

CURRICULUM VITAE

Dr. Sushant B. Wath

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DOB: - January 12, 1978



Summary

Dr. Sushant B. Wath (born on 12th January, 1978) has around 23 years of post-PG working experience with India's premier scientific institution, CSIR, including 5 years of industrial experience. He had completed his Chemical Engineering (BE - Chemical) in 2000 and his Master of Business Administration (MBA) in 2002 and PhD in 2021. He started his professional career in 2002, as a "Chemical Engineer" in the private limited industry at Pune, India working in the field related to designing and execution of water and wastewater treatment plants on turnkey basis. In the year 2004, he joined IDMC Ltd. Anand, Gujarat (A subsidiary of National Dairy Development Board (NDDB), which is a large equipment manufacturing and project engineering company in India in the field of dairy, food, pharmaceutical, brewery, beverage, refrigeration and chemical industries. With the total of about 5 years of industrial experience in the field of marketing, designing, development and project execution, he joined National Environmental Engineering Research Institute (NEERI), Nagpur which is one of the premier laboratories working under the umbrella of Central Scientific and Research Institution (CSIR), Government of India, as a Scientist in January 2007.

He has undertaken R&D in the field of E-Waste Management, Sanitation and Engineering Technologies, Water Conservation & Management, and has related more than 20 national & international publications and Chapter in books. He has 3 granted international patents, 3 National Patents and 6 design registrations to his name. He has designed and developed technologies & know-how, which were field deployed, and few were licensed to industry. He has delivered number of invited talks and lectures in national and international conferences, forums, symposiums, workshops within and outside the country. He is presently the IP Coordinator of CSIR-NEERI and looking after the IPR management and related activities of the CSIR-NEERI.

Short Background

Education

PhD. (Chemical Engineering) – RTM, Nagpur University - 2021

M.E. by research (Chemical Engineering) – RTM, Nagpur University -2012

M.B.A. (Finance & Marketing) – Bharati Vidyapeeth, Shivaji University– 2002.

Bachelor of Engg. (Chemical) – Amravati University –2000.

Higher Secondary School Certificate – Amravati Board –1996.

Certificate: Harnessing IP for Strategic Competitive Advantage – IIM, Ahmadabad 2009

Certificate: ISO 9000:2000 Series QMS, Lead Auditor – DET NORSKE VERITAS (DNV), Norway – 2008.

| PROFESSIONAL CAREER | | | |
|-------------------------------------|-------------------|-------------|-----------|
| Institution | Position | From (Date) | To (Date) |
| CSIR- NEERI, Nagpur | Scientist | 2007 | Till date |
| IDMC LTD. Anand (Gujarat) | Assistant Manager | 2004 | 2007 |
| Wytewater Technologies PVT. LTD., P | Chemical Engineer | 2002 | 2004 |

Science & Technology Management

- Technical & Administrative support at Director Secretariat, NEERI
- Project Monitoring, Planning & Business Development
- Intellectual Property Rights (IPR) Management as IP Coordinator
- ISO/QMS/ERP
- Institutional MoUs/ Agreements/NDAs

Research Areas

- ❖ E-waste Management
- ❖ Sanitation and Engineering Technologies
- ❖ Water & Energy Conservation and Management

| SN | Project title | Duration | Sponsor | Status |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|-----------|
| 1 | Study on management of waste Photovoltaic (PV) Solar Panels with recourse to recycling & recovery of valuable materials (WP-14 HCP-54) (Waste to Wealth: Comprehensive Solutions Towards Circular Economy and Sustainability) | 36 months | CSIR | Ongoing |
| 2 | Street Scaping redesigning & water conservation and management (OLP-51) (June,2022- Dec.,2024) | 24 months | CSIR | Completed |
| 3 | Design and Development of Electro-Mechanical PV Solar Panel Cleaning Prototype (OLP-53) (April 2023- Sept 2024) | 24 months | CSIR | Completed |
| 4 | Review and update of National Implementation Plan (NIP) on POPs for India (Sector-wise Roles/ Responsibility: Electric and Electronic products/Waste (Jan., 2023- June,2027) | 36 months | UNEP | Ongoing |
| | | | | |
| 5 | Popularization and implementation of products and devices for Menstrual Waste Management - Design and development of the environmental friendly soiled sanitary pad disposal machine | 18 Months | CSIR, New Delhi | Completed |
| 6 | Design, development & demonstration of Hands Free Hand Washing and Hand | 6 Months | CSIR, New | Completed |

| | | | | |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------|-----------|
| | Sanitization System PL.: Sushant Wath | | Delhi | |
| | | | | |
| | CSIR-800 Rural Development Project | | | |
| 7 | Design and development of Low cost & affordable technology for improving the sanitation & hygiene in Rural Areas (RSP-4018) | 3 Years | CSIR, New Delhi | Completed |
| | | | | |
| | XII Plan Project | | | |
| 8 | Waste to Wealth (W2W): Plastic Recycling (CSC120) Evaluation/Development of Recovery and Recycling processes/practices for the recovery of valuable material from E-waste.(WP1) (PL: Sushant Wath) | 5 Years | CSIR, New Delhi | Completed |
| 9. | COE-MESER (CSC0108) Techno-economic feasibility of proven bench scale systems/ processes (PL: Sushant Wath) | 5 Years | CSIR, New Delhi | Completed |
| | | | | |
| | Mega Laboratory Project (MLP) | | | |
| 10. | MLP - 67 Design and Development of Mosquito Killing Machine (PL: Sushant Wath) | 2 Years | CSIR, New Delhi | Completed |
| 11 . | MLP – 63 Design and Development of Indoor Portable Air Purifier for Odour, Particulate and Pesticide Removal (Co-PL: Sushant Wath) | 2 Years | CSIR, New Delhi | Completed |
| | | | | |
| | CSIR-EMPOWER Project (OLP) | | | |
| 12 | OLP 37 Ceiling Fan : A hanging Source of Power Generation PL: Sushant Wath | 2 Years | CSIR, New Delhi | Completed |

Patents: 6 Nos.

➤ **International: 3 Nos. (Granted)**

A Mechanical Automatic Urinal-Toilet Flusher and its Mechanism thereof
Inventors: **Wath Sushant Babarao**, Dutt Pallampati Subrahmanya, Wate Satish Ramchandra.

Patent Grant Number;

- ❖ United States : 14/890273
- ❖ European Union: 3143216
- ❖ South Africa: 2016/00020

➤ **National: 4 Nos. (Granted: 2 Nos. ; Filed: 2 Nos.)**

- ❖ A mosquitoes-insects killing machine (MIKM) and its method thereof

Inventors: **Wath Sushant Babarao**, Bansiwai Amit Kumar, Sharma Ashees

Granted: **461693** Date: **Oct. 25, 2023**

- ❖ A Mechanical Automatic Urinal-Toilet Flusher and its Mechanism thereof. Inventors: **Wath Sushant Babarao**, Dutt Pallampati Subrahmanya, Wate Satish Ramchandra.

Granted: **347379** Date: **Sept. 22, 2020**

- ❖ An Automated Mechanical PV Solar Panel Cleaning System and its mechanism thereof (**202311018065** Date: **March 16, 2023**)
- ❖ An Assembly for a Ceiling Fan as a Power Generation Unit and a method thereof Inventors: **Wath Sushant Babarao**, Kannade Gajanan Sitaramji, Shinde Vilas Motiramji (**0301DEL2012**)

Design Registrations- 5 Nos.

- ❖ A Low Cost Mechanical Automatic Urinal-Toilet Flusher- 'NEERFLUSH' 1) **302473** 2) **302474**
- ❖ Water Efficient Urinal Pot "NEERSWACHH" (**305528**)
- ❖ NEERI's Hands Free Hand Washing Point (04/D/2020)
- ❖ Hands Free Hand Sanitization Point- NEERJANTUK (05/D/2020)

Technologies/Know-How Developed/ Transferred/Ready for Transfer

- ❖ Low Cost Automatic Mechanical Urinal-Toilet Flusher "**NEERFLUSH**" For SWACHH BHARAT MISSION.
- ❖ Mosquitoes – Insects Killing Machine (MIKM)
- ❖ COVID Mitigating Measures Technologies (Technology Transferred)
 - NEERI's- Hands Free Hand Washing Point"
 - Hands Free Hand Sanitization Point- NEERJANTU

Research Publications- National and international

- **Sushant B.Wath**, Mahendra P. Patil, Atul N. Vaidya India's Solar Mission: Current Scenario & Challenges ahead- A Overview *Journal of Metallurgy and Materials Science*, Vol. 64, No. 1-2, January-June 2022.
- **Wath S. B.** A Mechanical Automatic Urinal-Toilet Flusher for Swachh Bharat Mission *Procedia Environmental Sciences* 35, 185-192 (July, 2016)
- **Sushant B. Wath**, Mayuri N. Katariya, Amit K. Bansiwai, Vilas M. Shinde and Atul N. Vaidya "Evaluation of the effect of size reduction and thermal treatment on metal extraction from PCBs of mother board and digital video drive of desktop PC" *Current Science*, Vol. 110, No. 5, 10 March 2016.
- Ghosh, Sadhan Kumar; Roychoudhuri, Reshma; **Wath, Sushant B.**; Debnath, Biswajit; Jayakumar, Sandhya; Maloo, Ajay "Waste Management in India: E-waste recycling & Bio-methanation -Case studies" *Journal of Solid Waste Technology & Management* . Feb. 2016, Vol. 42 Issue 1, P748-759. 12 P.
- **S. B. Wath**, M.N. Katariya, S.K. Singh, G.S. Kanade, A. N. Vaidya. "Separation of WPCBs by dissolution of brominated epoxy resins using DMSO and NMP: A comparative study". *Chemical Engineering Journal* 280 (2015)391–398
- **Sushant B. Wath**, Poonam Prasad. "A review on water Resources Availability and management practices in India". *Journal of Environmental Science and Engineering (JESE)* Volume 57, No. 3, Pages 271-286, July, 2015.
- **Sushant B. Wath**, Atul N. Vaidya, **P. S. Dutt**, T. Chakrabarti "A roadmap for development of sustainable e-waste management system in India". *International*

Journal of Science of the Total Environment. Volume 409, Issue 1, 1 December 2010, Pages 19-32.

- **Sushant B. Wath, P. S. Dutt**, T. Chakrabarti "E-waste scenario in India, its management and implications". *International Journal of Environmental Monitoring and Assessment* Volume 172, Issue 1-4, February 2011, Pages 249-62.
- **Sushant B. Wath**, Deepanjan Majumdar "Mitigation of Air Pollution and Carbon Footprint by Energy Conservation through CFLs: A Case Study". *Journal of Environmental Science and Engineering (JESE)* Volume 53, No. 1, January 2011 Pages 65-74.

Conference Publications

- **Wath, S. B.** and Katariya, M N. "Recycling E-Waste for Sustainable Management of Natural Resources. In: Monitoring and Assessment of Natural Resources for Sustainable Management" MANRSM-2017), School of Environmental Earth Sciences, North Maharashtra University, Jalgaon held during January 23-24, 2017.
- Dhote, L J and Katariya, M N and **Wath S. B.** "Study Of Valuable And Hazardous Metals From Capacitors Of Personal Computer" National Conference On Recent Trends In Chemical Engineering And Technology (React-2015), , Lit, Nagpur Held During February 27-28, 2016.
- **Wath S. B.** "An Effective Mosquitoes-Insects Killing Machine (MIKM)" 6th IconSWM 2016: 6th International Conference on Solid Waste Management 2016 held during 24-26 November 2016.
- **Wath S. B.** "A mechanical automatic Urinal-Toilet flusher for Swachh Bharat Mission" 5th International Conference on Solid Waste Management (IconsSWM) 2015 ISWMAW held during Nov. 25-27, 2015 Publishers Page 391-396.
- Mayuri Katariya, Kalpana Tomar, **Sushant B. Wath** and Atul N. Vidya "Non-Ferrous Metals in E-waste: Opportunities and challenges" 18th International Conference on Research and Industrial Practices exclusive on Non-ferrous Minerals and Metals (ICNFM 2014) held during July 11-12, 2014 at Nagpur.
- **Sushant B. Wath** 'E-waste' an urban environmental pollution: problems and prospects in developing countries "International Conference on Solid Waste 2013: Innovation in Technology and Management" held during May 5-8, 2013 at Hong Kong.
- **Sushant B. Wath** Management of E-waste' National Seminar on "Managing Health, Safety and Environment for Sustainable Development" held during February 7-9, 2013 at Nagpur.

Books -Chapters Published /Contributed

- Book Entitle: Solid Waste Policies and Strategies: Issues, Challenges and Case Studies. 2020
Chapter: Low Cost and Affordable Innovation 'NEERFLUSH' and 'NEERSWACHH' for Swachh Bharat Mission P 127-134
DOI <https://doi.org/10.1007/978-981-15-1543-9>
Authors: **Sushant B. Wath**
Publisher: Springer, Singapore
- Book Entitle: Waste Management and Resource Efficiency, 2019
Chapter V: An Effective Mosquitoes-Insects Killing Machine (MIKM) Pages 15-21
DOI https://doi.org/10.1007/978-981-10-7290-1_2

Authors: **Sushant B. Wath**

Publisher: Springer, Singapore

- Book Entitle: Assessment of Carbon Footprint in Different Industrial Sectors Vol. 2
Chapter V: Reduction in the Carbon Footprint of Coal-Fired Thermal Power Plants
by Promoting Compact Fluorescent Lamps and Light-Emitting Diodes in
Households, Offices, and Commercial Centers. Pages 105-134 DOI 10.1007/978-
981-4585-75-0 2015

Authors: **Sushant B. Wath** and Deepanjan Majumdar.

Publisher: Springer Verlag

Industrial Experience

1. Worked as an “**Assistant Manager**” in IDMC LTD. Anand (Gujarat) from 2004 to 2007.

About Organization

IDMC LTD (formerly known as Indian Dairy Machineries Ltd.) was established in the year 1972 as a fully owned subsidiary of NDDDB LTD. IDMC LTD is a large equipment Manufacturing and Engineering industry. IDMC LTD. also undertakes project execution, design and fabrication of plant and equipment for various industries like Pharmaceutical, Dairy processing, Food Processing, Brewery, Beverage and Allied Industries, Refrigeration, Cosmetics, Power.

Job profile

- Project marketing including Reactors, Fermenters, Bio-Rectors, Mixing Vessels, Water Storage Tanks, Pure Steam Generator/ WFI Stills, CIP and SIP Systems and Process piping required in Pharmaceutical and Chemical industry.
 - Designing the Vessels and submitting the techno- commercial offer as per the specifications
 - Techno-commercial discussion, Price negotiations
 - Documentation related to QA/QC, commercial terms and condition.
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2. Worked as a “**Chemical Engineer - Marketing**” in Wytewater Technologies PVT. LTD., Pune from 2002 to 2004.

About Organization

Wytewater technologies Pvt. Ltd. is the company established in the year 1999, is a Pune, India based company. Wytewater Technology is basically in to the water and wastewater treatment process. Company had invented a new technology called Photo Chemical Oxidation, which is used in most of the treatment processes like ETP, Coolant recovery system, Purified Water plant for Pharmaceutical Industries using RO and PCR, DM plant, etc.

Job profile

- Designing Marketing strategies for the newly invented technologies called Photo Chemical Oxidation used in various systems developed by Wytewater Technologies.
 - Designing the ETP plant, Sewage treatment / recycling plant, water softening plant as per the requirement of the clients.
 - Pilot plant as well as full scale demonstration of system to the potential clients to show them the working and its operation.
 - Focus on customer delight and relationship management.
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Invited Talks/Lectures/Seminars/Presentations- Delivered

- IPR lecture in the workshop for NEERI Staff at NEERI July., 2023
- Imparted training on 'E-waste Regulation and Management' on March 10,2022 in the CSIR-NEERI's Online Societal Skill / Training Program on "Municipal Solid and Hazardous Waste Management", March 14-16,2023.
- Imparted training on PMI program on "E-Waste Management" scheduled Nov. 16, 2021 in the Online Training Program for NTPC Ltd., Noida Nov., 2022.
- Delivered lecture on 'E-waste Regulation and Management' on March 9,2021 in the CSIR-NEERI's Online Societal Skill / Training Program on "Municipal Solid and Hazardous Waste Management", March 09-10,2021.
- Delivered invited talk on 'Recovery of Valuable Metal Copper from E-waste' in 'Entrepreneurship Development on E-waste Management' at CSIR-NML, Jamshedpur on March 14, 2019.
- Delivered invited talk on "NEERFLUSH and NEERSWACH a Low Cost Sanitation Technology" and Chaired session in the National Conference on "Sustainable Infrastructure Development and Management at VNIT, Nagpur on February 22, 2019.
- Delivered invited talk on 'E-waste Management and Recovery of Valuable Metal from E-waste' at Priyadarshini Institute of Engineering & Technology, Nagpur on September 16, 2019 on occasion of Engineer's Day.
- Delivered presentation on "Mosquitoes-Insects Killing Machine (MIKM) in the UNEP, 2019 workshop held at CSIR-NEERI, Nagpur.
- Presentation on 'NEERFLUSH' technology to the IIFM, Bhopal participant at NEERI, on December 18, 2017
- Invited to deliver Expert lecture "E-Waste Management", Jawaharlal Darda Institute of Engineering and Technology (JDIET) Yavatmal in August 3 2017.
- Presentation on E-waste on August 28, 2017 at NEERI Auditorium, Nagpur to School Students of various school
- Presentation on 'NEERFLUSH' to Technology Audit Committee on October 6, 2017 at NEERI.
- Invited Lecture at Rajiv Gandhi Engineering College, Nagpur on 'E-waste Management' on Sept, 21, 2017
- Invited talk on "E-waste Management" on Occasion of World Environment Day at Maharashtra State Power Generation CO. Ltd (MAHAGENCO) Koradi on June 6, 2016.
- Presentation on "Mechanical Automatic Urinal-Toilet Flusher" National Workshop on "Water and Wastewater-Sustainable Management" 27 & 28 March 2017 Jointly Organized by BDTT and CZC at Chennai.
- Presented paper on "An Effective Mosquitoes-Insects Killing Machine (MIKM)" in *6th International Conference on Solid Waste Management (IconsSWM)* 2016 at Jadavpur University Kolkata during Nov. 25-27, 2016.
- Presentation on "Energy: Explore, Harness and Conserve" in the Children Science Congress held at Gondia, Maharashtra on August 23, 2012.
- Lecture on "Environmental Problem: E-waste" at YGPMC, Nagpur in September, 2011.
- Presentation on "E-waste Management" at IIPA, New Delhi in 2009.
- Seminar on "Creating Impact and Building Brand Image" in Multi-skill Training Programme organized for Group 'D' staff at NEERI, Nagpur in 2009

Awards/Recognitions

- Member of the Technical Expert Committee of CPCB for the technical evaluation of technologies
- Awarded with 'IconSWM-Springer Excellence Paper Award 2018' at Vijayawada.
- Awarded with IconSWM 2015 Excellent Paper Award at 5th International Conference on Solid Waste Management at IISc, Bengaluru, 2015
- *India Science Channel of DST–Vigyan Prasar, New Delhi* showcased NEERI's COVID Mitigation measures- technologies 'NEERI's Hands Free Hand Washing point' and 'NEERJANTUK' in its COVID-19 Bulletin in both Hindi & English edition aired on May 3, 2020.
- Developed Sanitation technologies/know-now were included in the Technology Compendium of CSIR, New Delhi