

## Faculty Profile



**Name** : Dr. Aniket K Gade  
**Designation** : Assistant Professor  
**Department** : Biotechnology  
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**Qualifications : M.Sc., PhD, Post-doc (USA)**

**Areas of Interest/Specialization:** Bionanotechnology and Bioinformatics

**Experience : Teaching 17 Years,**

### **Awards & Honours:**

1. Seventh merit during the graduation.
2. Studentship for Advanced Diploma in Bioinformatics from the Department of Biotechnology, Government of India, 2001 – 2002.
3. INSA Summer Research Fellowship – 2008
4. Young Scientist Award – 2012 (In: National Conference on Mycodiversity with its Sustainable Exploration and Biotechnological Applications and 38th Annual Meeting of Mycological Society of India).
5. Young Scientist Award – 2012 (In: International Conference on Mycology and Plant Pathology Biotechnological Approaches).
6. Deputy Coordinator for UGC SAP-DRS-I (2012-2017)
7. International Award from Biotechnology Advances (Elsevier) – Top Cited Article 2009-2011.
8. Post-doctoral Raman Fellowship to visit USA for a year. (2013-2014)
9. Long Term ICMR-DHR international Fellowship for Young Bio-medical Scientists- 2019-20

### **International Collaboration/Consultancy :**

- 1) Prof. Anne Anderson, Department of Biology, Utah State University, Logan, UT-84341
- 2) Prof. Nelson Duran, Department of Chemistry, University of Campinas, Campinas, Brazil.
- 3) Prof. Susana Zacchino and Dr. Marcus Derita, Pharmacognosy Area Faculty of Biochemical and Pharmaceutical Sciences, Suipacha 531. National University of Rosario, Argentina.
- 4) Dr. Rikke Louise Meyer, Interdisciplinary Nanoscience Center - INANO-

**Research Publications (Last five Years):**

- 1) Dighade, R., Ingole, R., Ingle, P., **Gade, A.**, Hajare, S. and Ingawale, M., (2021). Nephroprotective effect of Bryophyllum pinnatum-mediated silver nanoparticles in ethylene glycol-induced urolithiasis in rat. *IET Nanobiotechnology*, 15(3), pp.266-276. ( **impact factor- 1.86**)
- 2) Shende, S., Bhagat, R., Raut, R., Rai, M. and **Gade, A.**, (2021). Myco-Fabrication of Copper Nanoparticles and Its Effect on Crop Pathogenic Fungi. *IEEE Transactions on NanoBioscience*, 20(2), pp.146-153. ( **impact factor- 2.791**)
- 3) Rai, M., Bonde, S., Golinska, P., Trzcińska-Wencel, J., **Gade, A.**, Abd-Elsalam, K., Shende, S., Gaikwad, S. and Ingle, A., 2021. Fusarium as a novel fungus for the synthesis of nanoparticles: mechanism and applications. *Journal of Fungi*, 7(2), p.139. ( **impact factor- 4.838**)
- 4) Shende, S., Rajput, V., **Gade, A.**, Minkina, T., Sushkova, S.N., Mandzhieva, S.S. and Boldyreva, V.E., (2021). Metal-based Green Synthesized Nanoparticles: Boon for Sustainable Agriculture and Food Security. *IEEE Transactions on NanoBioscience*. ( **impact factor- 2.791**)
- 5) Rai, Mahendra; Bonde, Shital; Yadav, Alka; Bhowmik, Arpita; Rathod, Sanjay; Ingle, Pramod; **Gade, Aniket**. (2021). "Nanotechnology as a Shield against COVID-19: Current Advancement and Limitations" *Viruses* 13, no. 7: 1224. <https://doi.org/10.3390/v13071224> ( **impact factor- 3.816**)
- 6) Bawaskar, M., Bansod, S., Rathod, D., dos Santos, C.A., Ingle, P., Rai, M., and **Gade, A.**. (2021)" Silver Nanoparticles as Nanofungicide and Plant Growth Promoter: Evidences from morphological and Chlorophyll 'a' fluorescence analysis". *Advance Material Letters* (Accepted Manuscript)
- 7) Jahagirdar, A.S., Shende, S., **Gade, A.** and Rai, M., (2020). Bioinspired synthesis of copper nanoparticles and its efficacy on seed viability and seedling growth in mungbean (*Vigna radiata* L.). *Current Nanoscience*, 16(2), pp.246-252..(**impact factor- 1.586**)
- 8) Jadhao, A.D., Shende, S., Ingle, P., **Gade, A.**, Hajare, S.W. and Ingole, R.S., 2020. Biogenic Synthesis of Zinc Oxide Nanoparticles by *Bryophyllum pinnatum* and its Acute Oral Toxicity Evaluation in Wistar Rats. *IEEE Transactions on NanoBioscience*, 19(4), pp.633-639. ( **impact factor- 2.791**)
- 9) Rai, M., **Gade, A.**, Zimowska, B., Ingle, A.P., Ingle, P. (2020). Harnessing the potential of novel bioactive compounds produced by endophytic *Phoma* spp. – biomedical and agricultural applications. *Acta Sci. Pol. Hortorum Cultus*, 19(6), 31–45. DOI: 10.24326/asphc.2020.6.3 ( **impact factor- 0.71**)

- 10) Shende, S., Rajput, V., Ingle, A.P., **Gade, A.**, Minkina, T. and Rai, M., (2020). Synthesis of Copper Nanomaterials by Microbes and Their Use in Sustainable Agriculture. In *Microbial Nanotechnology* (pp. 256-287). CRC Press.
- 11) Shende, S., Rajput, V., **Gade, A.**, Minkina, T., Rai, M. and Singh, S.P., (2020). Impact of Nanomaterials on Human Health through/via Food Chain. In *Intellectual Property Issues in Nanotechnology* (pp. 211-246). CRC Press.
- 12) Rai, M., Ingle, A.P., Gupta, I., Pandit, R., Paralikar, P., **Gade, A.**, Chaud, M.V. and dos Santos, C.A., (2019). Smart nanopackaging for the enhancement of food shelf life. *Environmental Chemistry Letters*, 17 (1), 277-290. **(impact factor- 5.922)**.
- 13) Shende, S., **Gade, A.** and Rai, M., (2019). A Novel Nanoplex Mediated Plant Transformation Approach. *IET Nanobiotechnology*. 13 (6), 606 -616. **(impact factor- 1.925)**
- 14) Padghan, P.P., Pande, V.D., Ingle, P.U., Sen, S.S., **Gade, A.K.** and Alti, K.M., (2019). Measurement of nanoscale surface roughness using electronic speckle pattern interferometer. In AIP Conference Proceedings (Vol. 2100, No. 1, p. 020062). AIP Publishing
- 15) Rai, M., **Gade, A.**, Zimowska, B., Ingle, A.P. and Ingle, P., (2018). Marine-derived Phoma—the gold mine of bioactive compounds. *Applied microbiology and biotechnology*, 102(21), pp.9053-9066. **(impact factor- 3.670)**.
- 16) Rai, M., **Gade, A.**, Ingle, A.P., Gupta, I., Pandit, R. And Dos Santos, C.A., (2018). Nanotoxicity to Agroecosystem: Impact on Soil and Agriculture. *Emerging Trends in Agri-nanotechnology: Fundamental and Applied Aspects*, p.102.
- 17) Tiwari, N., Pandit, R., Gaikwad, S., **Gade, A.**, and 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*, 11(2), 205-211. **(impact factor- 1.925)**.
- 18) Suryavanshi, P., Pandit, R., **Gade, A.**, Derita, M., Zachino, S., and Rai, M. (2017). Colletotrichum sp.-mediated synthesis of sulphur and aluminium oxide nanoparticles and its in vitro activity against selected food-borne pathogens. *LWT-Food Science and Technology*, 81, 188-194. **(impact factor- 2.32)**
- 19) Shende, S., **Gade, A.**, and Rai, M. (2017). Large-scale synthesis and antibacterial activity of fungal-derived silver nanoparticles. *Environmental Chemistry Letters*, 15(3), 427-434. **(impact factor- 5.922)**
- 20) Rajak, J., Bawaskar, M., Rathod, D., Agarkar, G., Nagaonkar, D., **Gade, A.**, and Rai, M. (2017). Interaction of copper nanoparticles and an endophytic growth promoter *Piriformosporaindica* with *Cajanuscajan*. *Journal of the Science of Food and Agriculture*, 97(13), 4562-4570. **(impact factor- 2.46)**

- 21) Shende, S., Rathod, D., **Gade, A.**, and Rai, M. (2017). Biogenic copper nanoparticles promote the growth of pigeon pea (*Cajanuscajan L.*). *IET Nanobiotechnology*, 11(7), 773-781 **(impact factor- 1.46)**.
- 22) Mane PN, Moharil MP, Satpute NS, Thakare SM, Giri GK, **Gade AK.**(2017) Bacterial contaminants associated with HaNPV. *Indian Journal of Entomology*. 79(2):223-6.
- 23) Rai M, Ingle A, Gaikwad S, Gupta I, **Gade A**, da Silva SS (2016). Nanotechnology based anti-infectives to fight microbial intrusions. *Journal of Applied Microbiology*, 120 (3), 527- 542. **(impact factor - 3.066)**.
- 24) Wright M, Adams J, Yang K, McManus P, Jacobson A, **Gade A**, et al. (2016) A Root Colonizing Pseudomonad Lessens Stress Responses in Wheat Imposed by CuO Nanoparticles. *PLoS ONE* 11(10): e0164635. doi:10.1371/journal.pone.0164635 **(impact factor -3.05)**.
- 25) **Gade A**, Adams J, Britt DW, Shen FA, McLean JE, Jacobson A, Kim Y-C, Anderson A J (2016) Ag nanoparticles generated using bio-reduction and-coating cause microbial killing without cell lysis *BioMetals*, 29 (2), 211-213 .doi:10.1007/s10534-015-9906-0. **(impact factor - 2.503)**.
- 26) Bramhanwade KS, Shende S, Bonde S, **Gade A** and Rai M (2016). Fungicidal activity of Cu nanoparticles against Fusarium causing crop diseases, *Environ ChemLett*, 14 (2), 229-235.**(impact factor 5.922)**.
- 27) Rai, M. K., Santos, J.C., Soler, M.F., Marcelino, P.R.F., Brumano, L. P., Ingle, A. P., Gaikwad, S., **Gade, A. K.**, and da Silva, S.S. (2016) Strategic role of nanotechnology for production of bioethanol and biodiesel, *Nanotechnology Reviews*, 5(2), 231-250. DOI: 10.1515/ntrev-2015-0069. **(impact factor- 3.639)**
- 28) Bhole., Gaikwad, S., Deshmukh, S., Bonde., **Gade, A. K.**, Sen, S., ; Brezinska A., Dahm., and Rai, M. (2016). Myxobacteria Mediated Synthesis of Silver Nanoparticles and Their Impregnation in Wrapping Paper used for Enhancing Shelf-life of Apples, *IET Nanobiotechnology*, DOI: 10.1049/iet-nbt.2015.0111. **(impact factor- 1.50)**
- 29) Pinjarkar, H., Gaikwad, S., Ingle, A. P., **Gade, A. K.**, and Rai, M. (2016) Phycofabrication Of Silver Nanoparticles And Their Antibacterial Activity Against Human Pathogens, *Advance Material Letters*, 7(12), 1010-1014 **(impact factor- 1.90)**.
- 30) Mane, P., Moharil, M., Satpute, N., Thakare, S., Giri, G., Gaikwad, S., **Gade, A.**, and Rai, M. (2016). Storage Stability and Performance of Aqueous and Dry Formulations of Helicoverpaarmigera Nuclear Polyhedrosis Virus.. *Journal of Biological Control*, 30(1), 34-39.
- 31) Rai M, Ingle A, Gaikwad S, Gupta I, Yadav A, **Gade A** and Duran N (2016). Fungi: Myconanofactory, Mycoremediation and Medicine, In: *Fungi and their Applications under the series of Progress in Mycological Research* (Eds: S.K. Deshmukh, J. K. Misra, J. P. Tiwari and T. Papp), CRC press USA .pp 201-219.
- 32) Rai, M. Kon, K. **Gade, A.** Ingle, A. Nagaonkar, D. Paralikar, P. and da Silva, S.S. (2016). Antibiotic resistance: can nanoparticles tackle the problem? In: Antibiotic Resistance

Mechanisms and New Antimicrobial approaches , (Eds:K. Kon and M.K. Rai). Elsevier, pp 121-143.

- 33) Kuralkar, M., Ingle, A., Gaikwad, S., **Gade, A.** and Rai, M. (2015). Gold Nanoparticles : novel catalyst for the preparation of direct methanol fuel cell. *IET Nanobiotechnology*9(2), 66-70.(**Impact Factor – 1.72**).
- 34) Rai, M., Ingle, A., **Gade, A.** and Duran, N. (2015). Synthesis of silver nanoparticles by *Phomagardeniae* and in vitro evaluation of their efficacy against human disease-causing bacteria and fungi. *IET Nanobiotechnology* 9(2), 71-75. (**Impact Factor – 1.72**).
- 35) ShendeS, IngleAP, **Gade A,** and Rai M (2015).Green synthesis of copper nanoparticles by Citrus medica Linn.(Idilimbu) juice and its antimicrobial activity. *World Journal of Microbiology and Biotechnology.* 31 (6), 865-873. (**Impact Factor – 1.779**).
- 36) BawskarM, DeshmukhS, BansodS, **Gade A,**and RaiM (2015).Comparative analysis of biosynthesised and chemosynthesised silver nanoparticles with special reference to their antibacterial activity against pathogens. *IET Nanobiotechnology,* 9 (3), 107-113. (**Impact Factor – 1.72**).
- 37) RaiM, IngleAP, **Gade AK,** DuarteMCT, and DuranN (2015)Three *Phoma* spp. synthesised novel silver nanoparticles that possess excellent antimicrobial efficacy. *IET Nanobiotechnology,* 9 (5), 280-287 (**Impact Factor – 1.72**).
- 38) RaiM, PanditR, GaikwadS, YadavA, and **Gade A** (2015).Potential applications of curcumin and curcumin nanoparticles: from traditional therapeutics to modern nanomedicine. *Nanotechnology Reviews,* 4(2), 161-172.(**Impact Factor – 3.639**)
- 39) Bansod SD, Bawaskar MS, **Gade AK,** and RaiMK (2015).Development of shampoo, soap and ointment formulated by green synthesised silver nanoparticles functionalised with antimicrobial plants oils in veterinary dermatology: treatment and prevention strategies.*IET Nanobiotechnology.* 9 (4), 165-171 (**Impact Factor – 1.72**).
- 40) Mane, P., Satpute, N., Moharil, M., Thakare, S., Gaikwad, S., **Gade, A.,**and Rai, M. (2015). Potency of Silver Nanoparticles (SNPs) as UV protectant for HaNPV. *Journal of Biological Control,* 29(2), 94-97.
- 41) Rai, M., Bansod, S., Bawaskar, M., **Gade, A.,**CarolinaAlves dos Santos, Seabra, A. B., and Duran, N. (2015). Nanoparticles-Based Delivery Systems in Plant Genetic Transformation. *In :Nanotechnologies in Food and Agriculture.* Rai et al (eds.) Springer International Publishing Switzerland. pp 209-239.

Scholar google : [https://scholar.google.co.in/citations?user=Ac\\_tst0AAAAJ&hl=en](https://scholar.google.co.in/citations?user=Ac_tst0AAAAJ&hl=en)

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**Total Publications: International : 77**  
**National : 07**  
**Book Chapter : 18**

### **Patents Filed National- 2, International-1**

#### **Visits :**

- 1) Visited Department of Biological Chemistry, University of Campinas, Brazil from 6<sup>th</sup> to 21<sup>st</sup> Feb.,2011 under Indo - Brazil collaborative Research Project.
- 2) Visited Biology Department, Utah State University, Old Main Hill, Logan UT- 84341. For post-doctoral Research work. (Sept., 2013 to Sept., 2014).

#### **Promotion of research:**

- Ph.D. Awarded -01, Registered -02
- M.Sc. Dissertations- 28

#### **Sequences submitted to NCBI databases**

##### **ITS Sequences submitted to NCBI Databases ([www.ncbi.com](http://www.ncbi.com)) - 34**

Brinjal (*F. equiseti*-FR853147), Tomato(*F. equiseti*-FR872726), Papaya-1(*F. equiseti* - FR872727), Papaya-2 (*F. equiseti*-FR872728), Ladies Finger (*F. equiseti*-FR872729), Papaya-3 (*F. equiseti*-HE616550), Beet-1(*F. equiseti*- HE616552), Banana-1(*F. proliferatum*-FR853146), Rice (*F. acuminatum*-FR872730), Orange (*F. acuminatum*- HE616557), Banana-2 (*F. equiseti*-HE616551), MTCC 6660 (*F. moniliforme*- FR7509223), Dodka (*F. moniliforme*-HE616556), MTCC 2088 (*F. moniliforme*- FR750927), Cucumber (*F. lacertarum*- HE616554), Lemon (*F. semitectum*- HE616555), Wheat (*F. semitectum*-HE616553), MTCC 349 (*F. culmorum*- FR749708), MTCC 7375 (*F. sporotrichioids*-FR750924), MTCC 1755 (*F. oxysporum*-FR750926), MTCC 636 (*F. lateritium*-FR750925), Carrot 1 (*F. equiseti*-HE800135), Carrot 2 (*F. equiseti*-HE800136), Banana 3 (*F. equiseti*-HE800137), Banana 4 (*F. acuminatum*-HE800138), Onion (*F. moniliforme*-HE800139), Jamun (*F. acuminatum*-HE800140), Cotton (*F. chlamyosporum*-HF570009),Custard(*F. solani*- HF570010), Jowar (*F. thapsinum*-HF566402), Potato 2 (*F. equiseti*-HF570011), Brinjal 2 (*F. moniliforme*-HF570008),Potato1 (*F. oxysporum*-HF566400), Beet-2 (*F. oxysporum* - HF566401).

## Ongoing/ Completed projects

Project Title	Project Cost (Rs.)	Sponsoring Organization
1) Rapid identification and evolutionary relationship of selected Indian species of Phoma by using RAPD-PCR and ITS-rDNA sequencing (Co-PI)	8,35,800/-	UGC, New Delhi
2) Biosynthesis of silver Nanoparticle by using different Phomasp (PI)	90,000/-	UGC New Delhi
3) Screening of different Fusarium species for synthesis of silver nanoparticles and their potential for development of novel antimicrobial agents”(Co-PI)	11,47,000./-	DST New Delhi
4) Diversity of Endophytic Fungi in Selected Medicinal Plants of MelghatForest (Co-PI)	16,55,000/-	Dept. of Environment and Forest, New Delhi
5) Exploitation of plant pathogens for the mycosynthesis of silver nanoparticles for the development of novel antimicrobial (Co-PI)	32,20,000/-	Rajiv Gandhi S & T Commission, Govt. of Maharashtra, Mumbai
6) Rapid detection of toxigenic species of Fusarium secreting T-2 toxin(Co-PI)	15,00,000/-	DRDO New Delhi
7) Synthesis, characterization and Bio-conjugation of nanoparticles and their utilization as a vehicle for gene transfer.(Co-PI)	89,50,000/-	DST, Nano mission, New Delhi.
8) Theme area “Nanobiotechnology” UGC-SAP DRS	48,00,000	UGC
9)Biosynthesis of silver nanoparticles, their nano-functionalization by essential oils and evaluation of activity against multi-drug resistance microbes leading to formulation of antimicrobials” (Co-PI)	11,94,000	DST, New Delhi (Indo-Argentina Collaborative project)
10) Extraction and Evaluation of Potent Natural Products of Medicinal Plants of Melghat Forest for Blocking Viral Enzymes (Co-PI)	42,20,000/-	Rajiv Gandhi S & T Commission, Govt. of Maharashtra, Mumbai

( Dr. Aniket K. Gade)