DR. D. Y. PATIL BIOTECHNOLOGY & BIOINFORMATICS INSTITUTE
DR. D. Y. PATIL VIDYAPEETH, PUNE
(DEEMED UNIVERSITY)
(Re-Accredited by NAAC with a CGPA of 3.62 on four point scale at 'A'Grade)
An ISO 9001: 2008 Certified University

Name : **Dr. SWAPNIL C. GAIKWAD**

Designation : Assistant Professor

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Academic Qualifications:

- **Ph.D.** in Biotechnology under supervision of Professor M.K. Rai from Department of Biotechnology SGB Amravati University, Amravati, India.
Topic- *Fusarium* Mediated Synthesis of Silver Nanoparticles for the Development of Novel Antimicrobials.

- **M. Sc.** in Biotechnology (2008) from SGB Amravati University, Amravati (MS) India

- **B.Sc.** in Microbiology (2006) SGB Amravti University, Amravati (MS) India

Teaching Experience:

- **Assistant Professor** (October 2016- present): Dr. D. Y. Patil Biotechnology and Bioinformatics Institute, Dr. D. Y. Patil Vidyapeeth, Tathawade, Pune.

Lecturer (CHB) (2009-2010) - Department of Biotechnology, SGB Amravati University, Amravati and Bhartiya Collage of Science, Amravati.

Research Interest: Nanobiotechnology, Nanoantimicrobials, Green synthesis of nanoparticles

Awards and Fellowships:

1. **Post-Doctoral** fellowship (July 2015 - June 2016) on project "Nanoparticles Mediated Enzymatic Hydrolysis of Lignocellulosic Residues for Clean Sugar Production" at Biotechnology Department, Engineering School of Lorena, **University of Sao Paulo (EEL-USP) Brazil**.

2. International Travel Grant 2012 from **DST, New Delhi** for presentation in International conference **Colloids and Nanomaterials 2012,** at **Amsterdam, The Netherlands.**

3. **Junior Research Fellowship** (2009-2012) - "Mycosynthesis of Silver Nanoparticles for the Development of Novel Antimicrobials" funded by RGSTC (Maharashtra Govt.), Mumbai.

4. Research fellow (2008-2009) - INDO-BRAZIL Project "Screening of different *Fusarium* species for the synthesis of silver Nanoparticles" sponsored by DST, New Delhi.

5. **First prize** in presentation on "Optimization of Physical Parameters for Large Scale Mycosynthesis of Silver Nanoparticles" in **International Conference on Mycology and Plant Pathology Biotechnological approaches (ICMPB 2012)**. Banaras Hindu University, Varanasi (UP).

Trainings /Workshops/ Seminars/ Conferences:

1. II Workshop on Bioenergy, Renewable Energy and Green Building organized by Instituto de Pesquisaem Bioenergia (IPBEN) and Universidade Estadual Paulista (unesp), Guaratingueta, Brazil. (17 March, 2016).
2. International Conference on Colloids and Nanomaterials, organized by Elsevier at Amsterdam, The Netherlands (15-17 July 2012).
3. National Seminar, Trends in Nanobiotechnology organized by Department of Biotechnology SGB Amravati University, Amravati India (4 January 2013).
4. National Conference, Current Advances in Biotechnology and Annual Meeting of Society for Biotechnologist (India), organized by Department of Biotechnology SGB Amravati University, Amravati and Society for Biotechnologist (25-26 November, 2013).
5. International Conference on Mycology and Plant Pathology Biotechnological approaches (ICMPB 2012) Organized by Department of Botany, Banaras Hindu University, Varanasi (UP) India (27-29 Frb, 2012).
6. International Workshop on Advances in Disinfection Technologies organized by National Environmental Engineering Research Institute (NEERI), Nagpur (MS) India (9 February, 2011).
7. International Conference on Nanotechnology & Medical Science (ICNAMS-2010) organized by D.Y. Patil University, Kolhapur (MS) India (October 21-23, 2010).
8. Indo–Italian Workshop on Bacteria & Fungi For Environmental Sustainability November 29-30 & December 1, 2010 organized by Amity Institute of Microbial Technology Amity University, Noida (UP) India. Presentation Title- Mycosynthesis of Silver Nanoparticles and there Interaction with Human Pathogenic Bacteria.

Publications:

https://scholar.google.co.in/citations?hl=en&user=7sGcRt8AAAAJ

1. Pandit, R., **Gaikwad, S.,** Rai, M. (2016) Biogenic fabrication of copper nanoparticles, copper bioconjugates and *In vitro* assessment of antimicrobial and antioxidant activity. *IET Nanobiotechnology*. 10.1049/iet-nbt.2016.0165. (Impact Factor 1.5)
2. Rai, M., Pandit, R., **Gaikwad, S.,** Kovics, G. (2016) Antimicrobial Peptides as a Natural Bio-preservative to Enhance the Shelf life of Food.*Journal of Food Science Technology*. (Impact Factor 2.2)
3. Pinjarkar, H., **Gaikwad**, **S.,** Ingle, A.P., Gade, A.K., Rai, M.K. (2016) Phycofabrication of Silver Nanoparticles and their antibacterial activity against Human Pathogens. *Advanced Materials Letters* 7(12):1010-1014. DOI: 10.5185/amlett.2016.6269.
4. Rai, M.K., Santos, J.C., Soler, M.F., Marcelino, P.RF., Brumano, L.P., Ingle, A.P. **Gaikwad, S.C.**, Gade, A.K., Silva, S.S. (2016). Strategic Role of Nanotechnology for Production of Bioethanol and Biodiesel.*Nanotechnology Reviews*. 5(2): 231-250 (Impact factor 1.2).
5. Bhople, S., Deshmukh, S., **Gaikwad, S**., Bonde, S., Gade, A., Sen, S., Brezinska, A., Dahm, H., Rai, M. (2016). Myxobacteria -Mediated Synthesis of Silver Nanoparticles and Their Impregnation in Wrapping Paper used for Enhancing Shelf-life of Apple. *IETNanobiotechnology*.DOI:10.1049/iet-nbt.2015.0111. (Impact Factor1.5).
6. Tiwari, N., Pandit, R., **Gaikwad**, **S.,** Gade, A. Rai M. (2016). Biosynthesis of Zinc Oxide Nanoparticles by petals extract of Rosa indica L., its formulation as nail paint and evaluation of antifungal activity against fungi causing onychomycosis. *IET Nanobiotechnology*. (*Accepted*) (Impact Factor1.5).
7. Soares, LCSR., Chandel, A.K., Pagnocca, F.C., **Gaikwad**, **S.C.,** Rai, M.K., Silva, S.S. (2016).

Screening of Yeasts for Selection of Potential Strains and Their Utilization for *In Situ* Microbial Detoxification (ISMD) of Sugarcane Bagasse HemicellulosicHydrolysate.*Indian Journal of Microbiology*. 56(2): 172-18110.1007/s12088-016-0573-9 (Impact Factor 0.9)

8. Mane, PN., Moharil, MP., Satpute, NS., Thakare, SM., Giri, GK., **Gaikwad**, **S.C.**, Gade, AK., Rai, MK. Storage Stability and Performance of Aqueous and Dry Formulations of *Helicoverpa armigera* Nuclear Polyhedrosis Virus. *Journal of Biological Control*, 30(1), 34-39.
9. Potara, M., Bawaskar, M., Simon, T., **Gaikwad**, **S**., Licarete, E., Ingle, A., Banciu, M., Vulpoi, A.,Astilean, S.,Rai, M. (2015) Biosynthesized silver nanoparticles performing as biogenic SERS-nanotags for investigation of C26 colon carcinoma cells. *Colloids and Surfaces B: Biointerfaces*. 133:296-303. (Impact Factor 4.1)
10. Rai, M.K., Ingle, A.P., **Gaikwad**, **S.C.,** Padovani, F.H., Alves, M. (2015).The role of nanotechnology in control of human diseases: Perspectives in ocular surface diseases. *Critical Reviews in Biotechnology*.DOI:10.3109/07388551.2015.1036002 (Impact Factor 7.8).
11. Nagaonkar, D., **Gaikwad, S.**, Rai, M. (2015). *Catharanthus roseus* leaf-extract synthesized chitosan nanoparticles for controlled in vitro release of chloramphenicol and ketoconazole. *Colloids and Polymer Science*.DOI 10.1007/s00396-015-3538-3 (Impact Factor- 2.41).
12. Rai, M., Ingle, A., **Gaikwad, S.,** Gupta, I., Gade, A., da Silva, S. (2015).Nanotechnology Based Anti-infectives to Fight Microbial Intrusions. *Journal of Applied Microbiology*.DOI: 10.1111/jam.13010 (Impact Factor 2.4)
13. Rai, M.K. **Gaikwad, S.C.,** Nagaonkar, D., and dos Santos, C.A. (2015). Current Advances in Antimicrobial potential of *Ganoderma*spp. against human pathogenic microorganisms. *International Journal of Medicinal Mushroom.* 17(10): 921–932 (Impact Factor1.1).
14. Rai, M., Pandit, R., **Gaikwad, S.,** Yadav, A. and Gade, A. (2015). Potential Applications of Curcumin and Curcumin-nanoparticles: From Traditional Therapeutics to ModernNanomedicine. *Nanotechnology Reviews*.DOI: 10.1515/hsz-2015-0001(*online published*). (Impact Factor 1.2)
15. Pandit, R.S., **Gaikwad, S.C**., Agarkar, G.A., Gade, A.K. and Rai, M.K. (2015).Curcumin Nanoparticles: Physico-chemical Fabrication and its *in vitro* Efficacy Against Human Pathogens. *3 Biotech*. 5 (6), 991-997.
16. Mane, P.N., Satpute, N.S., Moharil, M.P. Thakare, S.M., **Gaikwad, S.C.**, Gade, A.K. Rai, M.K. (2015). Potency of Silver Nanoparticles (SNPs) as UV protectant for HaNPV. *Journal of Biological Control*. 29 (2), 94-97.
17. Kuralkar, M., Ingle,A., **Gaikwad, S.,** Gade, A., Rai, M. (2014). Gold nanoparticles: novel catalyst for the preparation of direct methanol fuel cell. *IETNanobiotechnology*. DOI.10.1049/iet-nbt.2014.0004 (Impact Factor 1.7).
18. Wrótniak–Drzewiecka, W., **Gaikwad**,**S.,** Laskowski, D., Dahm, H., Niedojadło, J., Gade, A. and Rai, M. (2014). Novel Approach towards Synthesis of Silver Nanoparticles from *Myxococcusvirescens*and their Lethality on Pathogenic Bacterial Cells. *Austin Journal of Biotechnology and Bioengineering*, 1(1), 7.
19. **Gaikwad, S.**, Ingle, A., Gade, A., Rai, M., Falanga, A., Incoronato, N., Russo, L.,Galdiero, S. and Galdiero, M. (2013). Antiviral activity of mycosynthesized silver nanoparticles against Herpes Simplex virus and Human Parainfluenza Virus Type 3. *International Journal of Nanomedicine*.8, 4303–4314 (Impact factor 4.19).
20. **Gaikwad**,**S.**, Birla, S., Ingle, A.,Gade, A.,Marcato, M.,Rai, M.and Duran, N. (2013). Screening of different *Fusarium* species to select potential species for the synthesis of silver nanoparticles.*Journal of Brazilian Chemical Society*.24 (12), 1974-1982 (Impact Factor 1.34).
21. Bansod, S., Bonde, S., Tiwari, V., Bawaskar, M., Deshmukh, S., **Gaikwad**, **S.,** Gade, A. and Rai. M. (2013). Bioconjugation of gold and silver nanoparticles synthesized by *Fusarium*

oxysporum and their use in rapid identification of Candida species by using Bioconjugate-Nano-PCR.*Journal of Biomedical Nanotechnology*. 9(12), 1962-1671(**Impact Factor 7.5**).

22. Birla, S., **Gaikwad**, **S.**, Gade, A., Rai, M**.** (2013).Rapid synthesis of silver nanoparticles from *Fusariumoxysporum* by optimizing Physico-cultural conditions.*The Scientific World Journal*, Volume 2013, Article ID 796018, 12 pages http://dx.doi.org/10.1155/2013/796018 (Impact Factor 1.2).
23. Gade, A., **Gaikwad**, **S**., Duran, N. and Rai, M.(2014).Green Synthesis of silver nanoparticles by *Phomaglomerata*.*Micron*.59, 52-59 (Impact Factor 2).
24. Gade, A., **Gaikwad**, **S**., Durán, N., Rai, M. (2013).Screening of different species of Phoma for Synthesis of Silver nanoparticles.*Biotechnology and Applied Biochemistry*, 60(5), 482-493 (Impact Factor 1.3).
25. Kanhed, P., Birla, S., **Gaikwad**, **S.,** Gade, A.,Seabra, A., Rubilar, O., Duran, N. and Rai, M. (2013). *In vitro*antifungal efficacy of copper nanoparticles against selected crop pathogenic fungi. *Material Letters*, 115, 13-17 (Impact Factor 2.26).
26. Gupta, A., Bonde, S., **Gaikwad**, **S.,** Ingle, A., Gade, A. and Rai, M. (2013). *Lawsoniainermis*-mediated Synthesis of Silver Nanoparticles: Activity against human pathogenic Fungi and bacteria with special reference to formulation of antimicrobial nanogel. *IET Nanobiotechnology*, 8(3), 172 – 178, doi.10.1049/iet-nbt.2013.0015 (Impact Factor 1.7).
27. Joshi, P., Bonde, S., **Gaikwad**,**S.,** Gade, A., Abd-Elsalam, K. and Rai, M. (2013).Comparative Studies on Synthesis of Silver Nanoparticles by *Fusarium oxysporum* and *Macrophomina phaseolina* and It's Efficacy Against Bacteria and *Malassezia furfur*. *Journal of Bionanoscience*, 7(4), 378-385.
28. Rai, M.,Gade, A.,**Gaikwad**,**S.,**Marcato, P. and Duran, N. (2012).Biomedical applications of Nanobiosensors: The state-of-the-art. *Journal of Brazilian Chemical Society*23(1): 14-24 (Impact Factor 1.34).
29. Sable, S., **Gaikwad**, **S.,** Bonde, S., Gade, A. and Rai, M. (2012). PhytofabricationOf Silver Nanoparticles By Using Aquatic Plant *Hydrilla verticilata*. *NUSANTARABioscience*, 6: 45-49.
30. Rai, M.,Karwa, A. and **Gaikwad, S**. (2011). Mycosynthesis of silvernanoparticles using *Ganodermalucidum*Karst.*International journal of medical mushrooms*,13(5): 483–491(Impact Factor 0.9).
31. Gudadhe, J.,Bonde, S., **Gaikwad**,**S.,** Gade, A. and Rai, M. (2011). *Phomaglomerata*: A novel agent for fabrication of iron oxide nanoparticles.*Journal of Bionanoscience*, 5: 138–142.
32. Gade, A., **Gaikwad**, **S**., Tiwari, V., Yadav, A., Ingle, A. and Mahendra Rai. (2010). Biofabrication of Silver Nanoparticles by *Opuntia ficus-indica*: *In vitro* Antibacterial Activity and Study of the Mechanism Involved in the Synthesis. *Current Nanoscience*, 6: 370-375 (Impact Factor 1.8).
33. Bawaskar, M., **Gaikwad**, **S.,** Ingle, A., Rathod, D., Gade, A., Duran,N. Marcato, P. and Rai, M. (2010). A New Report on Mycosynthesis of Silver Nanoparticles by *Fusarium culmorum*. *Current Nanoscience*, 6: 376-380 (Impact Factor 1.8).

Communicated Articles

1. **Gaikwad, S**., da Silva, S., Rai, M. (2016).A New and Cost-effective Immobilized Nanoparticles-Mediated Enzymatic Hydrolysis of Cellulose for Clean Sugar Production.
2. **Gaikwad S**., Birla, S., Ingle, A., Gade, A., Mourya, V., Charde, M., Baviskar, B., Rai, M. (2016) Evaluation of *In vivo* Wound Healing Activity of Mycosynthesized Silver Nano-gel on different Wound Model in Rats.

3. Gupta I., Ingle A., Birla S., Yadav A., Gaikawad S., Gade A., Rai M. and Duran N. (2016) Nanomedicine: Applications and Implications

Publications (Invited Book Chapters)

1. Rai, M., Ingle, A., Gupta, I., **Gaikwad**,**S.,** Gade, A., Rubilar, O., Duran, N. Cyto-GenoandEcotoxicity of Copper Nanoparticles. Nanotoxicology: In *Nanotoxicology Nanomedicine and Nanotoxicology* (Eds. Duran, N., Guterres, S., Alves, O) Springer, New York, 2014, pp 325-345.
2. Rai, M., Ingle, A., **Gaikwad, S.,** Gupta, I., Yadav, A., Gade, A. and Duran, N.Fungi: Myconanofactory, Mycoremediation and Medicine: In *Fungi: Applications and Management Strategies* (Eds. S.K. Deshmukh) CRC press, 2015, pp 201-219.
3. Gupta, I., **Gaikwad, S.,** Ingle, A.,Kon, K., Duran, N.,Rai, M. Nanotoxicity: a Mechanistic Approach. In *Biological and Pharmaceutical Applications of Nanomaterials* (Ed Prokopovich P.) CRC Press 2015, Pages 393–410.
4. Antunes, FAF., Santos, JC., Cunha, MAA., Sarrouh, B., Brumano, LP., Milessi, TSS., Terán-Hilares, R., Peres, GFD., Dussán, KJ., Silva, DBV., Dalli, SS., **Gaikwad, S.**, da Silva, SS. Biotechnological Production of Xylitol from Biomass: In Biofuels and Biorefineries (Eds. Profs. Fang, Smith and Qi). Springer International Publishing, 2017. (Accepted)
5. Rai, M. K., Ingle, A.P., **Gaikwad, S.,** Dussa´n K.M, and da Silva, S.S. Role of Nanoparticles in Enzymatic Hydrolysis of Lignocellulose in Ethanol: In Nanotechnology for Bioenergy and Biofuel Production (Eds Rai, Mahendra and da Silva, Silvio Silvério) Springer International Publishing 2017. (Accepted)
6. Antunes, FAF., **Gaikwad, S.C.,** Ingle, A.P., Pandit, R., dos Santos, J.C., Rai, M.K and da Silva, S.S. Bioenergy and Biofuels: Nanotechnological solutions for sustainable production: In Nanotechnology for Bioenergy and Biofuel Production (Eds Rai, Mahendra and da Silva, Silvio Silvério) Springer International Publishing 2017. (Accepted)

Patent

Development of antimicrobial silver nanoparticle dispersed gel for wound. Indian Patent Application No: 838/MUM/2014, Journal No. - 18/2014, Publication Date: 02/05/2014.

Technical Abstracts/Oral/Poster presentations out of India

1. International Conference on Colloids and Nanomaterials, organized by Elsevier at Amsterdam, The Netherlands (15-17 July 2012).
2. II Workshop on Bioenergy, Renewable Energy and Green Building organized by Instituto de Pesquisaem Bioenergia (IPBEN) and Universidade Estadual Paulista (unesp), Guaratingueta, Brazil. (17 March, 2016).
3. First meeting for Research Partnership EEL-USP and University of Bath 2016 at Engineering School of Lorena, University of Sao Paulo (EEL-USP) Brazil.

Technical Abstracts/Oral/Poster presentations in India

1. National Conference, Current Advances in Biotechnology and Annual Meeting of Society for Biotechnologist (India), organized by Department of Biotechnology SGB Amravati University, Amravati and Society for Biotechnologist (25-26 November, 2013).

2. International Conference on Mycology and Plant Pathology Biotechnological approaches (ICMPB 2012) Organized by Department of Botany, Banaras Hindu University, Varanasi (UP) India (27-29 Frb, 2012).
3. International Workshop on Advances in Disinfection Technologies organized by National Environmental Engineering Research Institute (NEERI), Nagpur (MS) India (9 February, 2011).
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5. Indo–Italian Workshop on Bacteria & Fungi For Environmental Sustainability November 29-30 & December 1, 2010 organized by Amity Institute of Microbial Technology Amity University, Noida (UP) India. Presentation Title- Mycosynthesis of Silver Nanoparticles and there Interaction with Human Pathogenic Bacteria.