

SWATI VYAS
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Grand Challenges Explorations Initiative-Bill and Melinda Gates Foundation, USA
DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY
INSTITUTE OF CHEMICAL TECHNOLOGY, MATUNGA
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OBJECTIVE

To obtain professional expertise and research experience through gaining a working knowledge of biomedical sciences towards contributing to the health and pharmaceutical sector at large.

EDUCATION

- **CURRENT POSITION: PH.D. (TECH.) CANDIDATE IN PHARMACEUTICS, SENIOR RESEARCH FELLOW**
Specialization: Nanodiagnostics, Vaccine delivery, Green technology
Funded by **Bill and Melinda Gates Foundation, USA** and **Indian Council of Medical Research (ICMR)**.
Thesis title: Nanotechnology based module for diagnosis and prevention of brucellosis.
Brief project description and Skills: Development of point of care nanodiagnostics for rapid detection of infectious diseases and designing vaccine delivery systems using green technologies. Expertise in HPLC, ELISA, PCR, Fluorimetry, Particle size analysis, Supercritical fluid technology, Differential scanning calorimetry (DSC).

 - **MASTER OF PHARMACY**, Aug 2008—Jul 2010
Specialization: Medicinal Chemistry
Junior Research Fellow, University Grants Commission
Department of Pharmaceutical Sciences and Technology, Institute of Chemical Technology (ICT), Mumbai
Research Experience: Grade obtained: 'A'
Thesis Title: Chemical modifications of Polymers for Drug Delivery Systems.
Brief project description and Skills: Development, synthesis and characterization of poly(methylvinyl ether/ maleic acid) based biological scaffolds and evaluation of their potential as mucosal drug delivery systems. Expertise in gel permeation chromatography, thermogravimetric analyses, X-ray diffraction, proton NMR and ATR-FTIR techniques.

 - **BACHELOR OF PHARMACY**, Sept 2004—May 2008
Bombay College of Pharmacy, University of Mumbai, Mumbai, India.

 - **HIGHER SECONDARY CERTIFICATE (HSC)**, May 2004
Maharashtra State Board, Smt. Thirumalai College of Science, Mumbai, India

 - **SECONDARY SCHOOL CERTIFICATE (SSC)**, Jun 2002
Maharashtra State Board, Indian Education Society's V.N. Sule Guruji Vidyalaya, Mumbai, India
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WORK EXPERIENCE

- **ASSOCIATE EDITOR**, Jun 2012 onwards
Annual Newsletter of the Controlled Release Society – Indian Chapter.

- **LABORATORY TEACHING ASSISTANT** for Undergraduate students Pharmaceutics, Second Year, Jun 2011 onwards
Department of Pharmaceutical Sciences and Technology, ICT, Mumbai.

- **CONDUCTED LECTURES** for Third Year B. Pharm. Students in Pharmaceutical Chemistry, ICT, 2012 and for Final Year B. Tech. (Pharma) Students in Nanoscience, ICT, 2014.
- **LABORATORY TEACHING ASSISTANT** for Undergraduate students Pharmaceutical Chemistry, Third Year, Jun 2009 Department of Pharmaceutical Sciences and Technology, ICT, Mumbai.

TRAINING

- Optimization Techniques: Flow cytometry and western blotting, Abcam®, UK at Haffkine Institute, Mumbai, November 2013.
- The Expression CMS – Compact Mass Spectrometer, IIT, Mumbai, April 2012.
- EXACTMELT-2012 on Hot Melt Extrusion Technology, BASF and Thermo Fisher Scientific, at BASF, Mumbai, May 2012.
- **Intern**, Quality Control and Quality Assurance, Softesule Pvt. Ltd. Mulund, Mumbai, India, Jun 2007.

COMPUTING SKILLS

- Website Construction and Management (Google and Microsoft® Publisher) (www.vbpgroup-ict.in)
- ChemBioDraw®, Prism® Graphpad, Endnote®, Refworks®, Mendeley®
- Search Engines: Pubmed, SciFinder®, Science Direct, Google scholar
- Microsoft® Office (Powerpoint, Excel, Word, Publisher, Outlook)

AWARDS, FELLOWSHIPS, QUALIFICATIONS

- **Bombay Technologist Best Post Graduate Student Award 2013-2014**, Institute of Chemical Technology, Mumbai, March 8, 2014.
- **Senior Research Fellowship, Grand Challenges Explorations initiative - Bill & Melinda Gates Foundation (USA)**, February 2014 onwards.
- Conceptualized and presented a business-research proposal for therapy against tuberculosis which for selected amongst over 100 applications in first round of **IKP- Grand Challenges Explorations -Bill & Melinda Gates Foundation (USA)**, February 2014 at Hyderabad.
- Invited at **BIOINVEST 2014** sponsored by Department of Biotechnology (DBT), Ministry of Science and Technology, Govt. of India, and conducted by **Association of Biotechnology Led Enterprises (ABLE)** at Trident, Bandra Kurla Complex, Mumbai, India, January 2014.
- Conceptualized a research proposal for gastrointestinal mucoadhesive formulations which was selected in first phase of **NineSigma Challenge, USA**, November 2013.
- Conceptualized a research proposal for the first green vaccine against brucellosis which received grant award (\$100,000) in **Grand Challenges Explorations Round 11, Bill & Melinda Gates Foundation (USA)**, November 2014. (*Covered by Hindustan Times: Nov 25, 2013; Pharma Times: Dec 13, 2013; Pharmabiz: Nov 28, 2013; Loksatta: Feb 28, 2014*)
- **TEQIP Funding** for Poster and Oral Presentation at the **TEQIP Innovation Meet**, Mumbai, 25-26 September, 2013.
- **BEST (Biotechnology Entrepreneurship Student Teams) ABLE 2013** Selected and presented a business-research proposal on 'Bug the bugs: A Trojan horse strategy' amongst top 20 teams across India in workshop, sponsored by Department of Biotechnology (DBT), Ministry of Science and Technology, Govt. of India, and conducted by **Association of Biotechnology Led Enterprises (ABLE)** at Koramangala, Bangalore, India, September 2013.
- Conceptualized a novel anti-stress technology and selected for presenting at **Johnson and Johnson Ltd.**, Mumbai, June 2013.
- **TEQIP Funding** for Poster Presentation at SAC-ACCP, Mumbai, 21-22 April 2013.
- **BEST (Biotechnology Entrepreneurship Student Teams) ABLE 2012** Selection for a business-research proposal on 'Trojan horse delivery: Exploiting the survival tactics of *Mycobacterium tuberculosis*' amongst top 20 teams across India in workshop, sponsored by Department of Biotechnology (DBT), Ministry of Science and Technology, Govt. of India, and conducted by **Association of Biotechnology Led Enterprises (ABLE)** at Electronic City,

Bangalore, India, June 2012.

- **Senior Research Fellowship (ICMR-SRF), Indian Council of Medical Research**, Sep 2011-Jan 2014.
 - **Gold Certificate of Achievement, TOEFL Star Performer, awarded by ETS®**, 2009.
 - **Junior Research Fellowship (UGC-JRF), University Grants Commission**, Aug 2008—Jul 2010.
 - **GATE score: 98.19 percentile**, Conducted by Indian Institute of Sciences Bangalore, India, Mar 2008.
 - **Certificate of Proficiency and Memento (Class Representative)**, Bombay College of Pharmacy, Mumbai, India, May 2005.
 - **Certificate of Merit (First Rank) FYJC**.
 - **Certificate of Merit (Second Rank) SYJC**.
 - **Certificate of Appreciation and Memento (Second Rank) SYJC, Honored by the Dadar Matunga Citizen's Association**, Mumbai, 2004.
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SEMINARS

- **INVITED SPEAKER, 'ENDNOTE®- A REFERENCING SOFTWARE'** at the **AICTE SPONSORED CONFERENCE** on Softwares in Drug Design and Development, TKCP Warananagar, January 21, 2014. (*Covered by Lokmat: Feb 6, 2013; Dainik Mahasatta: Jan 25, 2014; Sakal: Feb 10, 2014; Tarun Bharat: Feb 6, 2014*)
 - **Diagnostic test fabrication for brucellosis in livestock**, at the **TEQIP Innovation Meet**, K. Venkataraman auditorium, Institute of Chemical Technology, Mumbai, India, September 26, 2013.
 - **Chemical Modifications of Polymers for Drug Delivery Systems**, Master of Pharmacy Research Seminar, Institute of Chemical technology, Mumbai, India, June 2010.
 - **Chitosan: Chemical Modifications and Applications**, Student Seminar, Institute of Chemical Technology, Mumbai, India, Mar 2009.
 - **Stem Cell Research**, Student Seminar, Bombay College of Pharmacy, Mumbai, India, April 2007.
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INTELLECTUAL PROPERTY

PATENTS

- Pharmaceutical composition for therapy against pulmonary disorders. (Filing in progress)
- Non-invasive vaccine delivery system for immunization against brucellosis using green technology. (2920/MUM/2013)
- Point-of-care diagnostic test for rapid detection of brucellosis. (3183/MUM/2013)
- Pharmaceutical composition for combined immunization and therapy against macrophage host related infections. (2266/MUM/2012)

INDUSTRIAL DESIGN

- Industrial Design for anti-TB device.
- Industrial Design for Insecticidal applications. (Filing in progress)

TRADEMARK

- Trademark for anti-TB device.

PUBLICATIONS

- H. Shete*, **S. Vyas***, V. Patravale, J. Disouza. Pulmonary multifunctional nano-oncological modules for lung cancer treatment and prevention. *Journal of Biomedical Nanotechnology*. Special issue March 2014. (Accepted). (*Equal authorship). (Impact factor: 5.28)
- **S. Vyas**, V. Patravale. Advances in nanomaterials for diagnosis and therapy of leukemia. *Recent patents on Nanomedicine*. 4(2), 1-6, 2014.

BOOK CHAPTERS

- **S. Vyas**, V. Patravale, Biosensors for rapid detection of infectious pathogens using molecular nanotechnology In

Nano-Inspired biosensors for Improved Healthcare (Ed. Manoj Kumar Ram and Sherine O. Obare), *Taylor and Francis Group, CRC Publishers, USA, 2014. (In Press)*

- **S. Vyas, V. Patravale**, Molecular nanotechnology: Rapid detection of microbial pathogens in food In *Microbial Food Safety and Preservation techniques* (Ed. V. Ravishankar Rai and A Jamuna Bai), Chapter 10, *Taylor and Francis Group, CRC Publishers, USA, August 2014. (In Press)*
- V. Patravale, **S. Vyas**, Chitosans as delivery vectors in biomedical applications (Ed. Se-Kwon Kim) In *Chitin and chitosan derivatives: Advances in drug discovery and developments*, Chapter 21, *Taylor and Francis Group, CRC Publishers, USA, 2013.*

POSTERS

- **Swati Vyas**, Vandana Patravale, EndNote- A referencing software, AICTE sponsored conference on Softwares in Drug Design and Development, TKCP Warananagar, January 21, 2014.
- Harshad Shete, **Swati Vyas**, Nilakash Selkar, Geeta Vanage, Vandana Patravale, Assessment of genotoxicity and mutagenicity of novel amphiphilic cationic heterolipid, ICT Nano-Bio 2013, Mumbai, India, 23-24 November 2013.
- **Swati Vyas**, Sharmila Majee, Vandana Patravale, Diagnostic test fabrication for detection of brucellosis in livestock, TEQIP Innovation Meet at the Institute of Chemical Technology, Mumbai, India, 25-26 September 2013.
- **Swati Vyas**, Sushama Jadhav, Sharmila Majee, Vandana Patravale, Fabrication and evaluation of fluorescent, silica core shell polymer micelles layered with lipopolysaccharides for antigenic detection, 6th International Conference of the South Asian Chapter of the American College of Clinical Pharmacology, Mumbai, India, 21-22 April 2013.
- **Swati Vyas**, Vandana Patravale, Mariam Degani, Polymeric prodrug of Norfloxacin with a hydrolysis mediated slow release profile and its antimicrobial evaluation, 12th International Symposium of the Controlled Release Society Indian Chapter on Advances in Technology, and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10 February 2012.
- **Swati Vyas**, Mudra Rathod, Mariam Degani, Phenylalanine-graft-poly(methylvinyl ether/maleic acid): Bioconjugate polymer for novel drug delivery systems, Indian Pharmaceutical Congress, Manipal, India, 17-19 December 2010.

MEMBERSHIP

- Life member, Indian Pharmaceutical Association.
- Life member, U.D.C.T. Alumni Association.
- Member of the Controlled Release Society – Indian Chapter.

VOLUNTEER WORK

- Member of the Core Committee for “International Symposium on Drug Discovery for Infectious Diseases and Cancer at Institute of Chemical Technology, Mumbai, India, January 2013.
- Volunteer for organizing one day UKIERI seminar, December 2013.
- Member of the Core Committee, National Seminar on Regulatory Roadmap for Pharmaceuticals in the Global Market at Institute of Chemical Technology, Mumbai, India, November 2012.
- Volunteer for “Indo-US Joint Symposium on Nanomedicine Prospects and Challenges” at Institute of Chemical Technology, Mumbai, India, November 2011.