

What Research and development initiatives have you undertaken in the last one year?

- I am working on the various research aspects of Medicinal Mushrooms, Endophytic fungi and Mycorrhiza from western ghats of India.
- I have also developed new protocols for the myogenic synthesis of fungi and their potent applications in agriculture and health sector and published articles for the same.
- I have also granted patent on Medicinal mushroom-based feed and their performance in health of poultry and animals.
- One more patent has been published during this year on Development Of Mercury Ion Detection Sensor Using Field Effect Transistor In Waste Water.
- I have published 7 research articles in International journal and innovative methods of endophytes and nanotechnology.
- I have applied for the 2 research projects of DST-SERB TARE scheme and ASPIRE SPPU Pune, the results are awaited but the proposal are under evaluation stage.
- Local newspaper published our research work and recognized us for the same. The three book chapters are accepted on the fungi and they will publish in the coming month.
- I have presented my work in the international conferences
 - Presented paper at International Conference on ‘Climate Change, Mangroves and Sustainable Management’ at IQAC & PG-Department of Botany of Shri Pancham Khemraj Mahavidyalaya, Sawantwadi, (MS) University of Mumbai, Mangrove Society of India & Sahyadri Botanical Society, Kolhapur 24th April, 2020.
 - Presented paper at International conference on recent trends in plant sciences paper entitled” Antioxidant potential of compounds from endophytic fungi of Mangroves” at Agarwal Science college Navapur, 15.05.2020.
- I have given invited talk on research work at:
 - Invited talk at National webinar Recent trends In Plant sciences at Waghire College Saswad, 24th March 2021.
 - Invited talk at Dept of Botany Telangana University Nizamabad, 12th April 2021 on Future Fungi.

- Invited talk at PG Research Centre in Botany, Dept of Botany New Arts Commerce and Science College, Parner, Ahmednagar 06th May 2021 on Plant – Microbe Interaction.
- Invited talk at State Level Workshop Biodiversity and Sustainable Development organized by Rayat Shikshan Sanstha Dr. Patangrao Kadam College, Ramanandnagar (Burla) College, 27th May 2021 on Fungal Biodiversity.
- Three PhD research students are working under my guidance on the various aspects of Medicinal mushroom, Endophytic fungi and their applications.

1. Mr. Sagar Palwe (NET CSIR) is working on the Metabolite isolated from Endophytic fungi of anticancerous plants.

2. Mr. Sunil Bhagat (NET CSIR) is working for his Ph.D. degree on "Wood Rotting Fungi from Madhe Ghat". We have collected about 50 specimens, amongst these 40 species were identified based on their morphology, while few were studied for cultural behavior and Molecular phylogeny.

3. Mr. Manohar Gawit (NET) is working on Molecular phylogeny and Morphology of Aphyllphorales from Dang forest of Western Ghats of Maharashtra.

- Working as **Guide for PG Dissertation Project** (M. Sc Botany) for students of Fergusson College, Pune and Prof. Ramkrishna More College, Akurdi Pune.

Research Publications.

Author's Name	Title	Name of Journal	Vol	Pg.	Year
Sonawane, H., Arya, S., Math, S. et al.	Myco-synthesized silver and titanium oxide nanoparticles as seed priming agents to promote seed germination and seedling growth of <i>Solanum lycopersicum</i> : a comparative study	International Nano Letters	27	10	2021
Palwe SD, Borde MY and Sonawane	Endophytic fungi: a source of potential anticancer compounds	Studies in Fungi	6(1)	188	2021

HB					
H Sonawane, S Arya, V Ghole, K Apte, D Shelke, M Chaskar	Hypoglycemic and anticataract activity of crude exopolysaccharides of medicinal mushroom <i>Phellinus badius</i> on streptozotocin-induced diabetic rats and goat eye lenses respectively.	Bioactive Carbohydrates and Dietary Fibre	24	100-241	2020
S Arya, H Sonawane, S Math, P Tambade, M Chaskar, et al.	Biogenic titanium nanoparticles (TiO ₂ NPs) from <i>Trichoderma citrinoviride</i> extract: synthesis, characterization and antibacterial activity against extremely drug-resistant <i>Pseudomonas aeruginosa</i> .	International Nano Letters	11	35-42	2020
Sonawane HB, Borde MY, Nikalje GC, Terkar A, Math SK.	HR-LC-MS based metabolic profiling of <i>Fusarium solani</i> a fungal endophyte associated with <i>Avicennia officinalis</i> .	Current Research in Environmental & Applied Mycology (Journal of Fungal Biology)	10(1)	26-273	2020
Sonawane HB	Bioactive Metabolites with Pharmacological Potential from Medicinal Mushrooms	International J of biology, Pharmacy and allied sciences	9(2)	11-26	2020
S Math, H Sonawane, V Patil, S Arya and AAde	Plant resistance strategies against the viral pathogens	Eco. Env. & Cons.	26(4)	17-1720	2020

- **Books/Reports/Chapters/General articles etc.**

Sr. No.	Title	Author's Name	Publisher	Year
1.	Mycosynthesis of nanoparticles and their potential application in pharmaceutical bioprocessing	Deepak Shelke, Mahadev Chambhare, Hiralal Sonawane	Springer, Nanotechnology in the Life Sciences (Accepted)	2021
2.	Fungal Endophytes: potential benefits of their future use in plant stress tolerance and agriculture	Deepak Bhaskar Shelke, Mahadev R. Chambhare, Hiralal Sonawane	Springer Nature, Beneficial Microorganisms in Agriculture (Accepted)	2021
3.	Medicinal Fungi: A Natural Source of Pharmacologically Important Metabolites.	Ganesh Kawashte, Hiralal Sonawane, Smriti Mittal, and Mahesh Borde	Springer Nature, R. Prasad et al. (eds.), Recent Developments in Microbial Technologies, Environmental and Microbial Biotechnology, https://doi.org/10.1007/978-981-15-4439-2_18	2021
4.	Phansomba: an Indian Herbal folk medicine	Hiralal Sonawane J. G. Vaidya, Bhosle S.R, Bapat Gauri,	Recent progress in Medicinal Plants, Drug Plants I, Studium Press, Edition 27	2009

- **List of Projects Completed:**

S. No.	Title	Cost in lakhs	Month of submission	Role as PI / Co-PI	Agency	Status
1.	Isolation and Characterization of secondary metabolites from Endophytic fungi isolated from Mangrove	165000.00	March 2017	PI	Board of College and University Development, Savitribai Phule Pune University	Completed

Innovation techniques implemented in Teaching and learning process:

- I have use online teaching resources for the teaching purposes like videos, Animated video, PPT's etc.
- Google suit used by me for teaching process, Google classroom, Google Meet etc.
- I have made some new topics presentation and uploaded it on Savitribai Phule Pune University Pune, Maharashtra Website for the all students of university.
- I have used Virtual classroom for teaching purposes.
- Due to pandemic situation, Virtual tours are organized for the students.
- I have used Edmodo for the evaluation purposes.
- I have made video of Practical's in Botany for the students.
- I have organized online PhD course work for research students in Botany.
- I have made econtent courses material.

पेटेंट कार्यालय
शासकीय जर्नल

**OFFICIAL JOURNAL
OF
THE PATENT OFFICE**

निर्गमन सं. 16/2021
ISSUE NO. 16/2021

शुक्रवार
FRIDAY

दिनांक: 16/04/2021
DATE: 16/04/2021

पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202121015867 A

(19) INDIA

(22) Date of filing of Application :03/04/2021

(43) Publication Date : 16/04/2021

(54) Title of the invention : DEVELOPMENT OF MERCURY ION DETECTION SENSOR USING FIELD EFFECT TRANSISTOR IN WASTE WATER

<p>(51) International classification</p> <p>(31) Priority Document No</p> <p>(32) Priority Date</p> <p>(33) Name of priority country</p> <p>(86) International Application No</p> <p>Filing Date</p> <p>(87) International Publication No</p> <p>(61) Patent of Addition to Application Number</p> <p>Filing Date</p> <p>(62) Divisional to Application Number</p> <p>Filing Date</p>	<p>(71)Name of Applicant :</p> <p>1)Dr. Narayan Dattatraya Totewad,B. K. Birla College of Arts, Science & Commerce (Autonomous) Address of Applicant :Department of Microbiology, B. K. Birla College of Arts, Science & Commerce (Autonomous), Affiliated to University of Mumbai, Gauripada, Kalyan, Mumbai Maharashtra India 421304 Maharashtra India</p> <p>2)Miss. Tejaswini Ramchandra Marakwad,Shri Pundlik Maharaj Mahavidyalaya</p> <p>3)Dr. Anita Margret,Bishop Heber College</p> <p>4)Dr. Vinda Manjramkar,B. N. Bandodkar College of Science (Autonomus)</p> <p>(72)Name of Inventor :</p> <p>1)Dr. Narayan Dattatraya Totewad,B. K. Birla College of Arts, Science & Commerce (Autonomous)</p> <p>2)Miss. Tejaswini Ramchandra Marakwad,Shri Pundlik Maharaj Mahavidyalaya</p> <p>3)Dr. Anita Margret,Bishop Heber College</p> <p>4)Dr. Vinda Manjramkar,B. N. Bandodkar College of Science (Autonomus)</p> <p>5)Dr. A. R. Bhusnar,Yeshwantrao Chavan Warana Mahavidyalaya</p> <p>6)Dr. Prakash Pralhad Sarwade,Shikshan Maharshi Guruvarya R. G. Shinde Mahavidyalaya</p> <p>7)Dr. Yuvraj Dhondiram Kengar,Smt. Kusumtai Rajarambapu Patil Mahavidyalaya</p> <p>8)Dr. Deepak Bhaskar Shelke,Amruteshwar Arts, Commerce & Science College</p> <p>9)Hiralal Bhaskar Sonawane,Prof. Ramkrishna More Arts, Commerce and Science College</p> <p>10)Dr. Anand Arunrao Atnoorkar,Vai. Dhunda Maharaj Degloorkar College</p> <p>11)Dr. Rafik U. Shaikh,Poona College of Art's, Science and Commerce</p> <p>12)Mrs A.Sherlin Rosita,Bishop Heber College</p>
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(57) Abstract :

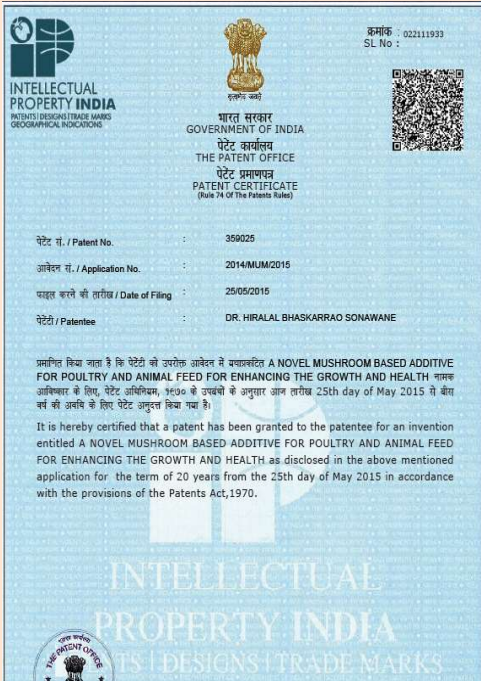
Growth of industries leads to financial flourishing but is accompanied by serious environmental pollution by deposition of heavy metals. The waste water from industries comprises of considerable amount of heavy metals especially mercury, which is absorbed by human beings causing serious nervous disorder leading to physical tremors, memory loss, anxiety and irritation. This invention proposes a novel sensor for the detection of mercury ions from waste water using Heterostructure Field Effect Transistor, which is a high electron mobility transistor. The proposed sensor is robust and portable, able to detect Hg²⁺ when in contact with solutions with different concentrations of Hg²⁺. This sensor has a detection limit below 10⁻⁸ M with a linear response range between 10⁻⁸ M to 10⁻⁴ M. The sensing membrane of the sensor is reversible as confirmed by X-ray photoelectron spectroscopy such that the sensor is reusable by rinsing with deionised water. Hence the proposed sensor is effective in detection of mercury ions from industrial waste water alarming the serious effects of heavy metals to the environment.

No. of Pages : 11 No. of Claims : 6

Research Outcomes

Dr. Hiralal Bhaskar Sonawane

**Research Coordinator
PG Research Centre in Botany
Prof. Ramkrishna More Arts
Commerce and Science College
Akurdi, Pune, Maharashtra**



Medicinal Fungi: A Natural Source of Pharmacologically Important Metabolites

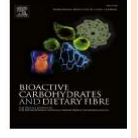
Ganesh Kawashte, Hiralal Sonawane, Smriti Mittal, and Mahesh Borde

Environmental and Microbial Biotechnology
Ram Prasad Vivek Kumar, Joginder Singh, Chandrama Prakash Upadhyaya Editors

Recent Developments in Microbial Technologies



Contents lists available at ScienceDirect
Bioactive Carbohydrates and Dietary Fibre
 journal homepage: <http://www.elsevier.com/locate/bcdf>



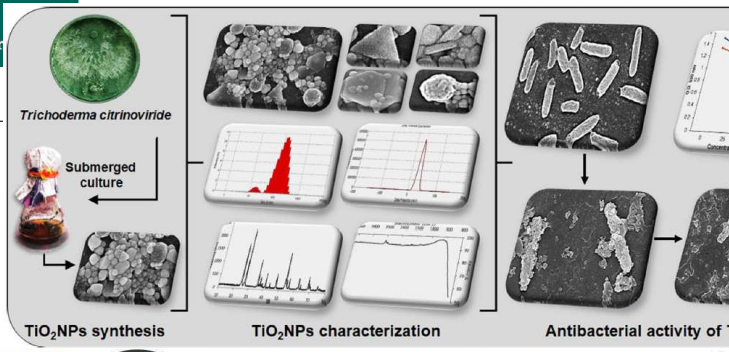
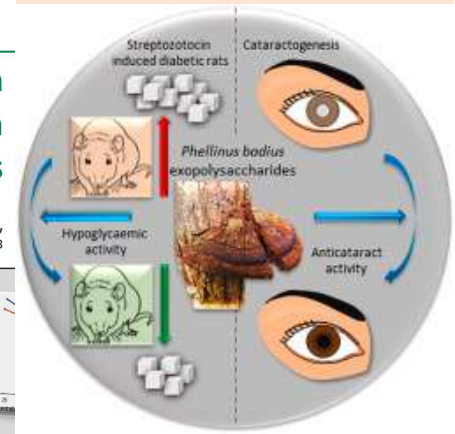
Hypoglycemic and anticataract activity of crude exopolysaccharides of medicinal mushroom *Phellinus badius* on streptozotocin-induced diabetic rats and goat eye lenses respectively

Hiralal Sonawane^{a,*}, Sagar Arya^{b,c}, Vikram Ghole^d, Kishori Apte^e, Deepak Shelke^f, Manohar Chaskar^{a,g}

JOURNAL OF NATURAL REMEDIES

Hypoglycemic Effect of Phansomba (*Phellinus Badius* Berk Ex Cooke) G. Cunn. on Alloxan-induced Diabetic Rats

Hiralal B. Sonawane^{1*}, Ghole V. S¹, Sandhya Garad¹, Gauri Bapat¹, Shekhar Bhosle², Kishori Apte³



International Nano Letters
<https://doi.org/10.1007/s40089-020-00320-y>
ORIGINAL ARTICLE

Biogenic titanium nanoparticles (TiO₂NPs) from *Trichoderma citrinoviride* extract: synthesis, characterization and antibacterial activity against extremely drug-resistant *Pseudomonas aeruginosa*

Sagar Arya¹, Hiralal Sonawane², Siddharam Math², Popat Tambade³, Manohar Chaskar⁴, Dnyaneshwar Shinde⁴

Journal of Phytology 2011, 3(6): 35-37
 ISSN: 2075-6240
www.scholarjournals.org

JOURNAL OF PHYTOLOGY
www.journal-phytology.com



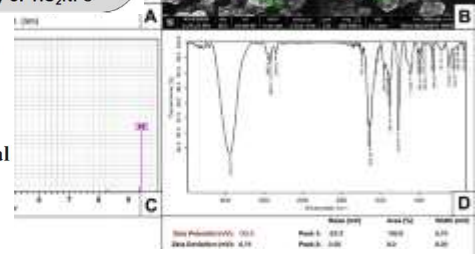
Current Research in Environmental & Applied Mycology (Journal of Fungal Biology)
 10(1): 262-273 (2020)
www.creamjournal.org
Article
 Doi 10.5943/cream/10/1/25

In vitro Evaluation of Sesquiterpenoid Extracts of *Phellinus* Samples from Western Ghats of Maharashtra for Antimicrobial Activity

Hiralal Sonawane^{1*}, Shekhar Bhosle², Jitendra Vaidva¹, Asghar sharifi¹, Sandhya Garad¹, Gauri Bapat¹, Muadha Belsare¹

HR-LC-MS based metabolic profiling of *Fusarium solani* a fungal endophyte associated with *Avicennia officinalis*

Sonawane HB^{1*}, Borde MY², Nikalje GC³, Terkar A², Math SK¹



(12) PATENT APPLICATION PUBLICATION

(21) Application No.202121015867 A

(19) INDIA

(22) Date of filing of Application :03/04/2021

(43) Publication Date : 16/04/2021



Studies in Fungi 6(1): 188-203 (2021) www.studiesinfungi.org ISSN 2465-4973
Article

Doi 10.5943/sif/6/1/12

(54) Title of the invention : DEVELOPMENT OF MERCURY ION DETECTION SENSOR USING FIELD EFFECT TRANSISTOR IN WASTE WATER

Endophytic fungi: a source of potential anticancer compounds

Palwe SD^{1*}, Borde MY² and Sonawane HB³

Link for the Google Scholar

https://scholar.google.com/citations?hl=en&user=xg-EMm0AAAAAJ&view_op=list_works&sortby=pubdate

THANK YOU

Bio-data

1. **Name:** Dr. Sonawane Hiralal Bhaskar
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Department of Botany,
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2. **E-mail:** amolsbr@gmail.com,
hbs_botany@pdearmacs.edu.in
Mobile No: +91-9860375287/ 09075093787

3. **Institution's Address:** Pune District Education Association's,
Prof. Ramkrishna More Art's, Commerce
and Science College, Akurdi, Pune-411044.

4. **Date of Birth:** 20th June 1985

5. **Gender (M/F):** Male

6. **Academic Qualifications:**

Degree	Year	Subjects	College	University	Percentage (% Marks)
B.Sc.	2005	Botany	KANMS College, Satana Dist: Nashik	Savitribai Phule Pune University, Pune	81.00
M.Sc.	2007	Botany	Department of Botany, University of Pune	Savitribai Phule Pune University, Pune	67.50
Ph.D.	2010	Botany	Department of Botany, University of Pune	Savitribai Phule Pune University, Pune	-

7. **Ph.D thesis Details:**

Ph D Thesis Title: "Hypoglycemic Effect of medicinal mushroom *Phellinus*."

Name of the Guide: Late Prof. J. G. Vaidya and Prof. V. S. Ghole.

University: Department of Botany University of Pune, Pune, Maharashtra.

Year of Award: 15th October 2010.

8. Research Guide: Recognized Research guide of Savitribai Phule Pune University, Pune and Three students registered and working under my guidance.

9. Work experience:

Sr. No.	Positions held	Name of the Institute	From	To	Pay Scale
1	Assistant Professor	Konkan Gyanpeeth Karjat College. Karjat, Raigad	20.02.2011	22.11.2011	15600-39100/- AGP 6000/-
2	Assistant Professor	PDEA's Anantrao Pawar College, Pirangut, Pune	22.11.2011	15.08.2018	15600-39100/- AGP 6000/-
3	Assistant Professor	PDEA's Prof. Ramkrishna More Arts Commerce and Science College, Akurdi, Pune-44	16.08.2018	till date	15600-39100/- AGP 7000/-

10. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

Sr. No.	Name of Award	Awarding Agency	Year
1.	Meritorious Research Fellowship	University of Pune, Pune	2008
2.	Best Teacher Award	Pune District Education Association, Pune.	2016
3	Best Research Officer	NBC SRLab Himedia, Navi Mumbai	2010

Member:

- Member, Equivalence committee Savitribai Phule Pune University, Pune
- Member, IAEC (Institutional Animal Ethical Committee) CPCSEA Ministry of environment and forest (Animal welfare division) in College of Pharmacy and Research Institute Karjat, Mumbai.
- Associate expert in Ecology and Biodiversity for Environment consent, Accredited by NABET, New Delhi.

- Member and assistant coordinator, Internal Quality Assurance Cell, Prof. Ramkrishna More Arts Commerce and Science College, Akurdi Pune.
- Member, Expert Committee for Research Centre, Savitribai Phule Pune University, Pune.
- Member, Local Inquiry Committee, Savitribai Phule Pune University, Pune.
- Member, Syllabus Framing Committee RMC Akurdi, Pune
- Expert, Ph D Research Synopsis Committee, Department of Botany, SPPU Pune
- Member, Local Selection Committee, Savitribai Phule Pune University, Pune.
- Paper Setter and Examiner for Undergraduate and Post graduate in examination of Botany, Savitribai Phule Pune University, Pune.
- Coordinator, PG Research Centre in Botany, Prof. Ramkrishna More College, Akurdi, Pune.
- Member, Examination Committee at Bhartee Vidyapeeth Pune.

11. Publications (List of papers published in SCI Journals).

Sr. No.	Author's Name	Title	Name of Journal	Volume	Page	Year
	Sonawane, H., Arya, S., Math, S. et al.	Myco-synthesized silver and titanium oxide nanoparticles as seed priming agents to promote seed germination and seedling growth of <i>Solanum lycopersicum</i> : a comparative study	International Nano Letters	27	10	2021
	Palwe SD, Borde MY and Sonawane HB	Endophytic fungi: a source of potential anticancer compounds	Studies in Fungi	6(1)	188	2021
	H Sonawane, S Arya, V Ghole, K Apte, D Shelke, M Chaskar	Hypoglycemic and anticataract activity of crude exopolysaccharides of medicinal mushroom <i>Phellinus badius</i> on streptozotocin-induced diabetic rats and goat eye lenses respectively.	Bioactive Carbohydrates and Dietary Fibre	24	100241	2020
	S Arya, H Sonawane, S Math, P Tambade, M Chaskar, et al.	Biogenic titanium nanoparticles (TiO ₂ NPs) from <i>Trichoderma citrinoviride</i> extract: synthesis, characterization and antibacterial activity against extremely drug-resistant <i>Pseudomonas aeruginosa</i> .	International Nano Letters	11	35-42	2020

	Sonawane HB, Borde MY, Nikalje GC, Terkar A, Math SK.	HR-LC-MS based metabolic profiling of <i>Fusarium solani</i> a fungal endophyte associated with <i>Avicennia officinalis</i> .	Current Research in Environmental & Applied Mycology (Journal of Fungal Biology)	10(1)	262-273	2020
	Sonawane HB	Bioactive Metabolites with Pharmacological Potential from Medicinal Mushrooms	International J of biology, Pharmacy and allied sciences	9(2)	11-26	2020
	S Math, H Sonawane, V Patil, S Arya and AAde	Plant resistance strategies against the viral pathogens	Eco. Env. & Cons.	26(4)	1716-1720	2020
	S Math, SArya, H Sonawane, V Patil, M Chaskar	Arbuscular mycorrhizal (<i>Glomus fasciculatum</i>) fungi as a plant immunity booster against fungal pathogen.	Current Agriculture Research Journal	7(1)	99-107	2019
	KM Samb-Joshi, YA Sethi, AA. Ambalkar, HB Sonawane, SP Rasale <i>et al.</i>	Lignin-Mediated Biosynthesis of ZnO and TiO ₂ nanocomposites for enhanced antimicrobial activity.	J. Compos. Sci.	3	90	2019
	Ekar SU, Wani PN, Shaikh SF, Nakate UT, Ghule BG, Shinde PV, Raut SD, Jadhav VV, Jadhav S S, Kholam Y B, Sonawane H B, Mane R	Cl ₂ gas sensing properties of Ag- sensitized Tio ₂ films prepared from bio- inspired nanocrystalline Tio ₂	International Journal of chemical and Physical Sciences	7	62-69	2018
	Sonawane HB	Significant Potential of Medicinal Mushrooms in Immunomodulation.	International Journal of Researches Biosciences, Agriculture Technology.	2	138-140.	2018
	Sonawane HB, A Rahul, Deokule SS.	A Review on DNA Sequencing Yesterday, Today and Tomorrow.	International Journal of Current Research	8	24836 - 24845	2016

	Sonawane HB, SR Bhosle, GS Bapat, Ghole VS.	Pharmaceutical metabolites with potent Bioactivity from mushrooms.	Journal of Pharmacy Research	8(7)	969-972	2014
	Sonawane HB, Bapat GS, Bhosle SR, Ghole VS	Antimicrobial activity of <i>Phellinus</i> and <i>Ganoderma</i> samples against human pathogenic organisms.	Journal of Pharmacy Research	8(7)	1008-1013.	2014
	Sonawane HB, Ghole V. S, Garad S A, G S Bapat, S R Bhosle, Kishori Apte	Hypoglycemic Effect of Phansomba (<i>Phellinus Badius</i> Berk Ex Cooke) G. Cunn. On alloxan-induced diabetic Rats	Journal of Natural Remedies	13(1)	29-34	2013
	Sonawane HB, S Bhosle, G Bapat, S. A. Garad, V. S. Ghole	Bioactive Metabolites and Compound from Medicinal Mushrooms	International Journal of Scientific & Engineering Research	4(6)	304-315	2013
	Sonawane HB., Asghar sharifi, SR Bhosle, SA Garad, GS Bapat.	Antifungal and Antibacterial Activity of <i>Phellinus</i> Samples from Western Ghats of India.	Journal of Pharmacy Research	5(12)	5339-5342	2012
	Sonawane HB, Bhosle SR, Garad S.A.	Antimicrobial activity of some species of <i>Phellinus</i> and <i>Ganoderma</i> from Western Ghats of India.	International J of Pharmaceutical and Research	3(6)	1795-1799	2012
	HB Sonawane, Vaidya JG, Garad SA, Bhosle SR	Antioxidant Activity of Folk Medicinal Mushroom 'Phansomba' From Western Ghats Of Maharashtra (India).	Journal of phytology research	5(1)	202-204	2011
	Sonawane HB, SR Bhosle et al.	<i>In vitro</i> Evaluation of Sesquiterpenoid Extracts of <i>Phellinus</i> Samples from Western Ghats of Maharashtra for antimicrobial Activity.	Journal of Phytology	3(6)	35-37	2011
	SR Bhosle, SA Garad, HB	Ergosterol content of several wood decaying fungi using a	International Journal of	2(6)	916-918	2011

	Sonawane, JG Vaidya	modified method.	Pharmacy and Life science			
2	SR Bhosle, JG Vaidya, SA Garad, HB Sonawane	Antimicrobial Activity of Terpenoid Extracts from <i>Ganoderma</i> Samples.	International Journal of Pharmacy and life science	1(4)	234- 240	2010

12. Detail of patents

Sr. No.	Patent Title	Name of Applicant/Inventor	Patent No	Award Date	Agency/ Country	Status
1.	A Novel mushroom-based additive for poultry and animal feed for enhancing the growth and health	Dr. Sonawane Hiralal Bhaskar	2014/Mum/2015, Patent No.: 359025	22/02/2021	Indian	Granted
2.	Development of Mercury Ion Detection Sensor Using Field Effect Transistor in Waste Water	Dr. Sonawane Hiralal Bhaskar	Application No.: 202121015867 A	16/04/2021	Indian	Granted

13. List of Projects submitted/implemented:

S. No.	Title	Cost in lakhs	Month of submission	Role as PI / Co-PI	Agency	Status
1.	Isolation and Characterization of secondary metabolites from Endophytic fungi isolated from Mangrove	165000.00	March 2017	PI	Board of College and University Development, Savitribai Phule Pune University	Completed

14. Books/Reports/Chapters/General articles etc.

Sr. No.	Title	Author's Name	Publisher	Year
1.	Mycosynthesis of nanoparticles and their potential application in pharmaceutical	Deepak Shelke, Mahadev Chambhare, Hiralal Sonawane	Springer, Nanotechnology in the Life Sciences	2021

	bioprocessing			
2.	Fungal Endophytes: potential benefits of their future use in plant stress tolerance and agriculture	Deepak Bhaskar Shelke, Mahadev R. Chambhare, Hiralal Sonawane	Springer Nature, Beneficial Microorganisms in Agriculture	2021
3.	Medicinal Fungi: A Natural Source of Pharmacologically Important Metabolites.	Ganesh Kawashte, Hiralal Sonawane, Smriti Mittal, and Mahesh Borde	Springer Nature, R. Prasad et al. (eds.), Recent Developments in Microbial Technologies, Environmental and Microbial Biotechnology, https://doi.org/10.1007/978-981-15-4439-2_18	2021
4.	Phansomba: an Indian Herbal folk medicine	Hiralal Sonawane J. G. Vaidya, Bhosle S.R, Bapat Gauri,	Recent progress in Medicinal Plants, Drug Plants I, Studium Press, Edition 27	2009

Paper presented in Conferences:

1. Presented paper entitled Bioprospectus of Phansomba as a Folk Medicine from Western Ghats of Maharashtra. In International Conference on “Current trends in Medicinal Plant Research”. Department of Botany, University of Pune. Jan 2012.
2. Poster presentation in Conference “Emergence of modern techniques and development in biobuisness” on topic “Effect of medicinal mushroom biomass on the growth performance of Broilers”, Feb 18th – 20th,2008. Modern college of Arts, Commerce and Science, Pune, MS.
3. Presented paper in International Conference On “Biodiversity And Its Conservation”, Modern college of Arts, Commerce and science, Pune. Jan 2011.
4. Participated in National Conference on “Recent Trends in Plant Sciences”, T. C. College, Baramati, Pune, Maharashtra 2012.
5. International conference on “Innovation in Energy, Polymer and Environment Science” at Yashvantrao Chavan Institute of Science, Satara “Microbial Enzymes and Bioremediation of Pollutants” Oral Presentation, 10th – 12th January 2014.

6. International conference on “Environmental conservation by adopting new technologies” topic entitled “Enzymes role in bioremediation of toxic pollutant” at Modern college of Arts, Science & Commerce, 28 & 29 January 2014.
7. State level Seminar on “Recent trends in plant science” at Pune District Education Association’s Baburaoji Gholap College Sangvi, Pune. 9th January 2015.
8. One day state level seminar on Cultivation of button mushroom at PDEA,s Waghire college Saswad college.
9. International conference on Natural resource management and sustainable agriculture at New Art’s, commerce and science college, Parner, 20 and 21 January 2017.
10. Presented Paper in National conference in life science at PDEA,s Waghire college Saswad college on future of medicinal mushrooms; 07 february 2018.
11. Presented paper on Isolation and characterization of endophytic fungi from Mangroves, at International symposium on Fungal biology: Advances, application and conservation, organized by NFCCI, ARI Pune, 19.11.2018 to 21.11.2018.
12. Presented paper in oral at Recent advances in traditional medicine, medicinal plants and phytochemistry at Ahmednagar College, Ahmednagar; 08th and 09th February 2019.
13. Presented paper at International Conference on ‘Climate Change, Mangroves and Sustainable Management’ at IQAC & PG-Department of Botany of Shri Pancham Khemraj Mahavidyalaya, Sawantwadi, (MS) University of Mumbai, Mangrove Society of India & Sahyadri Botanical Society, Kolhapur 24th April, 2020.
14. Presented paper at International conference on recent trends in plant sciences paper entitled” Antioxidant potential of compounds from endophytic fungi of Mangroves” at Agarwal Science college Navapur, 15.05.2020.

Training/Workshop/Courses:

1. Participated in workshop “Phytochemical analysis of therapeutically active constitutes of pharmaceutically important medicinal plants” at Department of Botany, University of Pune, Pune, MS, Jan 2012.
2. Completed Short Term Course on design learner centric MOOC’s, NPTEL SYWAM, Govt of India, 2019.

3. Completed training/workshop on Taxonomy, Biodiversity, Ex situ conservation and application of fungi conducted at National Fungal Culture Collection of India (NFCCI ARI, Pune), 22.11.2018 to 24.11.2018.
4. Completed Course in Learn Moodle MOOC conducted by Moodle HQ Learn Moodle Basics, April 2020 (04 Weeks).
5. Completed Course in BOSS LINUX-UBUNTU operating system, Spoken tutorial Mumbai IIT Bombay, 15.04.2020 to 21.04.2020.
6. Workshop on Discussion S.Y.B.Sc. Botany Restructured Syllabus organized by Department of Botany, New Arts, Commerce and Science College, Parner and sponsored by Savitribai Phule Pune University, Pune on Saturday, 8 August, 2020.
7. Workshop on Restructuring of S.Y.B.Sc. Botany Syllabus at Vidya Pratisthan's Arts, Science and Commerce College Baramati, Pune, 27.07.2020.
8. Workshop on Restructuring of M.Sc. Botany Syllabus at Ahmednagar College, 29.07.2020.
9. One day workshop on e-content development and IPR, Higher Educaion, Govt of Maharashtra, 27.04.2020.

Invited Talk/ Resource Person:

10. Worked as a resource person at State level seminar on recent trend in physical chemical and life sciences for make in India organized by Amruteshwar college, Vinjar, Pune. 01.02.2018.
11. Resource person at State level seminar on Biodiversity at Arts Commerce and Science college Sonai, Ahemdnagar on 25-26th February 2018.
12. Resource person at International conference on Natural resource management and sustainable agriculture at New Art's, commerce and science college, Parner, 20 and 21 January 2017.
13. Resource person Mamasahab Mohol College Erandwana Pune.
14. Invited talk at National webinar Recent trends In Plant sciences at Waghire College Saswad, 24th March 2021.
15. Invited talk at Dept of Botany Telangana University Nizamabad, 12th April 2021 on Future Fungi.

16. Invited talk at PG Research Centre in Botany, Dept of Botany New Arts Commerce and Science College, Parner, Ahmednagar 06th May 2021 on Plant – Microbe Interaction.
17. Invited talk at State Level Workshop Biodiversity and Sustainable Development organized by Rayat Shikshan Sanstha Dr. Patangrao Kadam College, Ramanandnagar (Burli) College, 27th May 2021 on Fungal Biodiversity.

Any other Information:

- **Summary of my research co-workers (Ph. D. Students under my guidance):**
 1. Mr. Sagar Palwe (NET CSIR) is working on the Metabolite isolated from Endophytic fungi of anticancerous plants.
 2. Mr. Sunil Bhagat (NET CSIR) is working for his Ph.D. degree on "Wood Rotting Fungi from Madhe Ghat". We have collected about 50 specimens, amongst these 40 species were identified based on their morphology, while few were studied for cultural behavior and Molecular phylogeny.
 3. Mr. Manohar Gawit (NET) is working on Molecular phylogeny and Morphology of Aphyllophorales from Dang forest of Western Ghats of Maharashtra.
- Working as **Guide for PG Dissertation Project** (M. Sc Botany) for students of Fergusson College, Pune and Prof. Ramkrishna More College, Akurdi Pune.

Extension:

- National Service Scheme Programme Officer- 2013 to 2016
- Provide training for Mushroom cultivation to self help group and tribal people
- Creating awareness through lectures and training session among the tribal about the fungal diversity

Dr. Sonawane H.B

Signature

Award Category – Innovation and Discoveries (to be filled by teachers)

Award for - Teachers

Important Note:

- a) The work must be available on Institute's website
- b) The work must be available for peer review and critique
- c) The work must be reproducible and developed further by other scholars.

Duly completed form to be submitted by August 20, 2021.

Email *

amolsbr@gmail.com

Name of the teacher, age, institution name, course name *

Dr. Hiralal Bhaskar Sonawane, Age: 36, Institute Name: Prof. Ramkrishna More Arts Commerce and Science College Akurdi Pune Maharashtra, Course Name: Botany

Pls share what Innovation techniques have you implemented in your Teaching and learning process. Pls upload valid documents to justify your claim. *

 Innovations in te...

What Research and development initiatives have you undertaken in the last one year? Upload valid documents or provide website links to justify your claim. *

 Research Activit...

Pls share details of Patents and copyrights filed in the last one year. Upload valid documents or provide website links to justify your claim. *

📄 Certificate - Dr. S...

📄 Part-1 - Dr. Sona...

Pls share details of any others work pertaining to innovation and discoveries. Upload valid documents or provide website links to justify your claim. *

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📄 Dr. Sonawane N...

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