fr.Conceicao Rodrigues College of Engineering, Bandstand, Bandra(West) Mumbai-400 050	Physical Pharmacy	F Y B. Pharm Semester –II
Prof. Gail Carneiro	Department of Chemistry, Sophia College	Aromatic and Heterocyclic Chemistry	B. Tech Semester III
Prof. M.A. Shenoy	Retired from Institute of Chemical Technology, Mumbai	Polymer Chemistry (Elective)	M Sc- Chemistry Semester - IV
Dr. Girija Sahasrabudhe	Ph.D. Materials Science and Chemistry	Nano Chemistry	M Sc- Chemistry Semester – III

Dr. Anirudh Shenvi	Technical Consultant and Visiting Faculty at Institute of Chemical Technology, Mumbai	Project Economy	M Sc- Chemistry Semester – IV
Dr. Mohmad Vasim Kasim Hanifa Sheikh	Department of Chemistry ,Ram Narayan Ruia Autonomus College, Mumbai-400019	Inorganic & Organometallic Chemistry	S.Y B.Pharm Semester –II
Ms. Aishwarya Mantravadi	M.Sc. (Specialisation in Physical Chemistry) from Ram Narayan Ruia Autonomus College, Mumbai-400019	Physical Chemistry Laboratory-II Practical	M Sc- Chemistry Semester – II

ENDOWMENT LECTURES

Speaker	Affiliation	Date	Topic
Prof. S. Natrajan	IISc Bangalore	8thDecember 2016	Designing Chromophores in the Solid State: The Role of Transition Elements
Prof. P. Selvam	IIT Madras	8thDecember 2016	Nanostructured Materials and Their Applications in Catalysis
Prof. M. Swaminathan	Annamalai University, Chidambaram, TN	2ndJuly 2016	Photocatalysis in Effluent Treatment
CMP Endowment			
Dr. Ram Mohan	Illinois Wesleyan University USA	27th June, 2017	Better Living through Green Chemistry: An Introduction to Toxic Molecules, Case Studies, Useful Chemicals from Renewable Resources
Prof. A.K. Tyagi	BARC, Mumbai	25th March 2017	Art of Synthesis of Materials
TEQIP / Guest Lecture			
Dr. Surendra Kulkarni	Christ University, Bangalore	17th February 2016	Alternate Energy Sources

SEMINARS / WORKSHOPS ORGANIZED BY THE DEPARTMENT

SECURITY PERSONNEL TRAINING WORKSHOP

The Department of Chemistry conducted a workshop to train the security personnel of ICT under the auspices of TEQIP – II. The workshop was conducted on five weekends during July to August 2016. The concluding session of the workshop was held on 3rd September 2016. The workshop was intended for all the security staff members in ICT. The main focus of the workshop was training the ICT security personnel in various areas such as squad drill, preliminary self-defence skills, basic fire-fighting skills and leadership skills. In order to achieve this goal, the workshop consisted of lectures, interactive sessions and hands-on training sessions.

A total of 25 members from the security staff had registered for the workshop. Lt. Rakesh Barai (Associated NCC Officer, Guru Nanak Khalsa College of

Arts, Science and Commerce) and his team of NCC cadets conducted a number of squad drill and self-defence sessions. Lt. Barai also conducted lectures as well as interactive sessions on personality development. Special mention must be made of Shri Vinod Mohite, who was in-charge of the self-defence training and Shri Sukhraj Singh Riad, who supervised the squad drill training. The fire-fighting sessions were conducted by Shri Sachin Khedekar (Chetana Foundation). Breakfast and lunch were provided to the participants.

At the end of the training, the participants were assessed through a written test. The participants were awarded with a certificate of participation based on their attendance record and satisfactory performance in the written examination at the concluding session. The

concluding session was chaired by Hon' Vice-Chancellor Prof. G. D. Yadav, who commended the efforts of the security staff to enhance their skills while maintaining the security standards of the Institute and the resource persons for their contribution. Other dignitaries present at the concluding session included Prof. S. S. Lele (Registrar), Prof. B. M. Bhanage (Dean, ICD), Prof. P. R. Vavia (Dean, AP) and Prof. R. V. Jayaram (Head, Department of Chemistry). Participants' feedback was taken during the concluding session, both verbatim and in the written form.

The feedback from the participants was very positive and encouraging. The participants also came up with proactive suggestions for improving the laboratory safety issues in the institute.



WORKSHOP ON LABORATORY SAFETY

Ensuring laboratory safety is an important aspect of research at the Institute of Chemical Technology. The Department of Chemistry conducted a two-day Workshop on Laboratory Safety for the PhD students with the aim of creating a general awareness about common laboratory safety issues. The workshop focused on sensitizing the students towards potential hazards in a chemical / biochemical laboratory and providing them with the technical know-how to prevent and manage potentially dangerous situations. The workshop included lectures and interactive sessions by various experts from the academia and industry in addition to first aid and fire-fighting demonstrations.

The workshop was organized under the auspices of Technical Education Quality Improvement Program – Phase II (TEQIP – II). The workshop was organized on the 1st and 2nd of September 2016, in the KV Auditorium and was coordinated by Prof. J. M. Nagarkar (Convenor) and Dr. Sudam Dawade (Co-Convenor). It was made open to the Ph.D students of the all the Departments of Institute of Chemical Technology. Admission to the workshop was through prior registration. The registration forms were made available to all the students electronically. As many as 124 students registered within the deadline and the registered participants were notified of the Workshop schedule in advance

through email. The participants were also provided with a manual on Laboratory Safety as a part of the registration kit, which was sponsored by TEQIP-II.

The inaugural session of the workshop was chaired by Prof. R. V. Jayaram (Head, Department of Chemistry, ICT) and the workshop was inaugurated by Prof. S. D. Samant (Department of Chemistry, ICT). Prof. Samant gave an overview of the safety and related issues during his inaugural address and emphasized the importance of the various topics scheduled for discussion in the next two days

The workshop began with a lecture on “Compatibility and storage of Chemicals” by Prof. Samant. Dr. Purna Goswami (General Engineering Department, ICT) discussed the importance of “Electrical Safety”. The workshop began with a lecture on “Personal Protective Equipments” by Prof. R. V. Jayaram (Department of Chemistry, ICT). The safety workshop lecture series again started after lunch break with lecture on “Toxicity” by Dr. Sasikumar Menon. This was followed by lecture of Shri. Vijay Bhujle (Intertek Industries and Visiting Faculty member, ICT) then delivered a talk on “Development of Safe Manufacturing Processes”. This was followed by a video demonstration “Safe Practices in R & D laboratory to achieve them” and the students actively participated in the interaction

session after the demonstration. Then demonstration session was organized on “First-aid in Lab Accidents” by Dr. Rupesh Gaikwad (M. D. College, Mumbai).

The second day of the workshop commenced with a valuable lecture on “Laboratory Safety” by our Hon. Vice-Chancellor Prof. G. D. Yadav. This was followed by a lecture on “Laboratory Waste Management” by Dr. J. M. Nagarkar (Department of Chemistry, ICT). The next lecture on “Handling High Pressures” by Prof. B. M. Bhanage (Department of Chemistry, ICT) was focused on the management of gas cylinders and laboratory systems using high pressure conditions. After this Dr. Sandip Kale (DBT-ICT Center) delivered a lecture on “Biosafety”. The final lecture of workshop was on the “fire hazards and fire-fighting aspects” was given by Shri Santosh Hule (Manager, HES, NOCIL). Which was followed by giving the hands-on training in the important skills of fire-fighting through a demonstration on the Futsal ground of ICT. The fire-fighting demonstrations were conducted by Shri Santosh Hule

The participants’ feedback was taken during the concluding session, both verbatim and in the written form. The feedback from the participants was very positive and encouraging. The participants also came up with proactive suggestions for improving the laboratory safety

issues in the institute. Thus, the workshop was successful in not only creating a general awareness about safety issues, but also brought forth many suggestions from the student community.

A written examination was conducted based on the contents discussed during the workshop. The participants were awarded with a certificate of participation upon successful completion of the workshop (based on their

attendance and performance in the written examination). The workshop concluded at 5:45 p.m. on 2nd September, 2016.

“TEACHING AND LEARNING” WORKSHOP / CONFERENCE

Dates: 23rd and 24th September 2016

The Department of Chemistry under the aegis of Technical Education Quality Improvement Programme (TEQIP) has organized a Teaching and Learning Workshop on 23rd and 24th September 2016 at the Institute of Chemical Technology, Matunga, Mumbai. The aim of the workshop was to provide a common platform to address some academic issues/challenges/problems/ doubts, etc. in regard to the various topics related to pedagogy. In this context, lectures related to the topics such as – philosophy and history of science, learning kinaesthetic, virtual labs, information and communication technologies in teaching, learning styles, value innovation, gender bias in science, generating quality assessment instruments and evolution of the scientific method – were organized.

The workshop was coordinated by Prof. S. D. Samant and Dr. Vijay Kumar A., Department of Chemistry, ICT. Prof. Subramaniam, Director, HBCSE, was the Chief Guest.

The first technical session started from 10.00 am. The inaugural lecture was delivered by Prof. K. Subramaniam on What is Science – Philosophical and Historical Perspectives. On the same day Prof. Sanjay Chandrasekharan took session on The impossible optimization problem, followed by Mr. Vivek Phadke on the topic Why teachers should know, self and students’ personality for better delivery. Mr. Phadke had provided three questionnaires and based on the feedbacks, analyzed the learning and teaching styles of the participants. He explained the analysis in detail. The last talks were delivered by Prof. M. Sasikumar and Prof. Santosh Narohna on the topics Using ICT tools to make your teaching more effective and Virtual Labs, respectively.

On the Saturday, 24th September, the first talk was on Value Innovation Lab - A mandate for both teachers and learners, which was delivered by Prof. Uma Shankar. The next talk was by Prof. Vijay Singh who talked on Science Education research and its imperative for teachers to appreciate it. He gave some problems for brain

storming as well. The third session was taken by Dr. Sugra Chunawala on Gender, Science and Technology: Educational implications. In the 4th technical session, Mrs. Rekha Ramesh spoke about Generating Quality Assessment Instrument in curriculum practices followed by two talks by Dr. Amit Dhakulkar and Prof H.C. Pradhan on How to select software for teaching and learning and The evolution of the scientific method through history of science (up to the scientific revolution) respectively.

Altogether 40 participants had participated in the workshop (attendance forms along with signatures attached for perusal). Some teachers from affiliated colleges in Mumbai also participated. The participants were given copies of some important articles for follow up reading. The participants had informal discussions with the resource persons. Overall the talks and discussions were very informative, interactive and it provided an opportunity to teachers to upgrade themselves with the latest happenings in pedagogy.

SCIENCE OF SYNTHESIS

A one day seminar series on “Science of Synthesis” organized by Dept. of Chemistry and Theime Publishers 9th

Dec. 2016. (Speaker: Guido Hermann): This event was organized for faculty members and research students of ICT.

The objective of this event was to educate researchers about new methods of literature search.

MICROWAVE ASSISTED ORGANIC SYNTHESIS

A one day seminar series on “Microwave Assisted Organic Synthesis” organized by Dept. of Chemistry and Anton Paar on 16th Dec. 2016 (Speaker:

Prof. Oliver Kappe): This event was organized for the research students of ICT, also researchers from various other universities were also participated in

this seminar series. Prof. Oliver Kappe discussed the applications of microwaves as well as green chemistry approaches in organic synthesis.

LABORATORY SAFETY – PITFALLS AND REMEDIES

Inculcating awareness about the common hazards faced by chemists in the research laboratory and developing a working environment to prevent them, has been the priority of the Institute. Due to overwhelming response of the first workshop on Laboratory Safety, the Department of Chemistry conducted a two-day workshop titled “Laboratory Safety – Pitfalls and Remedies” on the 27th and 28th February 2017 under the auspices of TEQIP – II. The workshop was intended for the research students of all the Departments in ICT. The main focus of the workshop was to sensitize the students about the potential sources of environment / health hazards and the methods for preventing or minimizing the impact of such hazards. In order to achieve this goal, the workshop consisted of lectures, interactive sessions and hands-on firefighting and first-aid demonstrations. About 120

students who registered for the workshop.

The workshop was inaugurated by Prof. A. B. Pandit (Dean, HRD), who emphasized the need for a safe and sustainable working environment in the research laboratory. Prof. Samant gave a brief overview of the issues related to safety in a laboratory. He then introduced the participants to various aspects of safe chemical storage. This was followed by a lecture on “Development of Safe Manufacturing Processes” by Shri Vijay Bhujle (GVS Cibatech Pvt. Ltd.) wherein he discussed the various aspects of achieving safe environment in a R&D laboratory.

The next session, began with a discussion on “Toxicity” by Dr. Sadhana Sathye (Department of Pharmaceutical Sciences and Technology) which outlined the different parameters used for measuring toxicity and the long term impact. This was followed

by a lecture on “Handling High Pressure Reactions” by Dr. Yogesh Wagh (USV Pvt. Ltd.) who shared his experiences and knowledge related to the hazards posed by high pressure setups in the laboratory. Shri Santosh Hule (NOCIL Ltd.) delivered a talk on “Fire Hazards” which discussed the firefighting basics in details. Shri Hule also utilized numerous case studies to drive the point home. The final session on the first day was the firefighting demonstration by Shri Hule and his associates. The hands-on training session was much appreciated by the participants of the workshop.

On the second day, the morning session began with a lecture on “Electrical Safety” by Dr. Prerna Goswami (Department of Electrical Engineering). Prof. R. V. Jayaram shared her expertise on personal protective equipment. Prof. J. M. Nagarkar spoke on various aspects of “Waste Management” in the laboratory. After the lunch

break, the participants were trained in Biosafety aspects by Prof. S. K. Kale (DBT – ICT Centre for Energy Biosciences). Finally the participants were taught the basics of first-aid through demonstrations by Dr. Rupesh Gaikwad (Maharshi Dayanand College of Arts, Science and Commerce). These included

the basic practices of bandaging, transportation of sick people and other common accidental situations in the laboratory.

The workshop concluded with a written test and the feedback form. Participants' feedback was taken during the concluding session, both verbatim and in the written form. The valedictory session was chaired by Prof.

Padma Devarajan (TEQIP Coordinator), who commended the efforts of the Department of Chemistry and requested the participants to incorporate the knowledge gained through the workshop in the routine lab practices. The feedback from the participants was very positive and encouraging.

RASAYANAM 2017

Rasayanam, the official Intercollegiate Chemistry festival of the Department of Chemistry, ICT was first conceived in 2013 with the primary aim of enthusing young mind towards chemistry and imbibing the centrality of chemistry in life.

This fun-filled inter collegiate chemistry related event was held on 12th and 13th January 2017. Students from several local colleges participated in this programme. Events such as "The Mega Minds"-a chemistry quiz for post graduate students, "What is the Fun"- A chemistry and skill based quiz for undergraduate students, "Chem Enigma"- an event based on crime scene investigation, "Chem Draw"- a poster presentation competition, "Chem Shodh"- a treasure hunt with chemistry based clues, "Rasayan mela"- fun with chemistry experiments and games, and "Chem Housie"- A normal housie game with element symbol instead of numbers, all were part of this programme and received over whelming response and appreciation.

The Inaugural ceremony started with Dr. Surendra Kulkarni, the Research Director & Site Head for SABIC Technology Centre, Bengaluru who was the Chief Guest for the occasion. The ceremony was blessed with the presence of the honorary Vice-Chancellor of the Institute, Prof. G.D. Yadav. Dr. Vijay A. Kumar, the convenor, welcomed the guests with a floral bouquet and addressed the audience with the introduction of Rasayanam and gave a small but inspiring talk about chemistry and strength of today's generation. The ceremony ended with the Opening of Rasayanam by unveiling poster of Rasayanam by the dignitaries on the dais.

Events conducted in the festival were:

- The MegaMinds – A chemistry quiz for Post-graduate students with 25 teams participating for the elimination round. 5 teams were selected for the final round. At the end of the quiz, top 3 winners were selected with students of Centre for Basic Science bagging 1st prize.

- What the Fun! - A chemistry and skill based quiz for the Undergraduate students with 100 teams participating in the elimination round and 5 teams selected for the final round. The first prize winner was from St. Xavier's College.
- ChemEnigma – An event based on Crime Scene Investigation and forensic science. The event saw the participation of 30 teams with 7 teams going for the final round. The winners of the first prize were from Ruia College.
- ChemDraw - The event was a poster presentation competition wherein 20 participants presented hand-made posters based on the topics given to them. Judges for the event were Dr. Shraeddha Tiwari and Dr. Dipanwita Das. The first prize winner was from Ruia College.
- ChemShodh – Treasure hunt with chemistry-based clues was conducted on both the days of the festival with 25 teams of 4 participants

participating on each day. The treasure hunt took place intra- as well as inter-ICT. Separate winners were selected for two days.

Day 1- Ruia College

Day 2- Khalsa College

- Rasayan-Mela – The event was the centre of attraction with chemistry experiments being conducted for the live audience on both the days. The experiments conducted were simple chemistry-based, keeping into consideration lab safety

and MSDS of every chemical used. Beside experiments, building the molecule game was the attraction for all the UG and PG participants.

- ChemHousie – A normal housie game with element symbol instead of numbers. It was organized by PhD students from the department.
- The closing ceremony of Rasayanam was held on 13th January, 2017 at 05:30 p.m. in the K.V.Auditorium with prize distribution in which the winners were awarded

cash prizes, trophies and certificates. The participants were awarded with the participation certificates. The ceremony ended with the vote of thanks by the Jevy V. Correia. Overall the participation for Rasayanam-2017 was about 500. The festival has seen an exponential growth in participation with 100% increase in participation in Rasayanam 2017 as compared to the year of its inception.



SPONSORED PROJECTS

Personal / Departmental / Collaborative	Sponsor by Government/ Private	Name of Sponsor	Title	Duration	Amount sanctioned (inRs.)
Professor R. V. Jayaram					
Personal	Government	IGCAR, Kalpakkam, India	Synthesis of N,N-dialkyl-2-alkoxyacetamides extractants and N,N-dialkyl-2-alkoxyacetamides grafted resins for the separation of trivalent actinides from nitric acid medium and modelling of extractants	3years	27, 16, 800
Personal	Government	Department of Science and Technology post-doctoral research programme	Water bound polymers for adhesive applications	3 years	27, 83, 000
Professor B. M. Bhanage					
Personal	Government	TEQIP-II INN Project	Development of Green and Sustainable Methodology for the Synthesis of Quinazolines and 1, 3, 5-Triazines.	3 years	5,20,000
Personal	Government	CoE-Process Intensification, TEQIP-II	Microwave, Solar Energy, Ultrasound assisted synthesis of metal oxide nano-materials.	3 years	10,00,000
Dr. Anant Kapdi					
Personal	Government	Department of Science and Technology	Application of Palladacyclic Complexes in Synthesis	5 years	35,00,000
Personal	Government	University Grants Commission	UGC-FRP One time research grant	2 years	7,00,000

Personal	Government	DST	'Metal-mediated One-Pot Sequential (Telescoping) Reactions for the Synthesis of Multifunctional Nucleosides/ Nucleotides with Promising Photo- and Biophysical Properties.'	3 years	56,00,000
Personal	Government	CSIR	'Development of Novel Approaches to Multifunctional C-Nucleosides using Palladium-Catalyzed Coupling Processes in Aqueous Media.'	3 years	25,00,000
Personal	Private	RasayanInc	Green Approach towards the synthesis of substituted nucleosides	3 years	25,00,000
Personal	Private	Reliance	Development of new external donors (especially long chain esters and amides of fatty acid) for Homo-grade propene polymerization.	1 year	10,90,000
Personal	Private	Encore Pvt. Ltd.	Development of efficient processes for commercially useful drugs.	2 years	10,00,000
Collaborative	Government	Department of Biotechnology	'Synthesis and Cellular Evaluation of Novel Palladacyclic Complexes for Breast Cancer'	3 years	25,00,000

Collaborative	Private	Alexander von Humboldt Foundation	Multi-functional Nucleosides and Nucleotides via Palladium-Mediated Reactions Using Novel Palladacyclic Complexes with Promising Anticancer Activities	3 years	55,000 euros (Rs. 38,00,000)
Dr. Kaustubh A. Joshi					
Personal	Government	DST-SERB	Efficient QM/MM approach for Protein/Ligand Binding Free Energies: finding inhibitors for novel cathepsin K, an Osteoporosis target	3 years	25,00,000
Personal	Government	DST - SERB	Efficient QM/MM approach for Protein/Ligand Binding Free Energies	5 years	33,00,000
Dr. Shraeddha Tiwari					
Personal	Government	DST-SERB	Investigating reactivity and selectivity of organic reactions in liposomes as microreactor assemblies	3 years	16,98,000
Personal	Government	DST-INSPIRE	Investigating reactivity and selectivity of organic reactions in liposomes as model protocells	5 years	3500,000
Dr. Dipanwita Das					
Personal	Government	DST-INSPIRE	Transition metal mediated catalytic $2e^-/2H^+$ and $4e^-/4H^+$ reduction of O_2 : synthesis, structure-reactivity correlation and mechanistic insights by trapping intermediates	November 2013 to November 2018	35,00,000

Personal	Government	DST-SERB	Development of Promising Photochromic Metal Organic Frameworks with Functionalized Photo-switchable Groups	November 2015 to November 2018	22,21,000
Dr. Sanghamitra Chatterjee					
Personal	Government	Department of Science and Technology (DST)	Nanomaterial Based Electrochemical Sensors for Biomedical Applications	August 2014 to August 2019	35,00,000
Dr. Sudam G. Dawande					
Personal	Government	DST-SERB	Design, Synthesis of O-Thioester Substituted N-sulphonyl-1,2,3-triazoles and Their applications in The Intramolecular Cyclization to Synthesize Benzo Fused Thioheterocycles.	04/2016-03/2019	20,30,000
Personal	Government	DST-SERB	Ruthenium(II) catalysis in the C-6 Functionalization of Indoles: C-C and C-O Bond Formation	04/2017-3/2021	39,00,000

CONSULTANCY

Prof. B. M. Bhanage
Industrial Consultants to several reputed chemical industries

- Technical Consultant: **Prof. S.D. Samant**
ChemCleanzio, India Pvt. Ltd
- Board of Advisors: Nanocoat Chemtech Pvt. Ltd
- NOCIL Ltd, Pawane, Navi Mumbai

RESEARCH PUBLICATIONS, PATENTS AND BOOK CHAPTERS

A] Research Publications

Sr. No.	Title of the paper	Authors	Journal
Prof. R. V. Jayaram			
1	Hexagonal Mesoporous Silica-Supported Copper Oxide (CuO/HMS) Catalysts: Synthesis of Primary Amides from Aldehydes in Aqueous Medium	R. G. Kadam, A. K.Rathi, K.Cepe, M. B.Gawande, R. V. Jayaram	ChemPlusChem2017, 82, 467-473
2	An efficient route to 1,8-dioxo-octahydroxanthenes and -decahydroacridines using a sulfated zirconia catalyst	S. S. Kahandal, A. S.Burange, S. R.Kale, R.Luque, R. V. Jayaram, R.V.	Cat. Commun. 2017, 97, 138-145
3	Green Oxidation Protocol for Alcohols to Carbonyls by Tertbutylhydroperoxide over MnO ₂ Catalysts: Comparison of Bulk and Nanostructure	A. S. Burange, A. Jayakumar, A. J. Sahani, S. Ladage, R. V. Jayaram.	Current Catalysis2017, 6, 115–122
4	Heterogeneously Catalyzed Domino Synthesis of 3-Indolylquinones Involving Direct Oxidative C–C Coupling of Hydroquinones and Indoles	S. B. Kamble, P. P. Vyas, R. V. Jayaram, C. V. Rode ACS Omega2017, 2, 2238–2247	
Prof. B. M. Bhanage			
1	Kinetic Resolution Driven Diastereo- and Enantioselective Synthesis of cis- β -Heteroaryl Amino Cycloalkanols by Ruthenium-Catalyzed Asymmetric Transfer Hydrogenation	V. K. Vyas, B. M. Bhanage	Org. Lett., 2016,16, 6436-6439
2	Room Temperature Synthesis of Copper Oxide Nanoparticles: Morphological Evaluation and Their Catalytic Applications for Degradation of Dyes and C–N Bond Formation Reaction	M. A. Bhosale, S.C. Karekar, B. M. Bhanage	ChemistrySelect, 2016, 1, 6297–6307
3	Oxime Palladacycle Catalyzed Carbonylative Sonogashira Cross-Coupling with High Turnovers in PEG as a Benign and Recyclable Solvent System	P.Gautam, B. M. Bhanage	ChemistrySelect, 2016, 1, 5463-5470
4	Synthesis of quinazolines from 2-aminobenzylamines with benzylamines and N-substituted benzylamines under transition metal-free conditions	A.R. Tiwari, B. M. Bhanage	Org. Biomol. Chem., 2016, 14, 10567-10571

5	Effect of solvent ratio and counter ions on the morphology of copper nanoparticles and their catalytic application in b-enaminone synthesis	A.L. Gajengi, T. Sasaki, B.M. Bhanage	RSC Adv., 2016, 6, 101800–101807 (highlighted in Synfacts, 13, 2017)
6	Greener, Recyclable and Reusable RuCl ₃ /PEG-400/H ₂ O System for the Selective Hydrogenation of Biomass Derived Levulinic acid to γ -valerolactone	N.M. Patil, B. M. Bhanage	ChemCatChem, 2016, 8, 3458–3462
7	Rh/Cu ₂ O nanoparticles: Synthesis, characterization and catalytic application as a heterogeneous catalyst in hydroformylation reaction	S.A. Jagtap, M.A. Bhosale, T. Sasaki, B.M. Bhanage	Polyhedron, 2016, 120, 162-168
8	Brønsted Acidity of Protic Ionic Liquids: a Modern ab initio Valence Bond Theory Perspective	A.B. Patil, B. M. Bhanage	Phys. Chem. Chem. Phys., 2016, 18, 26020 - 26025
9	KCC-1 supported palladium nanoparticles as an efficient and sustainable nanocatalyst for carbonylative Suzuki–Miyaura cross-coupling	P. Gautam, M.Dhiman, V. Polshettiwar, B.M. Bhanage	Green Chem., 2016, 18, 5890-5899
10	Palladium(II) complex of 4-pyridylselenolate ligand: An efficient catalyst for aminocarbonylation of aryl and hetero aryl iodides with primary amines	S.P. Chavan, S. Dey, V.K. Jain, B. M. Bhanage	Proc. Natl. Acad. Sci., India, Sect. A Phys. Sci., 2016, 86, 581–587 (invited article)
11	Copper-Catalyzed Synthesis of Benzoxazoles via Tandem Cyclization of 2-halophenols with Amidines	A.R.K. Tiwari, B. M. Bhanage	Org. Biomol. Chem., 2016, 14, 7920–7926
12	Ru(II)/PEG-400 as a Highly Efficient and Recyclable Catalytic Media for Annulation and Olefination Reactions via C-H Bond Activation	S.L. Yedage, B. M. Bhanage	Green Chem., 2016, 18, 5635-5642
13	Lipase immobilization on hydroxypropyl methyl cellulose support and its applications for chemo-selective synthesis of β -amino ester compounds	K.C. Badgujar, B. M. Bhanage	Process Biochem., 2016, 51, 1420-1433
14	Carbonylation of anthranilic acid with aryl and hetero aryl bromides as a concise way towards benzoxazinone derivatives	S.P. Chavan, B. M. Bhanage	Asian J. Org. Chem., 2016, 5, 1120-1123

15	Synthesis of polyesteramides by carbonylation-polycondensation reaction by using Pd/C as an efficient, heterogeneous and recyclable catalyst	A.K. Satapathy, S.T. Gadge, B. M. Bhanage	Polyhedron, 2016, 120, 112-117
16	Size controlled synthesis of gold nanostructures using ketones and their catalytic activity towards reduction of p-nitrophenol	M.A. Bhosale, S. S. Gupta, B. M. Bhanage	Polyhedron, 2016, 120, 96-102
17	Amberlyst-15/[Bmim][PF6] Catalyzed Synthesis of C3-Symmetric Triarylbenzenes via Cyclotrimerization of Alkynes	K.V. Wagh, B. M. Bhanage	ACS Sustainable Chem. Eng., 2016, 4, 4232-4236
18	N-Heterocyclic Olefins: New Class of Robust Organocatalyst for the Chemical Conversion of Carbon Dioxide to Value Added Chemicals	V.B. Saptal, B. M. Bhanage	ChemSusChem, 2016, 9, 1980-1985
19	Solvent-Switchable Regioselective Synthesis of Aurones and Flavones Using Palladium-Supported Amine-Functionalized Montmorillonite as a Heterogeneous Catalyst	S.P. Chavan, G. B. B. Varadwaj, K. M. Parida, B. M. Bhanage	ChemCatChem, 2016, 8, 2649-2658
20	Immobilized Ruthenium Metal-Containing Ionic Liquid-Catalyzed Dehydrogenation of Dimethylamine Borane Complex for the Reduction of Olefins and Nitroarenes	N.M. Patil, T. Sasaki, B. M. Bhanage	RSC Adv., 2016, 6, 52347 - 52352
21	Modern ab initio Valence Bond Theory Calculations Reveal Charge Shift Bonding in Protic Ionic Liquids	A. B. Patil, B. M. Bhanage	Phys. Chem. Chem. Phys., 2016, 18, 15783 - 15790
22	Palladium-Catalyzed Oxidative N-dealkylation/carbonylation of Tertiary Amines with Alkynes to alpha,beta-Alkynylamides	R.S. Mane, B. M. Bhanage	J. Org. Chem., 2016, 81, 4974-4980(Highlighted in Synfacts, 2016, 12, 988)
23	A magnetic adsorbent for the mutual separation of Am(III) and Eu(III) from dilute nitric acid medium	A.S. Suneesh, R. Kumaresan, R. Jain, K. A. Venkatesan, M.P. Antony, B.M. Bhanage	Colloids and Interface Sci. Commun., 2016, 12, 13-16

24	State-of-the-Art Catechol Porphyrin COF Catalyst for Chemical Fixation of Carbon Dioxide via Cyclic Carbonates and Oxazolidinones	V.B. Saptal, D.B. Shinde, R. Banerjee, B. M. Bhanage	Catal. Sci. Technol., 2016, 6, 6152 - 6158
25	NiO nanoparticles: Efficient catalyst for four component coupling reaction for synthesis of substituted pyrroles	A.L. Gajengi, B. M. Bhanage	Catal. Lett., 2016, 146, 1341-1347
26	Palladium-Catalyzed Deaminative Phenanthridinone Synthesis from Aniline via C-H Bond Activation	S. L. Yedage, B. M. Bhanage	J. Org. Chem., 2016, 81, 4103-4111
27	Epoxidised soybean Oil-Cu/Cu ₂ O bio-nanocomposite material: Synthesis and characterization with antibacterial activity	M.S. Bhalerao, A. V. Patwardhan, M. A. Bhosale, V.M. Kulkarni, B.M. Bhanage	RSC Adv., 2016, 6, 38906-38912
28	Simple Electrochemical Synthesis of Cuprous Oxide Nanoparticles and their Application as a Non-Enzymatic Glucose Sensor	V.V. Khedekar, B. M. Bhanage	J. Electrochem. Soc., 2016, 163, B248-B251
29	One-step sonochemical irradiation dependent shape controlled crystal growth study of gold nano/microplates with high catalytic activity in degradation of dyes	M.A. Bhosale, D.R. Chenna, B. M. Bhanage	ChemistrySelect, 2016, 1, 504-511 (ChemPubSoc Europe -Wiley Journal
30	Highly regio-selective hydroformylation of biomass derived eugenol using aqueous biphasic Rh/TPPTS/CDs as a greener and recyclable catalyst	S.A. Jagtap, E. Monflier, A. Ponchel, B. M. Bhanage	Mol. Catal., 2017, 436, 157-163
31	Combined docking and molecular dynamics study of lipase catalyzed kinetic resolution of 1-phenylethanol in organic solvents	A.C. Mathpati, B. M. Bhanage	J. Mol. Catal. B Enzym, Accepted Manuscript, DOI:10.1016/j.molcatb.2016.12.005, 2016
32	Mechanistic aspects of formation of MgO nanoparticles under microwave irradiation and its catalytic application	A.L. Gajengi, T. Sasaki, B. M. Bhanage	Adv. Powder Tech., 2017, 28, 1185-1192
33	Ultrasound Assisted Synthesis of Gold Nanoparticles as an Efficient Catalyst for Reduction of Various Nitro Compounds	M.A. Bhosale, B. M. Bhanage	ChemistrySelect, 2017, 2, 1225-1231

34	An improved strategy for the synthesis of ethylene glycol via oxamate-mediated catalytic hydrogenation	A.K. Sathpathy, S.T. Gadge, B.M. Bhanage	ChemSusChem, 2017, 10, 1356-1359
35	Current Advances in Heterogeneous Catalysts for the Synthesis of Cyclic Carbonates from Carbon Dioxide	V.B. Saptal, B.M. Bhanage	Curr. Opinion Green Sus. Chem., 2017, 3, 1-10
36	Ultrasonic irradiation assisted preparation of Cu ₂ O-nanocubes and their high catalytic activity in synthesis of quinazolines	A.B. Raut, A.R. Tiwari, B. M. Bhanage	ChemCatChem, 2017, 9, 1292-1297
37	Pd/C Catalyzed Phenoxycarbonylation Using N-Formylsaccharin as a CO surrogate in Propylene Carbonate as a Sustainable Solvent	P. Gautam, P. Kathe, B.M. Bhanage	Green Chem., 2017, 19, 823-830 (Highlighted in Synfacts, 13, 0550, 2017)
38	A simple, additive free approach for Cu/Cu ₂ O nanoparticles: Effect of precursors in morphology selectivity	M.A. Bhosale, B. M. Bhanage	J. Clust. Sci., 2017, 28, 1215-1224
39	Bio-renewable Sources derived Bi-functional Ionic Liquids as Sustainable Catalysts for Carbon Dioxide Fixation	V.B. Saptal, B.M. Bhanage	ChemSusChem, 2017, 10, 1145-1151
Prof. S. D. Samant			
1	Synthesis of dihydroquinoline based fluorescent cyanines for selective, naked eye, and turn off detection of Fe ³⁺ ions	K. Vijay, C. Nandi, S. D. Samant	RSC Advances 2016, 6, 49724-49729
2	Nucleophilic addition of arylmethylzinc reagents (ArCH ₂ ZnCl) to formaldehyde: An easy access 2-(hetero)arylethyl alcohols	V.P. Bhat, S.D. Samant, S. Pednekar	Synth. Commun. 2017, 47, 968-974
Dr. J. M. Nagarkar			
1	Synthesis of 2-aryl quinazolines from (2-aminophenyl) methanol and oxime ether catalyzed by copper ferrite nanoparticles	S. A. Sarode, V. G. Jadhav, J. M. Nagarkar	Tetrahedron Lett. 2017, 58, 779-784
2	A simple metal free oxidation of sulfide compounds	R. B. Wagh, J. M. Nagarkar	Catal. Lett. 2017, 147, 181-187

3	Atom economic palladium catalyzed novel approach for arylation of benzothiazole and benzoxazole with triarylbismuth reagents via C[σ]H activation	K. E. Balsane, S. H. Gund, J. M. Nagarkar	Catal. Commun.2017, 89, 29-33
4	Desulfinylative Pd-catalyzed coupling reaction of arenediazonium salt with aryl sulfonates to give unsymmetrical biaryls	S. H. Gund, K. E. Balsane, J. M. Nagarkar	Tetrahedron Lett.2017, 58, 2936-2939
5	Tandem and chemoselective synthesis of benzil derivatives from styrene and arene diazonium salts	V. G Jadhav, S. A. Sarode, J. M. Nagarkar	Tetrahedron Lett.2017, 58, 1834-1838
6	Pd(NHC)PEPPSI-diazonium salts: an efficient blend for the decarboxylative Sonogashira cross coupling reaction	J. M. Bhojane, V. G. Jadhav, J. M. Nagarkar	New J. Chem.2017, 41, 6775-6780
Dr. Anant Kapdi			
1	Active Palladium Colloids via Palladacycle Degradation as Efficient Catalysts for Oxidative Homocoupling and Cross-Coupling of Aryl Boronic Acids	V. Sable, K. Maindan, P. Shejwalkar, K. Hara, A R. Kapdi	ACS Omega2017, 2, 204-217
2	Palladacycle-Catalyzed Triple Suzuki Coupling Strategy for the Synthesis of Anthracene Based OLED Emitters	G. Dhangar, J. L. Serrano, C. Schulzke, K. C. Gunturu, A. R. Kapdi	ACS Omega2017, 2, 3144-3156
Dr. Vijay Kumar A.			
1	Glycerol as a Recyclable Solvent for Copper-Mediated Ligand-Free C-S Cross-Coupling Reaction: Application to Synthesis of Gemmacin Precursor	A. V. Dubey, S. B. Gharat, A. Vijay Kumar	ChemistrySelect2017, 2, 4852-4856
Dr. Kaustubh A. Joshi			
1	TfOH Catalyzed [3+2] Cycloaddition of Cyclopropane1,1-Diesters with Nitriles: A Density Functional Study	S. S. Kurup, P. Singh, K. A. Joshi	ChemistrySelect2016, 1, 6841 – 6846
Dr. Shraeddha Tiwari			
1	Effect of anion and alkyl chain length on the structure and interactions of N-alkyl pyridinium ionic liquids	M. Potangale, A. Das, S. Kapoor, S. Tiwari	J. Mol. Liq. 2017, 240, 694-707.

Dr. Dipanwita Das			
1	Selective recognition of Cu (II) and Fe (III) using a pyrene based chemosensor	D. Phapale, A. Gaikwad, D. Das	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 2017, 178, 160-165
2	Solvent- and DNA-Controlled Phototriggered Linkage Isomerization in a Ruthenium Sulfoxide Complex Incorporating Dipyrido[3,2-a:2',3'-c] phenazine (dppz)	D.Phapale, R. Ghosh, D. Das	Inorg.Chem. 2017, 56, 6310–6317
Dr. Dawande S. G.			
1	Rhodium-catalyzed pyridannulation of indoles with diazoenals: a direct approach to pyrido[1,2-a]indoles	S. G. Dawande, B. S. Lad, S. Prajapati, S. Katukojvala	Org. Biomol. Chem. 2016,14, 5569-5573
2	Ag(I)-catalyzed intramolecular transannulation of enynone tethered donor–acceptor cyclopropanes: a new synthesis of 2,3-dihydronaphtho[1,2-b]furans	S. G. Dawande, M. Harode, J. Kalepu, S. Katukojvala	Chem. Commun.2016, 52, 13699--13701
Dr. Sanghamitra Chatterjee			
1	Sensitive detection of brucine an anti-metastatic drug for hepatocellular carcinoma at carbon nanotubes – nafion composite based biosensor	R. Savalia, S. Chatterjee	Biosens. Bioelectron.2017, 98, 371-377

B) Patents

PROF. B. M. BHANAGE

- An efficient synthetic methodology to synthesize 2- chloro alkyl ethanoate compounds catalyzed by lipase using supercritical carbon dioxide as a greener reaction media
- K.C. Badgujar, B.M. Bhanage, Indian Patent Application: 201621044030, 2017
- A robust bio-catalytic methodology to synthesize alkyl (2-E)-but -2- enoate

compounds using lipase and supercritical carbon dioxide as greener reaction system

- K.C. Badgujar, B.M. Bhanage, Indian Patent Application: 2017201621043666, 2017
- Ecofriendly method for synthesis of 2, 2 di- methyl propanoate compounds catalyzed by lipase in supercritical carbon dioxide as a greener reaction system
- K.C. Badgujar, B.M. Bhanage, Indian Patent Application: 201621044667,

2017

- Method of making a bio-nanomaterial and its application.
- M.S. Bhalerao, A.V. Patwardhan, M.A. Bhosale, B.M. Bhanage, Indian Patent Application: 201621011953, 2016.

C) Book Chapters

PROF. BHALCHANDRA M. BHANAGE

- Palladium-Catalyzed Carbonylative and Carboxylative CH Functionalization Reactions:

Importance and Role of Regioselectivity P. Gautam, B.M. Bhanage in "Strategies for Palladium-Catalyzed Non-Directed and Directed C-H Bond Functionalization" Editors: A. Kapdi, D. Maiti, Paperback ISBN: 9780128052549, Imprint: Elsevier, 2017

- Synthesis and catalytic applications of magnetic nanoparticles A.B. Patil, B. M. Bhanage Accepted for publication in "Encyclopedia of Nanoscience and Nanotechnology (25-Volume set)", American Scientific Publishers, 2016
- Selection of Reaction Media S.T. Gadge, B.M. Bhanage Chapter 6, pages 221-262, in Industrial Catalytic

Processes for Fine and Specialty Chemicals, ISBN: 978-0-12-801457-8, Edited by Vivek Ranade and Sunil Joshi, by Elsevier Press, 2016, DOI: <http://dx.doi.org/10.1016/B978-0-12-801457-8.00006-9> 2016

DR. ANANT KAPDI

- Mechanistic/ Organometallic Aspects of Palladium Catalyzed C-H Bond Functionalization V. Gayakhe, A. Gholap, A. R. Kapdi, A. R. in Strategies for Palladium-Catalyzed Non-Directed and Directed C-H Bond Functionalization. Volume 1: Latest Trends in Palladium Chemistry, Eds. A. R. Kapdi, D. Maiti, Elsevier, New York, 2017, pp 417-452.
- Introduction to Non-

directed and Directed C-H bond functionalisation A. R. Kapdi, D. Maiti in Strategies for Palladium-Catalyzed Non-Directed and Directed C-H Bond Functionalization.

(Volume 1: Latest Trends in Palladium Chemistry) Eds. Kapdi A. R., Maiti, D. Elsevier, New York, 2017, pp 1-8.

- Directed C-H bond functionalization strategies for synthesis I. J. S. Fairlamb, A. R. Kapdi, in Strategies for Palladium-Catalyzed Non-Directed and Directed C-H Bond Functionalization. Volume 1: Latest Trends in Palladium Chemistry) Eds. A. R. Kapdi, D. Maiti, Elsevier, New York, 2017, pp 9-48.

INVITED TALKS

PROFESSOR S. D. SAMANT

- Lectures on Organic Reaction Mechanism, Vaze College, Mumbai, 17th October 2015
- Lecture on Clay catalyzed reactions, in UGC-sponsored Refresher course for chemistry teachers at Shivaji University, Kolhapur, 21st November 2015
- Lecture on Research Methodology in refresher course for college teachers at Jhunjhunwala college, Mumbai 14th December 2015
- Lecture on clay catalyzed reactions, Dept of Applied Chemistry, at M S University Vadodara, 18th December 2015

PROF. R. V. JAYARAM

- Lecture series on Catalysis, surface Chemistry, IIRBS, Thiruvanthapuram, Feb 2016
- Lectures on Catalysis Science and Technology, NIUS, HBCSE, Dec 2015
- Lectures on Chemical Kinetics, OCSC, HBCSE, May, 2015

PROF. JAYASHREE M. NAGARKAR

- JUDGE at 13th state level Dr. T. R. Ingle lecture competition 2016 Organized by Department Of

chemistry S. P. College Pune on 11th March 2016

DR. ANANT R. KAPDI

- Invited oral presentation at Department of Biochemistry, University of Greifswald, Germany on 14th August 2015.
- Invited presentation to Reliance Industries Limited Rabale, Mumbai on 15th December 2015.
- International conference on Impact of Chemical Research on Environment held from 17th and 18th February 2016 in New College of Arts and Science, Parner. (Invited Talk: Development of Highly Active Pd-catalysts for efficient nucleoside modification)
- Invited talk at Institute of Organic and Biomolecular Chemistry, University of Goettingen, Germany (Organic Colloquia) on 29th July 2016.

DR. SANGHAMITRA CHATTERJEE

- The Electrochemical Performance of Carbon Nanomaterial Modified Sensors: An Analytical Perspective – Invited talk at International Conference on Frontiers at the Chemistry-Allied Sciences Interface organized by Centre of Advanced Study, University

of Rajasthanin Jaipur, India on 26th April 2016.

- The Electrochemical Performance of Carbon Nanomaterial Modified Sensors: An Analytical Perspective – Invited talk at Twelfth Indian Society for Electroanalytical Chemistry (ISEAC) Discussion Meet in Electrochemistry organized by Indian Society for Electroanalytical Chemistry, in Mumbai, India on 8th December 2017.

DR. P. M. MORE

- “Scanning Electron Microscopy” Invited talk at Analytical instrumentation Workshop organized by ICT in Department of Chemical Engineering, Mumbai, India on 19th Oct. 2016.

DR. DIPANWITA DAS

- Potential Anion Sensing Properties by a Redox and Substitution Series of $[\text{Ru}(\text{bpy})_3-\text{n}(\text{Hdpa})\text{n}]^{2+}$, $\text{n}=1-3$; Hdpa = 2,2'-dipyridylamine: Selective Recognition and Stoichiometric Binding with Cyanide and Fluoride Ions”
- The 2nd national conference on “New Frontiers in Chemistry – From Fundamentals to Applications – II”, organized by the Department of Chemistry, BITS Pilani KK Birla Goa Campus on 28th -29th January, 2017.

DOCTORAL DEGREES AWARDED

DEEPAK K. KURHE



Guide: Prof. R.V. Jayaram

Thesis title: **Synthesis, characterization and application of functional polymer**

Brief abstract:

Functional Polymers have a wide range of applications in industry. Polyacrylamides belong to the class of non-ionic, water soluble synthetic functional polymers. Their inert nature is advantageous in most of the applications. The objective of the present research work is to synthesize polyacrylamide based functional polymers, characterize them and study their applications in catalysis, sensing organic pollutants and waste water treatment.

The work done is summarized as follows

- Cationic-polymer/bentonite complex-synthesis, characterization and application as an adsorbent
- Poly (N-2-aminoethylacrylamide) grafted polystyrene-Cu (II) complex-catalyst for the conversion of aldehydes into primary amides
- Oxidant-free

dehydrogenation of alcohols using chitosan/polyacrylamide entrapped Ag nanoparticles

- CuO nanoparticles dispersed in chitosan-grafted polyacrylamide-sensor for phenyl hydrazine and p-nitrophenol

DR. MANOHAR A. BHOSALE



Guide: Prof. B. M. Bhanage

Thesis title: **Synthesis and characterization of Pd, Cu₂O, Cu/Cu₂O, Fe₂O₃ and their catalytic application on coupling reaction**

Brief abstract: The synthesis of shape selective nano and micro-structured materials has received considerable interest due to their unique structure and different properties such as optical, catalytic, electrical, magnetic and thermal properties which has wide spread application. Many protocols used harsh reaction conditions such as requirement of additives, excess reagents, high temperature, long reaction time, multistep synthesis and tedious reaction procedure to development of nanoparticles. Therefore, there is more scope or a need to develop an alternative method which is simple, facile, one step, economical and

additive-free, without the use of extra templates or capping agents which makes the protocol greener for the synthesis of nanoparticles. In this regard, the present work is a fruitful attempt to development of size and shape selective nanoparticles using simple and greener reaction procedure with their detailed characterizations using various analytical techniques. Catalysis has extensive applications in synthesis of variety of industrially important compounds including fuels and fine chemicals. The homogeneous and heterogeneous catalysis have their own advantages with certain drawbacks which restrict their applications in various fields. Nanocatalysis is the branch of catalysis in which nanoparticles acts as a catalyst for organic transformations. Nanoparticles are stable, insoluble in reaction media and having high surface area which increases the contact between substrates/reactants. It has been proven that nanocatalysts acts as a bridge between homogeneous and heterogeneous catalysis. In this regards, the research focused on synthesis of various morphology selective metal and metal oxide nanoparticles (Pd, Cu₂O, Cu/Cu₂O, NiO, Fe₂O₃) using microwave, sonochemical and thermal routes with their detailed characterizations. Furthermore also studied the applications of as synthesized nanocatalysts for different organic coupling reactions including Buchwald-Hartwig amination reaction, and C-C,

C-N bond formation reactions.

DR. DEEPAK B. NALE



Guide: **Prof. B. M. Bhanage**

Thesis title: **Direct and Indirect Chemical Fixation of Carbon-dioxide (CO₂) for the Synthesis of Valuable Chemicals**

Brief abstract:

Catalytic transformation of carbon dioxide (CO₂) is undoubtedly most useful and widely applicable method for the carboxylative cyclization of chemical substances and has found immense attention in the synthetic organic chemistry, research laboratories and industrial processes. CO₂ has wide abundance in nature, inexpensive, non-toxicity, non-flammable and bio renewable anthropogenic natural carbon source and it is also easy for transportation and storage. Utilizing of renewable resources as a ubiquitous Cl source as well as an important “greenhouse gas” has been also attracted much more attention in the view of “green chemistry” concepts and a sustainable society. The most significant utility lies in replacing phosgene, isocyanate or carbon monoxide-based routes, by catalytic incorporation of CO₂ into organic compounds for their respective functionalization. In addition, replacing the

conventional transition metal complex catalytic system having several drawbacks such as their sensitivity towards air, high cost and requirement of special techniques for handling is a substantial improvement in organic synthesis this regards, the present work is a fruitful attempt to exemplify our contribution to the area of chemical fixation of CO₂, in particular, one of the attractive route for chemical fixation of CO₂ is to efficiently convert three-membered oxirane into five member cyclic carbonate. In the present study, we have prepared highly efficient, economical and recyclable catalysts for the development of green methodologies for the synthesis of pharmaceutically important chemicals using various homogeneous and heterogeneous catalysts such as AEPTMS alline functionalized MCM-41, APTES modified mesoAl₂O₃@MCM-41, Cu(OAc)₂•H₂O, Zn(OAc)₂•2H₂O and anhyd. K₂CO₃ including PMHS (poly(methylhydrosiloxane)), DMAB (dimethylamine borane) as green reductant. These prepared heterogeneous catalysts were well characterized by different analytical techniques such as FT-IR, SEM, TEM, Solid state NMR, TPD, BET surface area and TGA/DSC in te1-1ns of their bulk and surface properties. The activity/selectivity of the catalysts was correlated with their physico-chemical properties, wherever possible. The main objective of the thesis was to study chemical

fixation of CO₂ into valuable chemicals.

DR. KISHOR V. WAGH



Guide: **Prof. B. M. Bhanage**

Thesis title: **Studies in Ionic Liquid and Solid Acid Catalysed Organic Reactions**

Brief abstract:

Environmental concern associated with chemical synthesis has posed strict and vital demands for greener processes, and the development of cost-effective and environmentally benign catalytic systems has become one of the main themes of present-day synthetic community. Ionic liquids (ILs) have gained great attention in last 15 years as evidenced by their increasing popularity in catalysis. Features that make ionic liquids attractive media have unique interactions with the active species and improved activities and selectivity of the reaction. In this context, we have described the novel and sustainable catalytic routes for the synthesis of commercially important fine chemicals. In addition to this the applications of heterogeneous solid acid catalysts as a green alternative for important organic reactions is also studied.

DR. NILESH M. PATIL



Guide: **Prof. B. M. Bhanage**

Thesis title: **Transfer Hydrogenation and Hydrogenation Reactions for the Selective Reduction of Value Added Chemicals**

Brief abstract:

Chemo-selective hydrogenation is one of the most important transformations in organic synthesis, and has found numerous applications in fine chemicals, pharmaceuticals, research laboratories and industrial processes. Direct hydrogenation (H_2 gas) and transfer hydrogenation (TH) are the two methods for the reduction of various organic moieties. Heterogeneous catalysis has the selective in action along with recyclability for the hydrogenation reactions. Moreover, homogeneous recyclable catalysts have

been further developed which extended the scope for highly selective catalytic hydrogenation. Considering this fact, this thesis work reports a several green methodologies for the selective reduction of value added chemicals.

MR. VIJAY K.



Guide: **Prof. S.D. Samant**

Thesis title: **Synthetic modifications and applications of industrial aza heterocyclic intermediates**

Brief abstract:

Dihydroquinolines and benzthiazoles are industrially important intermediates. 2,2,4-Trimethyldihydroquinoline is used as an antioxidant in rubber industries. Objective of the present work is to develop some novel compounds using the industrially important intermediates. Next is to find out some applications of the

newly developed compounds. The interested molecules were procured from industrial sources.

The work done is summarized as follows,

1. Synthesis of dihydroquinoline and pyrazolone based merocyanines as 'naked eye' and 'fluorogenic' sensors for hydrazine hydrate in aqueous medium and hydrazine gas
2. Synthesis of dihydroquinoline and imidazopyridine based cyanine as selective and sensitive sensor for Ferric ion
3. Facile strategy for selective halogenation of 2,2,4-trimethyl-1,2-dihydroquinolines with hypohalites
4. Synthesis of dihydroquinoline and chromenone based new fluorescent compound exhibiting multiple fluorescence and solvatochromism with a wide range of responses.

CURRENT DOCTORAL PROJECTS

Sr. No.	Research Scholar	Research Topic
Prof. R. V. Jayaram		
1	RavishankarKadam	Catalytic application of mesoporous silica supported metal oxides
2	Thomson Fernandes	Recovery of metals spent materials by hydrometallurgical methods
3	SuyogKatkar	Catalysis by bimetallic nanoparticles
4	TusharDeore	Functional surfactant in organic synthesis
5	Amber Sahani	Homogeneous catalysis in organic transformations by non-precious metal complexes
6	Sonali Warkari	Synthesis and application of functionalized carbon materials
7	Nisha Kadam	Aqueous and non-aqueous biphasic catalytic systems
8	Indrani Sen	Effects of ionic liquids and other chelating agents on physicochemical properties of surfactants
9	Bhumika Patil	Industrial solid waste treatment
10	Sagar Sejwalkar	Enzyme catalysis: modifications and applications
11	Dattatraya Hase	Synthesis of novel N-based extractants for nuclear fuel reprocessing
12	Kavita Khiste	Enzyme catalysis in degradation of organic pollutants from industrial waste and extraction of value added compounds from micro algae and other sources
13	Kunal Pawar	Micellar catalysis for selective organic transformations
Prof. B. M. Bhanage		
1	Gajengi Aravind	Studies in Nanoparticle Synthesis
2	Bhagade Sachin	Studies in hydroformylation reactions for the synthesis of fine chemicals
3	SaptalVitthal	Carbon dioxide fixation for the synthesis of valuable chemicals
4	Jagtap Samadhan	Studies in hydroformylation reactions for the synthesis of fine chemicals
5	Satpathy Anil	Transition Metal catalysed polymerization & depolymerization reactions
6	Mathapti Ashwini	Stuides and Kinetics in enzymatic reaction
7	VijyeshVyas	Studies in asymmetric catalysis
8	Ashish Mishra	Synthesis of Nano-material oxide and its application in Organic Transformation
9	Kripa Subramaniam	Electrodeposition of metals using ionic liquids
10	Chaurasia Shivkumar	Synthesis of hybrid nanoparticle and their application
11	Raut Amol	Synthesis and Application of nanoparticle
12	Dewal Deshmukh	Dimerization and telomerization reaction
13	Gaikwad Vinayak	Studies in carbonylation reaction

14	Dhande Jawal Priyanka	Studies in enzymatic synthesis
15	Phatake Vishal	Studies in CO ₂ fixation
Prof. S. D. Samant		
1	Niesh Korgavkar	Development of polymeric and gel entrapped base catalysts for base catalysed organic reactions.
2	Prateek Jain	Preparation and application of modified metal oxide catalysts for organic synthesis
Prof. J. M. Nagarkar		
1	Zade Ramesh N.	Application of mixed metal oxides as catalyst in organic transformations involving C-C, C-N, C-O & C-S bond formation
2	Sarode Sachin A.	Synthesis and applications of Nanomaterials as Catalyst in Organic Transformations
3	Jadhav Vilas G.	Study of supported metals and their application in organic transformations
4	Bhojane Jeevan M.	Studies of transition metals and metal complexes in the C-C, C-N and C-S bond formation in the organic synthesis
5	Gund Sitaram H.	Studies in C-C and C-S bond formation reactions by using transition metals
6	Balsane Kishor E.	Studies in C-C bond formation using various metals and metal nano particles
7	Wagh Ravindra B.	Studies on oxidation of organic compounds with peroxides
Dr. Anant R. Kapdi		
1	Ajaykumar Ardhapure	Development of novel route for the synthesis of substituted Nucleosides by using transition metal-catalysed reactions
2	Dharmendra Prajapati	Synthesis and Application of novel metallacycles in organic synthesis.
3	Gopal Dhangar	Metal mediated coupling reactions under mild conditions.
4	Mahendra Patil	Supramolecular polyoxometalate structures synthesis and application for various catalytic organic transformation.
5	Vaibhav Sable	Metal-mediated Synthesis and Application of (Hetero)aromatic Aldehydes
6	VidyaZende	Synthesis of novel ligands and applications in various organic reactions
7	Vijay Gayakhe	Greener approaches towards metal-mediated synthesis of important heterocycles
8	Shatrughn Bhilare	Development of efficient catalytic systems for Nucleoside modification via Sonogashira reaction
9	AniketGholap	Development of efficient C-H bond functionalization protocols for Nucleoside modification

10	Tejpal Girase	Carbazole-based synthetically and biologically relevant molecules.
11	Yuvraj Bhujabal	Development of novel metal-mediated processes for nucleoside modification
Dr. Vijay Kumar A.		
1	AbhishekDubey	Transition Metal Catalyzed Synthetic Organic Transformations
2	Prashant Mandal	Synthetic Approaches For the Synthesis of Chroman Heterocycles
3	Rani Patil	Development of Supramolecular based Catalysts For Organic Transformations
4	Shweta Pawar	Biomimetic Catalysts For Organic Transformations
Dr. Kaustubh Joshi		
1	Snehal Ingle	Exploring NMDA receptor as target for neurodegenerative diseases: a Computational approach
2	Shilpa Nath	Theoretical study in Silicon Chemistry
Dr. Shraeddha Tiwari		
1	MangeshPotangale	Vibrational spectroscopic study of ionic liquid systems and their structures and interactions
2	ArunValvi	Solvent effect on reactivity and selectivity of aromatic nucleophilic substitution
3	Jyoti Dutta	Study of reactivity and selectivity of chemical processes in microreactors
4	Daulat Phapale	Development of Photochromic Metal Complexes: Kinetics and Photophysical Study Co-guide: Dr. Dipanwita Das
Dr. Dipanwita Das		
1	SagarPatil	DNA binding and molecular sensing studies of functionalized ruthenium polypyridylcomplexes
2	VrushaliRaut	Heterogeneous catalytic oxygen reduction by metal organic framework
Dr. Sanghamitra Chatterjee		
1	Tarlekar Pravin	Development of Electrochemical Sensors for Investigation of ElectroactiveCompounds
2	Mane Suyash	Electrochemical Determination of Drugs Utilizing Nanomaterial Modified Sensors
3	Savalia Rutesh	Development and Application of Nanomaterial Based Sensors for Selective Determination of Pharmaceutical formulations in Biological Fluids
Dr. P. M. More		
1	Nitin Lavande	Total Oxidation of VOC and CO using modified Mn-Ce catalyst
2	Rahul More	Complete oxidation of VOC and CO using non noble metal catalyst

Dr. Dawande S. G.

1	Nilesh Kahar	Development of Novel Synthetic Methodologies using Transition Metal Carbene Metal Complexes
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M. SC. SEMINAR TOPICS**A] Awards**

Name of the Student	Title
Nisha Kadam	1st Prize in Oral presentation in Green chemistry and sustainable environment organized by B. S. Abdurrahman university on 2-3 August 2016, Vendalur, Chennai
Ravishankar Kadam	1st Prize in Poster cum Oral presentation in national conference on "new frontiers in chemistry –from fundamentals to applications organised by Birla Institute of Technology and Science Pilani on 28th to 29th January, Goa Campus, Goa
Sitaram Gund	Awarded 1st prize for poster presentation in the National conference on New Vitas in Chemical Research organized by department of chemistry, The IIS university, Jaipur on 18th January – 19th January 2017 in Jaipur, India
Rutesh Savalia	Awarded Prime Minister's Fellowship for Doctoral Research from Science & Engineering Research Board, Department of Science and Technology, Government of India and Confederation of Indian Industry on 27th September 2016
Jyoti Dutta	Awarded 1st prize in poster presentation during the national symposium 'Recent Developments in Synthesis and Catalysis', organized by Department of Chemistry, Dibrugarh University on 10th and 11th March 2017 in Dibrugarh, Assam

B] Oral and Poster Presentations by the Students

Name of Student	Paper/Poster	Details of Event	Title of Paper/Poster
Sonali Thakre	Oral	Green chemistry and sustainable environment organized by B. S. Abdurrahman university on 2-3 August 2016, Vendalur, Chennai	Amino factionalized activated carbon in base catalyzed reaction
Nisha Kadam	Oral	Green chemistry and sustainable environment organized by B. S. Abdurrahman university on 2-3 August 2016, Vendalur, Chennai	Reusable PEG based ionic liquid : a biphasic catalytic system for cyclization and condensation reactions

SonaliThakre	Oral	APCAT-7organized by ICT on 17-21 Jan, Mumbai	Amino fictionalized activated carbon in base catalyzedreaction
Nisha Kadam	Oral	APCAT-7organized by ICT on 17-21 Jan, Mumbai	PEG supported proline- liquid liquid biphasic catalyst in Knoevenagel condensation reactions
Ravishankar Kadam	Poster cum Oral	National conference on“new frontiers in chemistry –from fundamentals to applications organised by Birla Institute of Technology and Science Pilani on 28th to 29thJanuary, Goa Campus, Goa	Hexagonal mesoporous silica-supported copper oxide (CuO/HMS) catalyst: synthesis of primary amides from aldehydes in aqueous medium
Nisha Kadam	Poster	National conference on“new frontiers in chemistry –from fundamentals to applications organised by Birla Institute of Technology and Science Pilani on 28th to 29thJanuary, Goa Campus, Goa	PEG supported proline- liquid liquid biphasic catalyst in Knoevenagel condensation reactions
Amber Sahani	Poster	Green chemistry and sustainable environment organized by B. S. Abdurrahman university on 2-3 August 2016, Vendalur, Chennai	Catalytic activity of transition metal complexes for synthesis of diphenylselenides
SonaliThakre	poster	International conference on environment management and sustainability , Organized by SIES on 4-6 Jan 2017 , Nerul, Mumbai	Chemically modified agricultural waste in the removal of diclofenac sodium from waste water
Nilesh N. Korgavkar	Paper	National Conference, New Vistas in Chemical Research (NVCR-2017) organized at IIS University, Jaipur, on 18-19 January 2017.	1, 3-dipolar cycloaddition reaction of nitrile oxides with alkenes using imidazole and pyridine containing reusable polymeric base catalysts

Prateek Jain	Paper	National Conference, New Vistas in Chemical Research (NVCR-2017) organized at IIS University, Jaipur, on 18-19 January 2017.	One pot Beckmann Rearrangement using environmentally benign modified Iron Oxide as catalyst
Nilesh N. Korgavkar	Paper	Research Scholar Meet (RSM-2017) Organized at St. Xavier's College, Mumbai on 17-18 February 2017	Development of polymeric and gel entrapped base catalysts for base catalysed organic reactions.
Gopal Dhangar	Oral	National conference J-NOST at IIT Madras held on 7 Feb 2015.	Palladacycle catalysed homocoupling for the synthesis of hetero and homo aryl
Gopal Dhangar	Poster	International conference APCAT-7 held on 2 Feb 2017 in Lalit Hotel, Mumbai	Palladacycle complex catalysed C-C coupling reaction
Dharmendra Prajapati	Poster	National conference on "NEW FRONTIERS IN CHEMISTRY-FROM FUNDAMENTALS TO APPLICATION" (NFCFA 2015) BITS Pilani K. K. Birla Goa Campus on December 18-19, 2015.	Selective palladium – catalysed arylation of 2,6-dibromopyridine using N-Heterocyclic carbene ligands
Dharmendra Prajapati	Poster	International conference on ICOS-21 held at IIT BOMBAY Powai during December 11-16, 2016.	Novel Water Soluble N-Heterocyclic Carbene Palladium Complexes: Recyclable with promising Cytotoxic activity
ShatrughnBhilare	Poster	NFCFA-II (New Frontiers In Chemistry – From Fundamentals To Applications-II), Bits Pilani, Goa, Jan 2017.	Novel Water-Soluble Phosphatriazenes: Ligands for Copper-Free Sonogashira and Column-Free Suzuki Coupling of Nucleosides

VidyaZende	Poster	APCAT - 7 (7th Asia- Pacific Congress on Catalysis), January 2017, Mumbai.	Synthesis & Characterization of NHC ligands & their application towards Arylation of Anthracene & Related Sub
Ajay Ardhapure	Oral	APCAT - 7 (7th Asia- Pacific Congress on Catalysis), January 2017, Mumbai.	Novel Water-Soluble Phosphotriazines: Ligands for Copper-Free Sonogashira and Column-Free Suzuki Coupling of Nucleosides.
Vijay Gayakhe	Poster	International conference on ICOS-21 held at IIT BOMBAY Powai during December 11-16, 2016.	Novel Water-Soluble Phosphotriazines: Ligands for Copper-Free Sonogashira and Column-Free Suzuki Coupling of Nucleosides.
Prashant Gautam	Oral Presentation	APCAT-7 organized by Institute of Chemical Technology and Catalysis Society of India from 17th January 2017 to 21st January 2017 in Mumbai, India	Pd/C Catalyzed Phenoxycarbonylation Using N-Formylsaccharin as a CO surrogate in Propylene Carbonate as a Sustainable Solvent
Vijyesh Vyas	Oral Presentation	APCAT-7 organized by Institute of Chemical Technology and Catalysis Society of India from 17th January 2017 to 21st January 2017 in Mumbai, India	Catalytic asymmetric synthesis of β -triazolyl amino alcohols by asymmetric transfer hydrogenation of α -triazolyl amino alkanones

Prasad Kathe	Oral Presentation	APCAT-7 organized by Institute of Chemical Technology and Catalysis Society of India from 17th January 2017 to 21st January 2017 in Mumbai, India	Oxime Palladacycle Catalyzed Carbonylative Sonogashira Cross-Coupling with High Turnovers in PEG as a Benign and Recyclable Solvent System
Rashi Gupta	Oral Presentation	APCAT-7 organized by Institute of Chemical Technology and Catalysis Society of India from 17th January 2017 to 21st January 2017 in Mumbai, India	Pd/C in Propylene Carbonate: A Sustainable Catalyst-Solvent System for the Carbonylative Suzuki-Miyaura Cross-Coupling using N-Formylsaccharin as a CO Surrogate
Aravind L. Gajengi	Oral Presentation	New Frontier in Chemistry-From fundamental to application -II organized by BITS Pilani, K K Birla, Goa, from January 28th -29th 2017 in Goa, India	Room Temperature Synthesis of Copper Oxide Nanoparticles: Morphological Evaluation and Their Catalytic Applications for Degradation of Dyes and C-N Bond Formation Reaction
Vithhal B. Saptal	Poster Presentation	New Frontier in Chemistry-From fundamental to application -II organized by BITS Pilani, K K Birla, Goa, from January 28th -29th 2017 in Goa, India	Current Advances in Heterogeneous Catalysts for the Synthesis of Cyclic Carbonates from Carbon Dioxide
Rajendra Mane	Poster Presentation	New Frontier in Chemistry-From fundamental to application -II organized by BITS Pilani, K K Birla, Goa, from January 28th -29th 2017 in Goa, India	Palladium-Catalyzed Oxidative N-dealkylation/ carbonylation of Tertiary Amines with Alkynes to alpha,beta-Alkynylamides

Samadhan Jagtap	Poster Presentation	New Frontier in Chemistry-From fundamental to application -II organized by BITS Pilani, K K Birla, Goa, from January 28th -29th 2017 in Goa, India	Highly regio-selective hydroformylation of biomass derived eugenol using aqueous biphasic Rh/TPPTS/CDs as a greener and recyclable catalyst
Vrushali Raut	Poster	“19th CRSI National Symposium in Chemistry & CRSI-GDChAngewandte Chemie Symposium, 13-16 July 2016, held at University of North Bengal, Darjeeling, India.	An efficient metal organic framework based electrocatalyst for effective oxygen reduction reaction (ORR)
Daulat Phapale	Poster	“19th CRSI National Symposium in Chemistry & CRSI-GDChAngewandte Chemie Symposium, 13-16 July 2016, held at University of North Bengal, Darjeeling, India.	Controlling effect of DNA on molecular bistability in a chiral ruthenium sulfoxide complex incorporating dipyrido[3,2-a:2',3'-c]phenazine (dppz)
Kishor Balsane	Poster	New Frontiers in Chemistry-from Fundamentals to Applications (NFCFA 2017) organized by BITS PILLANI Goa Campus on 27th December – 29th December 2017 in Goa, India	Atom economic palladium catalyzed novel approach for arylation of benzothiazole and benzoxazole with triaryl bismuth reagents via C-H activation
Ravindra Wagh	Poster	New Frontiers in Chemistry-from Fundamentals to Applications (NFCFA 2017) organized by BITS PILLANI Goa Campus on 27th December – 29th December 2017 in Goa, India	A simple metal free oxidation of sulfide compounds
Sitaram Gund	Poster	National conference on New Vitas in Chemical Research organized by department of chemistry, The IIS university, Jaipur on 18th January – 19th January 2017 in Jaipur, India	Palladium catalyzed desulfonylative couplings between aryl sulfinates and aryl bromide/iodide for the synthesis of biaryls

Mangesh Potangale	Poster	19th CRSI National Symposium in Chemistry (CRSI-NSC-19), organized by Department of Chemistry, University of North Bengal, Darjeeling, West Bengal on 14th-16th July 2016 in Darjeeling, Siliguri, India.	Vibrational Spectroscopic Study of N-methyl Pyrrolidinium Based Ionic Liquids
Jyoti Dutta	Poster	19th CRSI National Symposium in Chemistry (CRSI-NSC-19), organized by Department of Chemistry, University of North Bengal, Darjeeling, West Bengal on 14th-16th July 2016 in Darjeeling, Siliguri, India.	Non Linear Effects in Interracial Aldol Reaction Catalyzed by Surfactant Based Proline Catalyst
ArunValvi	Poster	National Conference on "New Frontiers in Chemistry - From Fundamentals to Applications", organised by Department of Chemistry, Birla Institute of Technology and Science Pilani, K. K. Birla Goa Campus, India on 28th-29th January 2017 in Sancoale, Goa, India.	Concentration-dependent Solvent Effect on the SNAR Reaction between 1-fluoro-2,4-dinitrobenzene and Morpholine
Mangesh Potangale	Poster	National Conference on "New Frontiers in Chemistry - From Fundamentals to Applications", organised by Department of Chemistry, Birla Institute of Technology and Science Pilani, K. K. Birla Goa Campus, India on 28th-29th January 2017 in Sancoale, Goa, India.	Hydrogen Bonding Interaction in Binary Mixture of N-alkyl Pyridinium Based Ionic Liquids and DMSO-d ₆
Jyoti Dutta	Poster	National Seminar on Recent Development in Synthesis and Catalysis, organised by Department of Chemistry, Dibrugarh University on 10th-11th March 2017 in Dibrugarh, Assam, India.	Non Linear Effects in Interracial Aldol Reaction Catalyzed by Surfactant Based Proline Catalyst

M. SC. SEMINAR TOPICS FOR THE ACADEMIC YEAR I.E. 2016-17

Name of Student	Seminar topic	Seminar Guide
Ameya Tambe	'Allylic Oxidation Using Selenium Dioxide'	Dr. Anant R. Kapdi
Arzoo Chhabra	Implication of TPSO on brain injuries	Dr. A. Vijaykumar
Karishma Inamdar	Matrix Metalloproteinases application and its role in cancer	Dr. Kaustubh A. joshi
Nikita Chitre	Study of hydrogen bonding interactions in Ionic liquids (ILs) using IR spectroscopy	Shraeddha Tiwari
Noopur Dedhia	Inverse Electron Demanding Diels-Alder Reactions in the Asymmetric Synthesis of Nitrogen Heterocycles	Dr. Dawande S. G.
Prasenjit Srivastava	Femtosecond Spectroscopic Study of Photodissociation of Alkali Metal Halides	Shraeddha Tiwari
Priya Singh	Use of Organocatalyst in Asymmetric reduction of Prochiral ketones into chiral alcohol	Prof. B. M. Bhanage
Rashi Gupta	Photoinduced Linkage Isomerisation in Ruthenium Sulfoxide Complexes	Dr. Dipanwita Das
Sneha Chavan	Partial Oxidation of Alcohols to Aldehydes by Heterogeneous Catalysis	Dr. P. M. More
Tanmoya Pradhan	Total Synthesis of Azadirachtin	Dr. A. Vijaykumar
Utkarsha Jamsandekar	Study of palladacycle as catalyst in Heck Coupling reaction	Prof. B. M. Bhanage
Vaishnavi Sharma	Epoxidation of alkene using heterogeneous catalyst	Dr. P. M. More
Vishal Kanojia	Oxallyl cations and their variations in cycloaddition reactions	Dr. S. G. Dawande
Archana Kushwaha	Synthesis, Characterization and Photocatalytic Application of ZnO, Ag Nanoparticle	Dr. J. M. Nagarkar
Vishal Mishra	Minoxidil: A Retrospective Study of its Pharmacological Properties and Therapeutic Use for Alopecia Treatment	Dr. Sanghamitra Chatterjee
Vishal Tandel	Reductions using modified sodium borohydride reagents.	Prof. S.D. Samant

M. Sc. PROJECTS FOR THE ACADEMIC YEAR I.E. 2016-17

Name of Student	Title of the research project	Research Supervisor
Ameya Tambe	Metal-Free Approach Towards the Synthesis of Chromen-2-benzensulfonamides	Dr. A. Vijay Kumar
Archana Kushwaha	Development of a Series of Benzimidazole Derivatives and Their Application	Dr. Dipanwita Das
Arzoo Chhabra	β -cyclodextrin functionalized reduced grapheme oxide: a hydrophobic drug delivery system	Prof. R. V. Jayaram
Karishma Inamdar	Mixed Metal oxide catalyst for the synthesis of Heterocyclic ring	Prof. R. V. Jayaram
Nikita Chitre	Design of Electrochemical Sensors for the Determination of Biologically Important Compounds	Dr. Sanghamitra Chatterjee
Noopur Dedhia	Exploring C-C bond forming Cross Dehydrogenative Coupling reactions	Dr. A. Vijay Kumar
Olviya Gonsalves	Nucleoside Based Molecular Wire Assembly Using Sonogashira Coupling Reactions	Dr. Anant R. Kapdi
Prasenjit Shrivastava	Asymmetric Synthesis	Prof. B. M. Bhanage
Priya Singh	Bromination Study of 2,2,4-Trimethyl-1,2-dihydroquinoline.	Prof. S. D. Samant
Rashi Gupta	Studies in Carbonylation Reactions	Prof. B. M. Bhanage
Sneha Chavan	Effect of Addition of Polar Protic Solvent to Deep Eutectic Solvents: Excess Infrared Spectroscopic Study	Shraeddha Tiwari
Tanmoya Akash Pradhan	Modification of Nucleosides Using Heck and Suzuki Cross-Coupling Reactions	Dr. Anant R. Kapdi
Utkarsha Jamsandekar	Excess Absorption Infrared Spectroscopic Study of Mixtures of Deep Eutectic Solvents and Polar Aprotic Solvents	Shraeddha Tiwari
Vaishnavi Sharma	Investigating Silicon based potential Non-nucleoside reverse transcriptase inhibitors: a theoretical study	Kaustubh A. Joshi
Vishal Kanojia	Mixed metal oxides as selective catalyst for the oxidation of alcohols	Prof. R. V. Jayaram
Vishal Mishra	Michael addition of benzyldine acetophenones and malononitrile in presence of polymeric base poly-1-(4-vinylbenzyl)imidazole.	Prof. S. D. Samant
Vishal Tandel	Development of Novel Transannulation Reactions of N-sulfonyl-1,2,3-triazoles with Epoxides	Dr. Dawande S. G.

M. TECH. (GREEN TECH.) PROJECTS FOR THE ACADEMIC YEAR I.E. 2016-17

Name of Student	Title of the research project	Research Supervisor
Amid Sadgar	Mix metal oxide as solid bases in catalysis	Prof. R. V. Jayaram
Aradhana Menon	Mesoporous silica as a gated drug delivery system	Prof. R. V. Jayaram
Adarsh A. Patel	Studies in Nickel Catalysis	Prof. B. M. Bhanage

C] PRIZES UNDER THE CMP ENDOWMENT:

- | | | |
|--|---|---|
| 1. M.Sc.(Chemistry) Best Student Award (Batch 2016-17)
Mr. Prasenjit Srivastava – Rs. 5000/- cash prize and Certificate | Rs.5000/-Cash Prize & Certificate | batch of 2015-16
Mr. Kathe Prasad Mahesh - Rs.2000/-Cash Prize & Certificate |
| 2. Prize for First Rank in M.Sc. (Chemistry) from batch of 2015 -16
Mr. Fernandes Clinton - | 3. Prize for Second Rank in M.Sc. (Chemistry) from batch of 2015-16
Mr. Londhe Srikant - Rs.3000/-Cash Prize & Certificate | CMP Endowment Award for Best Teacher - Dr. Shraeddha Tiwari |
| | 4. Prize for Third Rank in M.Sc. (Chemistry) from | |



RESEARCH GROUP:

Centre: Prof. R. V. Jayaram

From L to R: Tushar, Amber, Datta, Annu, Kavita, Sonali P., Dr. Anjana, Ravi, Sonali T., Deepak, Nisha, Bhumika, Thomson



Research Group:

From L to R:

1st Row: Sachin Bhagade, Deepak Nale, Kishor Wagh, Prof. B. M. Bhanage, Nilesh Patil, Ashwini Mathpati, Kripa Subramaniam.

2nd Row: Sujit Chavan, Subhash Yedage, Ashish Mishra, Shivkumar Chaurasia, Kirtikumar Badgujar, Anil Sathpathy.

3rd Row: Amol Patil, Rajendra Mane, Samadhan Jagtap, Vijyesh Vyas, Arvind Gajengi, Dewal Deshmukh.

4th Row: Clinton Fernandes, Prashad Kathe, DilipkumarYadav, Manohar Bhosale, Jayendra Ahire, Santosh Revankar, AmolRaut, Vitthal Saptal



Research Group:

From L to R: Prateek Jain, Prof. S. D.Samant, Nilesh Korgaonkar



Photograph of Research Group:

Prof. (Mrs.) J. M. Nagarkar Research Group

Left to Right: Ravindra Wagh, Jeevan Bhojane, Prof. (Mrs.) J. M. Nagarkar, Sitaram Gund, Vilas Jadhav, Sachin Sarode, Kishor Balsane



Right to Left: Dharmendra Prajapati (Ph.D. student), AniketGholap (Ph.D. Student), Sai Vengurlekar (Project Assistant), Ajay Ardhapure (Ph.D. student), TejpalGirase (Ph.D. student), Dr.Anant R. Kapdi, Gopal Dhangar (Ph.D. student), Vidya Zende (Ph.D. student), Rashila Gund (Project Assistant), Safiya Rehman (Project Assistant), Vaibhav Sable (Ph.D. student), Shatrughna Bhilare (Ph.D. student).



Research Group:

From L to R: Ms.Rani Patil, Mr. Mahendra Patil, Dr.Vijay Kumar, Mr.Prashant Mandal, Mr.Abhishek Dubey



Research Group:

From L to R: Shilpa Nath, Kaustubh Joshi, Sudheer Kurup, Snehal Ingle



RESEARCH GROUP:

From L to R: Jyoti, Nutan, Dr. Shraeddha Tiwari, Mangesh, Viraj, Arun



RESEARCH GROUP:

From L to R: Daulat, Archana, Vrushali, Dr. Dipanwita Das, Uddipana, Sagar, Harshawardhan



RESEARCH GROUP:

From L to R: Rutesh Savalia, Suyash Mane, Dr. Sanghamitra Chatterjee, Pravin Tarlekar, Nikita Chitre



From L to R: Rahul More, Nitin Lavande



RESEARCH GROUP:

From L to R: Nilesh Gaikwad, NileshKahar, Pankaj Jadhav, Chinmay Pradhan