

## Dr. YOGESH SUDHAKAR PARAB

---

203/ Beauty Heights CHS,  
Gaon Devi Road, Opp. Gamma House,  
Bhandup (West), Mumbai-400 078.  
Maharashtra, India.

Contact no: 977 359 7370

Email: [mrparabyogeshs@gmail.com](mailto:mrparabyogeshs@gmail.com); Office Email: [yogesh.parab@djsce.ac.in](mailto:yogesh.parab@djsce.ac.in)



---

### Academic Qualifications

2008-2012	<b>Doctorate of Philosophy, Ph. D. Sci., in Chemistry</b> Institute of Chemical Technology (formerly UDCT), Matunga, Mumbai, India. Thesis Title: Chemical recycling of polymeric waste materials Supervisor: Professor S. R. Shukla
2006-2008	<b>Master of Science, M.Sc.</b> K. J. Somaiya College, Vidyavihar, University of Mumbai, India Specialization: Physical Chemistry First Class (66.80 %)
2003-2006	<b>Bachelor of Science, B.Sc.</b> K. J. Somaiya College, Vidyavihar, University of Mumbai, India Specialization: Chemistry Distinction (81.87 %)
2001-2003	<b>Higher Secondary Certificates, H.S.C.</b> K. J. Somaiya College, Vidyavihar, Maharashtra State Board, India Distinction (78.83 %)
1991-2001	<b>Secondary School Certificates S.S.C.</b> M. A. M. V. M., Tilak Nagar, Mumbai, Maharashtra State Board, India Distinction (85.20 %)

### Current Position

July 2013- Present	<b>Assistant Professor/ Subject: Applied Chemistry</b> D. J. Sanghvi College of Engineering, Vile-Parle, west, Mumbai, India
--------------------	---

### Responsibilities held at D J Sanghvi College of Engineering:

1. CAP coordinator Exam (F.E. Mumbai University Examination)
2. Board of Studies (FE Co-ordinator for Humanities Section)
3. NAAC Co-ordinator (FE/ Humanities Section)
4. College Brand Management Committee (NIRF)
5. Admission Committee
6. Autonomy and NBA Committee
7. Maintenance and Infrastructure Committee
8. Sports Committee

9. Class teacher/ Mentor  
10. National Service Scheme Unit (NSS) committee member

### Previous Experience

August 2012- April 2013      **Assistant Professor/ Subject: Applied Chemistry**  
M. H. Saboo Siddik College of Engineering, Byculla, Mumbai, India

### Academic/ Research Experience

2008- 2012                      Research Fellow  
Department of Fibres and Textile Processing Technology, **Institute of Chemical Technology ICT**, (Formerly UDCT), Matunga, Mumbai, Maharashtra, India  
Worked in the field of '**Chemical Recycling of Polymeric Waste Materials**'.

#### Successfully carried out-

- Degradation of polyethylene terephthalate (PET) bottle waste (aminolysis: synthesis of amides from PET)
- Use of *homogeneous/heterogeneous catalyst* and *microwave* as energy source for aminolysis
- Scale up of lab scale reaction (aminolysis)
- Basic chemical reactions on pure monomeric product obtained from degradation of PET bottle (*chlorination, bromination, esterification, nitration, chlorosulfonation, tosylation, acetylation*)
- Synthesis of *heterocyclic compounds* (phenylene bis- oxazoline, 1,3,4-oxadiazole, etc)
- Synthesis and application of *plasticizer* in polymer industry (PVC compounding)

2007- 2008                      **1.5 months (M.Sc. Project)**  
Project Trainee  
Worked on determination of % extraction of alumina content from bauxite ore  
Ashapura mine chem, Belapur, Navi Mumbai, India

2009- 2011                      **Teaching assistant (Tutor/ Practical Demonstrator)**  
Successfully supervised/ conducted chemistry practicals of First Year B. Tech (F.Y.B.Tech) and Second Year B. Tech (S.Y.B.Tech) students in the year 2009- 10 and 2010- 11 respectively.  
Institute of Chemical Technology (ICT), Matunga, Mumbai.

### Research Publications

1. Aminolytic Depolymerization of Poly (Ethylene Terephthalate) Bottle Waste by Conventional and Microwave Irradiation Heating.  
**Yogesh S. Parab**, S. R. Shukla. *Journal of Applied Polymer Science* 2012, 125, 1103–1107.
2. Microwave Irradiated Synthesis of 1, 4- Phenylene Bis- Oxazoline from BHETA: Heterogeneous Catalyzed, Aminolytic Depolymerization of Poly (Ethylene Terephthalate) (PET) Bottle Waste  
**Yogesh S. Parab**, S. R. Shukla. *Current Chemistry Letters* 2012, 1, 81–90.
3. Intrinsic catalytic activity of Bronsted Acid Ionic Liquids for Synthesis of Triphenyl Methane and Phthalein under Microwave  
N. Sekar<sup>a\*</sup>, Amol Choudhary<sup>a</sup>, **Yogesh S. Parab<sup>b</sup>**, Vikas S. Patil<sup>a</sup> and S. R. Shukla<sup>b\*</sup>. *RSC Advances* 2012, 2, 12112-12117.

4. Microwave synthesis and antibacterial activity of 1, 4- Bis (5- aryl- 1, 3, 4- oxadiazole- 2- yl) benzene derivatives from terephthalic dihydrazide, aminolyzed product from PET bottle waste  
**Yogesh S. Parab**, S. R. Shukla. *Waste and Biomass Valorization* 2013, 4, 23-27
5. Novel synthesis, characterization of N<sup>1</sup>, N<sup>1</sup>, N<sup>4</sup>, N<sup>4</sup>-tetrakis (2- hydroxyethyl) terephthalamide (THETA) and terephthalic acid (TPA) by depolymerization of PET bottle waste using Diethanolamine  
**Yogesh S. Parab**, S. R. Shukla. *Journal of Macromolecular Science- Part A (Pure and Applied Chemistry)* 2013, 50, 1149-1156.
6. Novel Synthesis, characterization, and application of Dibutyrate bis (2-hydroxyethyl) terephthalamide as a plasticizer in PVC compounding  
**Yogesh S. Parab**<sup>1</sup>, P. A. Wasekar<sup>2</sup>, S. T. Mhaske<sup>2</sup>, S. R. Shukla<sup>1\*</sup> *Polymer Bulletin* 2014, 71, 2695-2707.

### International/ National Conferences

- 2010 Presented Paper on “*Aminolytic Depolymerization of Poly (Ethylene Terephthalate) Bottle waste under microwave irradiation*” at an **international conference** on polymer science and engineering, University Institute of Chemical Engineering and Technology, Panjab University, Chandigarh, India.  
**Yogesh Parab**, S. R. Shukla
- 2011 Presented Paper on “*Microwave synthesis and antibacterial activity of 1, 4-Bis (5-aryl-1, 3, 4-oxadiazole-2-yl) benzene Derivatives from terephthalic dihydrazide, aminolyzed product from PET bottle waste*” at an **international conference** on recycling and reuse of materials (ICRM), Kottayam, Kerala, India  
**Yogesh Parab**, S. R. Shukla
- 2014 Presented Paper on “*Recycling of PET bottle waste in synthesis of Dibutyrate bis (2-hydroxyethyl) Terephthalamide and its application as plasticizer*” at **National conference** on advances in synthetic and materials chemistry (NCASMC-2014), Mumbai University, Mumbai, India.  
**Yogesh Parab**, S. R. Shukla
- 2019 Attended **One day conference** on “*Polymer Processing*” Pillai college of engineering, New Panvel.
- 2019 Attended One day conference on *Astronomy and Astrophysics*, Vivekananda College of Arts, Science and Commerce, Chembur, Mumbai
- 2020 Participated in web conference on “**Covid-19: Perspective of science and challenges**” organized by Siddharth college of arts, science and commerce, Mumbai
- 2020 Participated in two days international level web conference on “**New pathways in chemistry**” organized by N G Acharya and D J Marathe college of arts, science and commerce, Mumbai
- 2020 Participated in national level web conference on “**Green Catalysis and Material chemistry**” organized by Anandibai Pradhan science college, Nagothane, Raigad

### Short Term Training Programme (STTP) and Faculty Development Programme (FDP)

- 2016 Attended *One-week Short Term Training Programme (STTP) on “Chromatographic methods”* at NITTTR, Bhopal, India Under MHRD, Govt of India.

- 2017 Attended *One-week Short Term Training Programme (STTP)* on “**Nanoscience and technology fundamentals, synthesis and applications**”, SPCE, Mumbai, Maharashtra, India.
- 2017 Attended UGC-Sponsored *One-week Short Term Training Programme (STTP)* on “**Research methodology in science**”, University of Mumbai, Mumbai.
- 2018 Attended UGC-Sponsored *One-week Short Term Training Programme (STTP)* on “**Effective Teaching Strategies**”, University of Mumbai, HRDC, Mumbai.
- 2019 Successfully completed **Two days** Faculty Development Programme on “**Active teaching Learning Strategies**” using innovative technology, D J Sanghvi college of engineering, Mumbai.
- 2020 Participated in one week online short-term training programme (STTP) on “**Emerging trends in Chemical Science and its Applications in Environment and Engineering**” organized by Jabalpur Engineering College, Jabalpur, India
- 2020 Attended one-week international faculty development web-programme on “**Innovative Trends in Engineering and Technology**” organized by IQAC, Shree. L. R. Tiwari College of Engineering, Mumbai
- 2020 Participated in One Week Faculty Development Program on “**Open FOAM**” organized by Department of Mechanical Engineering, SVKM, Dhule
- 2020 Attended One Week Faculty Development Programme on “**Improving Teaching Learning Experience using Best Practices**” organized by D J Sanghvi college of Engineering, Mumbai
- 2021 Successfully completed **Five-day** online FDP on the theme “**Inculcating Universal Human Values in Technical Education**” organized by All India Council for Technical Education (AICTE)
- 2021 Participated & completed successfully AICTE Training And Learning (ATAL) Academy **Five days** Online Elementary FDP on “**Green Technology & Sustainability Engineering**” at Bharati Vidyapeeth College Of Engineering, Navi Mumbai.
- 2021 Participated & completed successfully AICTE Training And Learning (ATAL) Academy **Five days** Online Elementary FDP on “**Nanoscience And Nanotechnology: Current Perspectives In Nanomaterials Synthesis and Characterizations**” at Department of Chemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

#### NPTEL

- 2019 Successfully completed **NPTEL-AICTE 8-week (Full FDP of one week)** Faculty Development Programme on *Mechanisms in Organic Chemistry with 65 %*.

#### COURSERA

- 2020 **Finance for Everyone: Decisions**  
Successfully completed an online non-credit course authorized by McMaster University and offered through Coursera

- 2020      **Learning to Teach Online**  
Successfully completed an online non-credit course authorized by UNSW Sydney (The University of New South Wales) and offered through Coursera
- 2020      **Assessment in Higher Education: Professional Development for Teachers**  
Successfully completed an online non-credit course authorized by Erasmus University Rotterdam and offered through Coursera
- 2021      **Know Thyself - The Value and Limits of Self Knowledge: The Unconscious**  
Successfully completed an online non-credit course authorized by The University of Edinburgh and offered through Coursera
- 2021      **Schizophrenia**  
Successfully completed an online non-credit course authorized by Wesleyan University and offered through Coursera
- 2021      **Drug Discovery**  
Successfully completed an online non-credit course authorized by University of California San Diego and offered through Coursera
- 2021      **Drug Development**  
Successfully completed an online non-credit course authorized by University of California San Diego and offered through Coursera
- 2021      **Drug Commercialization**  
Successfully completed an online non-credit course authorized by University of California San Diego and offered through Coursera
- 2021      **Introduction to Molecular Spectroscopy**  
Successfully completed an online non-credit course authorized by University of Manchester and offered through Coursera
- 2021      **How things work: An Introduction to Physics**  
Successfully completed an online non-credit course authorized by University of Virginia and offered through Coursera
- 2021      **Teacher SEL: Programs, Possibilities, and Contexts**  
Successfully completed an online non-credit course authorized by University of Colorado Boulder and offered through Coursera
- 2021      **The teacher's Social and Emotional Learning**  
Successfully completed an online non-credit course authorized by University of Colorado Boulder and offered through Coursera
- 2021      **SEL for Students: A Path to Social Emotional Well Being**  
Successfully completed an online non-credit course authorized by University of Colorado Boulder and offered through Coursera

### Seminars and Programmes

- 2016      Participated in the Seminar on, *“Latest Trends in Environmental Engineering & Water Resource Technology”*, SVKM's Mukesh Patel School of Technology Management & Engineering, Mumbai.

2016 Participated in the “**SAKSHAM-IT Champion Training Programme**”, D. J. Sanghvi College of Engineering, Mumbai.

2020 Participated in the “**Atomic Energy for National Development**”, organized by Don Bosco Institute of Technology in collaboration with BARC

### Workshops

2017 Participated in a four-day State level workshop on, “**GATEWAY TO SUCCESS IN CSIR-NET/SET/GATE**” in **CHEMICAL SCIENCES**, Wilson College, Mumbai

2019 Attended a blended mode workshop on ‘**Moodle Learning Management System**’ held at the Dwarkadas J Sanghvi College of Engineering, Vile Parle, Mumbai

2020 Participated in international online workshop on “**Nanomaterial Synthesis is Emerging Facet of the world**” organized by Late Pushpadevi patil arts and science college, Risod, Washim

### Webinars

2020 Participated in **four days** webinar series on “**IT and IPR 2020**” organized by IQAC, Shree. L. R. Tiwari College of Engineering, Mumbai

2020 Attended **two days** webinar on “**Recent trends in microwave engineering and internet of things**” organized by D J Sanghvi college of Engineering, Mumbai

2020 Attended **one day** programme on “**Insolvency and Bankruptcy code of india**” organized by KCES’s Institute of Management and Research, Jalgaon

2020 Attended webinar on “**Handling uncertainty and anxiety due to covid-19**” organized by SVKM’s NMIMS university (Mechanical dept), Mumbai

2020 Participated in webinar on “**Math and Neural network (Techniques and Technologies)**” organized by DOMAIN-MATH club, BSH, Department of DBIT, Mumbai

2020 Attended a webinar on “**Urban Biodiversity**” organized by SVKM’s Mithibai College of arts, science and commerce, Mumbai

2020 Attended national webinar on “**Blogs and more...- A Teacher’s Perspective**” organized by Gurukul college of commerce, Mumbai

2020 **One day** webinar on “**High Performance Thin Layer Chromatography Instrumentation and Applications**” jointly organized by Anchrom Enterprises Pvt Ltd., Mumbai and Ismail Yusuf college of arts, sciences and commerce, Mumbai

2020 Attended webinar on “**Role of plastic in pandemic**” organized by MES’s Pillai college of Engineering, Mumbai

2020 Participated in “**Steering HEIs in the wake of covid- 19 the way ahead for academia**” organized by Vivekanand’s education society college of arts, science and commerce, Mumbai

2020 Participated in webinar on “**Responsible use of medicines**” ST. Francis Institute of Technology, Mumbai

2020 Attended **two days** national level webinar on “**Chemistry and Chemical Engineering: Combating the covid-19 crisis together**”, VJTI matunga, Mumbai

- 2020 Completed online “**Faculty Program on NBA**” with **60 %**, organized by Bharti Vidyapeeth College of Engineering, Navi Mumbai
- 2020 Participated in the Web-Conference on “**COVID 19: Perspective of Science and Challenges**”
- 2021 Successfully attended a Webinar on “**Municipal solid waste management: Technology development to sustainability assessment**” organized by Department of First Year Engineering, LTCE,

### Honors/ Awards/ Achievements

- 2008- 2010 Awarded Junior Research Fellowship (**JRF**) by UGC- SAP, New Delhi, India.
- 2010- 2012 Awarded Senior Research Fellowship (**SRF**) by UGC- SAP, New Delhi, India.
- 2011 **First Prize** in Poster presentation in Second International Conference on Recycling of Plastics (ICRM- 2011) held at Kottayam, Kerala, India
- 2011 Awarded **Travel Grant** from Department of Fibers and Textile Processing Technology, ICT, and from Shri. G. M. Abhyankar travel assistance award for attending international conference.
- 2001 **1<sup>st</sup> rank** in school, S.S.C., M. A. M. V. M., Tilak Nagar, Mumbai, India
- 2006 **3<sup>rd</sup> rank** in college, B.Sc., K. J. Somaiya College, Mumbai, India
- 2008 **1<sup>rd</sup> rank** in college, M.Sc. (Physical Chemistry), K. J. Somaiya College, Mumbai, India

### Scientific/ Soft Skills

- Characterization of Organic compounds using Spectroscopic techniques (NMR, IR, DSC and Mass Spectrometry)
- Computer – Proficient in Microsoft Office (Word, Excel, Power Point), Chemistry software: Chemdraw, etc.
- Efficient in doing Literature Survey (using Chemical abstract services and databases like Scifinder, Scopus, Reaxys etc.)
- Experience of project guidance to post graduate students.
- From fundamental to applied Research.
- Project management, Team-work, Hard work, Leadership, Meeting management, Collaborations and Supervision.
- Interpersonal skills

### Personal Details

- Nationality : Indian
- Sex : Male
- Marital Status : Married
- Date of Birth : 07-03-1986
- Languages Known : English, Marathi and Hindi

## References

- **Prof. S. R. Shukla**  
**Professor & Registrar (former)**, Dept. of Fibers & Textile Processing Technology,  
Institute of Chemical Technology (ICT), Matunga, Mumbai, India  
Tel.: 91-22-33611016/2815, E-mail: [srshukla19@gmail.com](mailto:srshukla19@gmail.com)
- **Prof. R. V. Adivarekar**  
**Head**, Dept. Of Fibers & Textile Processing Technology,  
Institute of Chemical Technology (ICT), Matunga, Mumbai, India  
Tel:91-22-24145616 ext<sup>n</sup> 2801, E-mail: [rv.adivarekar@ictmumbai.edu.in](mailto:rv.adivarekar@ictmumbai.edu.in)
- **Prof. A. R. Rao**  
**Former Head**, Dept. of Chemistry,  
K. J. Somaiya College of Sci. and Comm., Vidyavihar, Mumbai



## Salient features of research work (Ph.D. in Chemistry)

- Thesis topic: “*Chemical Recycling of Polymeric Waste Materials*”

“Poly (ethylene terephthalate) (PET) possesses excellent physical and chemical properties coupled with excellent durability and comparatively cheap manufacturing and processing technology. However, the poor biodegradability of PET has led to severe waste disposal problems. Chemical depolymerization is a possible remedy to huge amount of solid waste generation as it results in degradation products that possess a potential of recyclability.

Aminolytic depolymerization of PET bottle waste using hydrazine monohydrate, ethanolamine and diethanolamine in the presence of simple (sodium acetate, sodium sulphate, nickel chloride and magnesium chloride) and heterogeneous solid inorganic acid (zeolites and montmorillonite- ksf) as *transesterification catalysts*, by *conventional* and *microwave irradiation heating methods*, has been attempted, to obtain pure monomers. The reaction conditions were optimized with respect to time, the catalyst concentration and the PET: amine ratio, to get maximum yield of the products, which were subjected to characterization with FTIR, DSC, NMR.

Various *utility organic compounds* (PBO as chain extender/cross linker, 1, 3, 4- oxadiazole derivatives as antibacterial moiety, DP- BHETA and DB- BHETA as plasticizers) have been synthesized from these monomers obtained. The synthesized compounds also were characterized and confirmed. They have been checked for respective applications followed by performance evaluation.”

### *Aminolysis and scale up*

1. Aminolytic depolymerization of PET bottle waste by conventional and microwave irradiation heating under atmospheric conditions
2. Heterogeneous catalyzed, depolymerization of PET bottle waste using ethanolamine
3. Novel synthesis of N<sup>1</sup>, N<sup>1</sup>, N<sup>4</sup>, N<sup>4</sup>- tetrakis (2- hydroxyethyl) terephthalamide (THETA) and terephthalic acid via depolymerization of PET waste
4. **Scale up:** PET waste depolymerization scale up (about 100 g PET flakes) by hydrazine monohydrate.

### *Synthesis, characterization and applications of chemical utility compounds obtained from monomers through PET aminolysis*

1. Synthesis, characterization and application of 1, 4- phenylene bis oxazoline (PBO) from BHETA as chain extenders/ cross linker in polymer synthesis (In polyacrylate synthesis)  
**Route 1:** PBO synthesis from BCIETA, BBrETA and BNO<sub>2</sub>ETA (intermediates)  
**Route 2:** One step PBO synthesis from BHETA using polyphosphoric acid
2. Microwave synthesis and antibacterial activity of 1, 4-Bis (5-aryl-1, 3, 4-oxadiazole-2-yl) benzene Derivatives from terephthalic dihydrazide
3. Synthesis, characterization and applications of diacid esters (DP- BHETA and DB- BHETA) as plasticizers from BHETA

*Application in PVC compounding (study of mechanical, thermal properties)*