Mr. AMIT KUMAR YADAV

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Date of Birth: 01.11.1994

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Last update: 31st August 2023

PH.D. SCHOLAR || PRIME MINISTER RESEARCH FELLOW

PROFILE

Highly self-motivated and independent Doctoral Researcher with demonstrated research expertise on Electrochemical Biosensors; Aptasensors; SELEX; Cancer diagnostics; Antibiotics detection; Gut metabolite detection; Electrochemistry; Nanobiotechnology; 2D-Materials; Self-assembled monolayers; Transition Metal Dichalcogenides; Molecularly Imprinted Polymers; Biomaterials; Cell Culture.

CORE COMPETENCIES

Innovative and interdisciplinary thinking • adaptable to multicultural and multi-collaborative environments • able to prepare funding proposals independently • expertise in writing and submitting publications and dealing with reviews •mentoring students • data management and statistical data analysis • networking • promoting scientific achievements in media • flexibility on modifying approaches • entrepreneurial mindset • strong background in biomedicine as well as biomedical engineering • passionate about integrating findings to real-life applications.

PROJECT EXPERIENCE

- **Junior Research Fellow** **June 2018 to January 2021**

Nano-Bio Laboratory, Special Center for Nanoscience, Jawaharlal Nehru University, New Delhi, INDIA
Project Name: "*Rapid detection of bacterial resistance to antibiotics based on changing optical properties of nanosized labels*"
Funding Body: Department of Biotechnology (DBT), Government of India, INDIA
Project Director: **Prof. Dr. Partima R Solanki**
Skills: Nanoparticles synthesis; Hydrothermal synthesis; Electrochemical Biosensors; Electrochemistry (CV, DPV and EIS); Nanobiotechnology; Antibiotics detection, characterization techniques (XRD, Raman, SEM, TEM, FTIR, contact angle, etc).

- **Junior Research Fellow** **August 2017 to March 2018**

Cancer Genetics Laboratory, Dr. B R Ambedkar Centre for Biomedical Research (ACBR), University of Delhi, New Delhi, INDIA

Project Name: *"To study the role of hnRNPA1 (an RNA binding protein) in glioblastoma drug resistance development"*
Funding Body: Science and Engineering Research Board (SERB) - Department of Science and Technology (DST), Government of India, INDIA
Project Director: **Prof. Dr. Ajay Kumar Yadav**
Skills: Mammalian cell culture; Bacterial cell culture; Polymerase chain reaction (PCR); SDS-PAGE; Western blotting; Mice model; Primer designing; Agarose gel electrophoresis; molecular biology techniques etc.

- **Master Thesis Trainee** **February 2016 to August 2016**

Structural Biology Unit Laboratory, National Institute of Immunology, New Delhi, INDIA
Project Name: *"Investigating the effect of sugars on antimicrobial peptide Halictine-2"*
Funding Body: Department of Biotechnology (DBT), Government of India, INDIA
Project Director: **Prof. Dr. Kanwaljeet Kaur**
Skills: Peptide synthesis, Synthesis of sugar molecules; Thin layer chromatography (TLC); Flash column chromatography; Antimicrobial peptide synthesis; Antimicrobial activity; bacterial cell culture; outer permeability activity; inner permeability activity, Mass spectrometry; Peptide synthesizer; HPLC etc.

- **INSA Summer Research Fellow** **April 2015 to June 2015**

Nanobioelectronics Laboratory, Department of Biotechnology, Delhi Technological University, Delhi, INDIA
Project Name: *"A Rare Earth Metal Oxide Based Biosensor for Food Toxin Detection".*
Funding Body: Science Academics (IAS-INSA-NASI), Government of India, INDIA
Project Director: **Prof. Dr. Bansi D Malhotra**
Skills: Nanoparticles synthesis; Hydrothermal synthesis; Electrochemical Biosensors; Electrochemistry; Nanobiotechnology; Food toxin detection etc.

ACADEMIC QUALIFICATIONS

(A) EDUCATIONAL QUALIFICATION:

Exam passed	University/Board	Main subjects	Year of Passing	Marks (%)/ CGPA
Ph.D.	Jawaharlal Nehru University, New Delhi, INDIA	Nanoscience (**Thesis title:** Towards Designing of Affordable Bio-sensing platform for Detection of Cancer	Present	8.4
M.Sc.	Vinoba Bhave University, Jharkhand, INDIA	Biotechnology (**Thesis title**: Investigating the effect of sugars on antimicrobial peptide Halictine-2)	2016	77.05%
B.Sc.	Vinoba Bhave University, Jharkhand, INDIA	Biotechnology (Hons.)	2014	71.68%
HSC	Jharkhand Academic Council, RANCHI	Physics, Chemistry, Math, Biology, & English	2011	67.2%

SSC	Jharkhand Academic Council, RANCHI	Hindi, English, Science, Social science & Math	2009	67.8%

(B) *FELLOWSHIPS/ACHIEVEMENTS/AWARDS:*

August 2023	Secured 4th position in paper presentation in International Conference & Workshop on "Addressing Antibiotics Abuse in Community Using Biosensing Technologies" from 25th -27th August 2023 at ILLL, University of Delhi.
July 2023	Received **Young Researcher Award 2023** for the publication entitled "*Fabrication of alkoxysilane substituted polymer-modified disposable biosensing platform: towards sperm protein 17 sensing as a new cancer biomarker*" by **Institute of Scholars (InSc)** registered under Ministry of MSME & Corporate Affairs, Govt. of India.
April 2023	Selected for the **SERB Student Travel Grant** by the **Science and Engineering Research Board**, Department of Science and Technology, Government of India to attend the **33rd Anniversary World Congress on Biosensors (Biosensors 2023)** that will be held in Busan, South Korea from the 5th to 8th of June 2023.
Jan 2023	**Best Oral Presentation Award** in the International Conference on Nanotechnology: Opportunities & Challenges (ICNOC-2022) in online mode, organized by Department of Applied Sciences & Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi, India on November 28-30, 2022.
Nov 2022	Selected for the **IWAM 2023 Student Travel Grant** by the ***Ras Al Khaimah Center for Advanced Materials (RAK CAM)*** to attend the **International Workshop on Advanced Materials (IWAM) 2023** that will be held in Ras Al Khaimah, Dubai, United Arab Emirates from the 19th to 21st of February 2023.
April 2022	**Best Young Scientist Prize** in Third International Conference on Entrepreneurship, Research and Innovations for Environmental Sustainability and Planetary Health, Organized by University of Delhi, INDIA.
2022	Paper entitled- "Gut microbiota-derived trimethylamine N-oxide (TMAO) detection through molecularly imprinted polymer-based sensor" published in Scientific Reports (Nature Portfolio) **featuring in the top 100 in chemistry papers in 2021**.
Sep 2021	**Best Oral Presentation Award** in Two-Day International Conference on Nanomedicine: Biomolecules for Human Health (NBHH-2021) Small Molecules, Big Opportunities!! Organized by University of Delhi, INDIA.
Sep 2021	**Best Oral Presentation Award** in 7th Edition of International Conference on Nanotechnology for Better Living 2021 (NBL 2021) jointly organized by NIT Srinagar and IIT Delhi, INDIA.
May 2021	**Prime Minister Research Fellowship (PMRF)** for the project entitled "Design and validation of cost-effective aptasensor for the detection of *H. pylori* as gastric cancer biomarker" by Ministry of Education, Govt. of India, INDIA
Dec 2020	**Senior Research Fellowship (ICMR-SRF) for the project entitled** "Development of screen-printed aptamer based affordable biosensing platform for detection of Colorectal cancer (CRC)" by Indian Council of Medical Research (ICMR), New Delhi, INDIA.
Dec 2020	**InSc Research Excellence Award** by the Institute of Scholars (InSc), Govt. of India.
2015	**INSA-Summer Research Fellow** by the SCIENCE ACADEMIES (IASc-INSA-NASI)**,** INDIA.

2016	**2nd rank holder of the university**, Vinoba Bhave University, Jharkhand, INDIA
2014-2016	**Jharkhand eKalyan Scholarship**, by Govt. of Jharkhand, INDIA
2011-2014	**LIC Golden Jubilee Scholarship** by Life Insurance Corporation of India, New Delhi.

(C) PUBLICATIONS [32, Citations > 829, h-Index: 14, i10-Index: 16]

Research/Review Articles

30) Yadav, Amit K; Verma, Damini; Solanki, Pratima. Structuring two-dimensional MoS2 nanosheets @reduced graphene oxide interface for high throughput electrochemical biosensing of cancer biomarker in serum samples. **ACS Applied Biomaterials [Accepted for publication]**.

29) Yadav, A.K., Verma, D., Kumar, A., Bhatt, A.N. and Solanki, P.R., 2023. Biocompatible epoxysilane substituted polymer-based nano biosensing platform for label-free detection of cancer biomarker SP17 in patient serum samples. **International Journal of Biological Macromolecules**, p.124325. [**IF- 8.025**] doi.org/10.1016/j.ijbiomac.2023.124325

28) Verma, A.K., Noumani, A., **Yadav, A.K.** and Solanki, P.R. FRET Based Biosensor: Principle Applications Recent Advances and Challenges. **Diagnostics.** 2023 April. ***[IF- 3.992]*** https://doi.org/10.3390/diagnostics13081375

27) Sen RK, Prabhakar P, Mayandi V, Dwivedi N, **Yadav AK**, Solanki PR, Gupta A, Gowri VS, Lakshminarayanan R, Verma NK, Mondal DP. Metal mediated high performance antimicrobial hydrogel films for wound infection management: Zn, Cu, and Mg versus Ag and Au. **Materials Chemistry and Physics**. 2023 Jan 10:127365. ***[IF- 4.778]*** *doi.org/10.1016/j.matchemphys.2023.127365*

26) Kumar, A., Sah, D.K., Khanna, K., Rai, Y., **Yadav, A.K.,** Ansari, M.S. and Bhatt, A.N., 2022. A calcium and zinc composite alginate hydrogel for pre-hospital hemostasis and wound care. **Carbohydrate Polymers**, p.120186. ***[IF-10.723]*** *doi.org/10.1016/j.carbpol.2022.120186*

25) Prabhakar P, Sen RK, Patel M, Dwivedi N, Singh S, Chouhan M, **Yadav AK**, Mondal DP, Solanki PR, Srivastava AK, Dhand C. Development of Copper Impregnated Bio-Inspired Hydrophobic Antibacterial Nanocoatings for Textiles. **Colloids and Surfaces B: Biointerfaces**. 2022 Oct 10:112913. ***[IF-5.999]*** *doi.org/10.1016/j.colsurfb.2022.112913*

24) Yadav AK, Verma D, Dalal N, Kumar A, Solanki PR. Molecularly imprinted polymer-based nanodiagnostics for clinically pertinent bacteria and virus detection for future pandemics**. Biosensors and Bioelectronics: X. 2022 Oct 8:100257.** ***[Cite score-7.3]*** *doi.org/10.1016/j.biosx.2022.100257*

23) Shekhar S, **Yadav, A.K.,** Khosla A, Solanki PR. Interleukins Profiling for Biosensing Applications: Possibilities and the Future of Disease Detection. **ECS Sensors Plus**. 2022 Sep 15. **[Equal contribution]** *doi.org/10.1149/2754-2726/ac9227*

22) Yadav AK, Verma D, Sajwan RK, Poddar M, Yadav SK, Verma AK, Solanki PR. Nanomaterial-Based Electrochemical Nanodiagnostics for Human and Gut Metabolites Diagnostics: Recent Advances and Challenges. **Biosensors**. 2022 Sep;12(9):733. ***[IF-5.743]*** *doi.org/10.3390/bios12090733*

21) Verma D, **Yadav AK,** Chaudhary N, Mukherjee MD, Kumar P, Kumar A, Solanki PR. Recent Advances in Understanding SARS-CoV-2 Infection and Updates on Potential Diagnostic and Therapeutics for COVID-19. **Coronavirus**. 2022. **[Equal contribution]** *10.2174/2666796703666220302143102*

20) Bisht, N., Dwivedi, N., Kumar, P., Venkatesh, M., **Yadav, A.K.,** Mishra, D., Solanki, P., Verma, N.K., Lakshminarayanan, R., Ramakrishna, S. and Mondal, D.P., 2022. Recent Advances in Copper and Copper-Derived Materials for Antimicrobial Resistance and Infection Control. **Current Opinion in Biomedical Engineering**, p.100408. ***[IF- 4.164]*** *doi.org/10.1016/j.cobme.2022.100408*

19) Verma, D., Singh, K.R., **Yadav, A.K.**, Nayak, V., Singh, J., Solanki, P.R. and Singh, R.P., 2022. Internet of things (IoT) in nano-integrated wearable biosensor devices for healthcare applications. **Biosensors and Bioelectronics: X**, p.100153. ***[Cite score- 7.3]*** *doi.org/10.1016/j.biosx.2022.100153*

18) Yadav, A.K., Gulati, P., Sharma, R., Thakkar, A. and Solanki, P.R., 2022. Fabrication of alkoxysilane substituted polymer-modified disposable biosensing platform: Toward sperm protein 17 sensing as a new cancer biomarker. ***Talanta***, p.123376. ***[IF- 6.556]*** *doi.org/10.1016/j.talanta.2022.123376*

17) Verma, D., **Yadav, A.K.,** Rathee, G., Dhingra, K., Mukherjee, M.D. and Solanki, P.R., 2022. Prospects of Nanomaterial-Based Biosensors: A Smart Approach for Bisphenol-A Detection in Dental Sealants. ***Journal of The Electrochemical Society***. **[Equal contribution; IF- 4.316]** *doi.org/10.1149/1945-7111/ac51fc*

16) Yadav, A.K., Verma, D., Chaudhary, N., Kumar, A. and Solanki, P.R., 2022. Aptamer based switches: A futuristic approach for Helicobacter pylori detection. ***Materials Letters***, *308*, p.131239. **[IF- 3.574]** *doi.org/10.1016/j.matlet.2021.131239*

15) Sen, R.K., Prabhakar, P., Bisht, N., Patel, M., Mishra, S., **Yadav, A.K**., Venu, D.V., Gupta, G.K., Solanki, P.R., Ramakrishnan, S. and Mondal, D., 2021. 2D Materials-Based Aptamer Biosensors: Present Status and Way Forward. ***Current medicinal chemistry***. **[IF- 4.740]** *10.2174/0929867328666211213115723*

14) Yadav, A.K., Verma, D. and Solanki, P.R., 2021. Electrophoretically deposited L-cysteine functionalized MoS2@MWCNT nanocomposite platform: a smart approach toward highly sensitive and label-free detection of gentamicin. ***Materials Today Chemistry***, *22*, p.100567. **[IF- 7.613]** *doi.org/10.1016/j.mtchem.2021.100567*

13) Chaudhary, N., **Yadav, A.K.,** Sharma, J.G. and Solanki, P.R., 2021. Designing and characterization of a highly sensitive and selective biosensing platform for ciprofloxacin detection utilizing lanthanum oxide nanoparticles. ***Journal of Environmental Chemical Engineering***, *9*(6), p.106771. **[IF- 7.968]** *doi.org/10.1016/j.jece.2021.106771*

12) Yadav, A.K., Verma, D., Lakshmi, G.B.V.S., Eremin, S. and Solanki, P.R., 2021. Fabrication of label-free and ultrasensitive electrochemical immunosensor based on molybdenum disulfide nanoparticles modified disposable ITO: An analytical platform for antibiotic detection in food samples. ***Food Chemistry***, *363*, p.130245. **[IF- 9.231]** *doi.org/10.1016/j.foodchem.2021.130245*

11) Sharma, M., Kumari, M., Rani, S., **Yadav, A.K.,** Solanki, P.R. and Mozumdar, S., 2021. Influence of pH, β-Cyclodextrin, and Metal Ions on the Solubility and Stability of the Medicinally Competent Isoxazole Derivative of Curcumin: A Photophysical Study. ***ACS Applied Bio Materials***, *4*(12), pp.8407-8423. **[Cite score- 4.9]** *doi.org/10.1021/acsabm.1c00957*

10) Dalal, N., Jalandra, R., Bayal, N., **Yadav, A.K.,** Sharma, M., Makharia, G.K., Kumar, P., Singh, R., Solanki, P.R. and Kumar, A., 2021. Gut microbiota-derived metabolites in CRC progression and causation. ***Journal of Cancer Research and Clinical Oncology***, *147*(11), pp.3141-3155. **[IF- 4.332]** *doi.org/10.1007/s00432-021-03729-w*

9) Jalandra, R., Dalal, N., **Yadav, A.K.,** Verma, D., Sharma, M., Singh, R., Khosla, A., Kumar, A. and Solanki, P.R., 2021. Emerging role of trimethylamine-N-oxide (TMAO) in colorectal cancer. ***Applied Microbiology and Biotechnology***, *105*(20), pp.7651-7660. **[IF- 5.560]** *doi.org/10.1007/s00253-021-11582-7*

8) Verma, D., **Yadav, A.K.,** Mukherjee, M.D. and Solanki, P.R., 2021. Fabrication of a sensitive electrochemical sensor platform using reduced graphene oxide-molybdenum trioxide nanocomposite for BPA detection: An endocrine disruptor. ***Journal of Environmental Chemical Engineering***, *9*(4), p.105504. **[IF- 7.968]** *doi.org/10.1016/j.jece.2021.105504*

7) Yadav, A.K., Verma, D., Kumar, A., Kumar, P. and Solanki, P.R., 2021. The perspectives of biomarker-based electrochemical immunosensors, artificial intelligence and the Internet of Medical Things towardáCOVID-19 diagnosis and management. ***Materials Today Chemistry***, *20*, p.100443. **[IF- 7.613]** *doi.org/10.1016/j.mtchem.2021.100443*

6) Vashistha, V., Bhardwaj, S., Kumar, A., Yadav, A.K., Yadav, B.K., Yadav, A.K., 2021. HnRNPA1 isoform bring diversity in glioma cell survival. **Global Journal for Research Analysis. [IF-5.956]** *10.36106/gjra*

5) Chauhan, D., **Yadav, A.K**. and Solanki, P.R., 2021. Carbon cloth-based immunosensor for detection of 25-hydroxy vitamin D3. ***Microchimica Acta***, *188*(4), pp.1-11. **[IF- 6.408]** *doi.org/10.1007/s00604-021-04751-y*

4) Verma, D., Chauhan, D., Das Mukherjee, M., Ranjan, K.R., **Yadav, A.K**. and Solanki, P.R., 2021. Development of MWCNT decorated with green synthesized AgNps-based electrochemical sensor for highly sensitive detection of BPA. ***Journal of Applied Electrochemistry***, *51*(3), pp.447-462. **[IF- 2.925]** *doi.org/10.1007/s10800-020-01511-3*

3) Lakshmi, G.B.V.S., **Yadav, A.K**., Mehlawat, N., Jalandra, R., Solanki, P.R. and Kumar, A., 2021. Gut microbiota derived trimethylamine N-oxide (TMAO) detection through molecularly imprinted polymer-based sensor. ***Scientific reports***, *11*(1), pp.1-14. **[equal contribution; IF- 4.996]** *doi.org/10.1038/s41598-020-80122-6*

2) Jalandra, R., **Yadav, A.K.,** Verma, D., Dalal, N., Sharma, M., Singh, R., Kumar, A. and Solanki, P.R., 2020. Strategies and perspectives to develop SARS-CoV-2 detection methods and diagnostics. ***Biomedicine & Pharmacotherapy***, *129*, p.110446. **[equal contribution; IF- 7.419]** *doi.org/10.1016/j.biopha.2020.110446*

1) Yadav, A.K., Dhiman, T.K., Lakshmi, G.B.V.S., Berlina, A.N. and Solanki, P.R., 2020. A highly sensitive label-free amperometric biosensor for norfloxacin detection based on chitosan-yttria nanocomposite. ***International journal of biological macromolecules,*** *151*, pp.566-575. **[IF- 8.025]** *doi.org/10.1016/j.ijbiomac.2020.02.089*

Submitted Manuscripts

6) Vidhi Vashishtha, Sachin Bhardwaj, Sanjay Kumar, Sindhu Nair, **Amit Yadav**, Avinash Kumar, Markus Bredel, Ramin Massoumi, and Ajay Yadav. hnRNPA1 and SF2/ASF1 co-existence favor's therapeutic resistance in glioma cells. **Molecular Cancer Research [under review).**

5) Navneet Chaudhary, **Amit K. Yadav**, Damini Verma, Jai Gopal Sharma, Pratima R. Solanki. Electrochemical Immunosensor based on Nanostructured Lanthanum oxide substituted reduced graphene oxide Interface for Ultralow Ciprofloxacin Detection in Milk Samples. **RSC Materials Advances. [In-peer review].**

4) Payal Gulati, Avinash Kumar Singh, **Amit K. Yadav**, Kiran Pasbola, Prerna Pandey, Rinu Sharma, Alok Thakar, Pratima R. Solanki. Nano-modified Screen-Printed Electrodes based Electrochemical Immunosensors for Oral Cancer Biomarkers Detection in Undiluted Human Serum and Saliva Samples. **RSC Nanoscale Advances [In-peer review].**

3) Abhishek Kumar, Dhananjay Kumar Sah, Yogesh Rai, **Amit Kumar Yadav**, Pratima R. Solanki, Mohd Saquib Ansari, Anant Narayan Bhatt. A granular hemostatic composite of alginate, calcium, and zinc for rapid and effective management of post-traumatic hemorrhage. **Advanced Functional Materials [Submitted].**

2) Damini Verma, N. Dubey, **Amit K. Yadav**, R. Sharma, Pratima R Solanki. Disposable Paper based Screen Printed Electrochemical Immunoplatforms for Dual Detection of Esophageal Cancer Biomarkers in Patients' Serum samples. **RSC Materials Advances [Under review].**

1) Navneet Chaudhary, Damini Verma, **Amit K. Yadav**, Jai Gopal Sharma, Pratima R. Solanki Rational hydrothermal-assisted green synthesis of blueish emitting carbon dots as an optical sensing platform for antibiotic detection in the milk sample. **Talanta Open [Under review]**.

Book Chapters

7) Mishra A, Nair N, **Yadav AK**, Solanki P, Majeed J, Tripathi V. Coronavirus Disease 2019 (COVID-19): Origin, Impact, and Drug Development. **Intechopen.** *10.5772/intechopen.98358*

6) Yadav AK, Verma D, Solanki PR. Introduction to numerous diseases of the livestock. Nanobiotechnology for the Livestock Industry: Animal Health and Nutrition. ***Elsevier***. 2023 Jan 15:141. *doi.org/10.1016/B978-0-323-98387-7.00020-3*

5) Verma D, **Yadav AK**, Solanki PR. Prospects of nanobiotechnological applications for the livestock industry. In Nanobiotechnology for the Livestock Industry 2023 Jan 1 (pp. 475-493). **Elsevier**. *doi.org/10.1016/B978-0-323-98387-7.00015-X*

4) Verma, D., **Yadav, A.K.,** Solanki, P.R. Enzymatic Bio-sensing Platforms for Gut Diseases. **SpringerNature** [***accepted for publication***].

3) Verma, D., **Yadav, A.K.,** Solanki, P.R. Nanocomposites Applications in Wound Management. ***Elsevier***. **(Equal contribution)** [***Under Revision***].

2) Amit K. Yadav, Damini Verma, Pratima R Solanki. Approaches/Modification strategy to fight against Medical Device associated Biofilms. ***Elsevier (under review)***

1) Amit K. Yadav, Damini Verma, Pratima R Solanki. Electrospun fiber-based mats as anti-microbial coatings for medical devices and implant. ***Elsevier (under review)***

(D) PATENTS

1) **Amit K. Yadav,** Pratima R. Solanki, Renu Sharma. ***"A novel electrochemical detection platform for cancer biomarker: Sp17"***. **Indian Patent Granted**. [Application. No. 202211005455; February 01, 2022].

(E) COMMISSION OF TRUST

1. Reviewer of ACS Biomacromolecules; Materials Today Sustainability; Bioelectrochemistry; Advanced Sensor and Energy Materials.

2. Reviewer of InSc International Publishing Platforms and also for Technical Events under the stream: Basic and Medical Sciences.

(F) MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

1) Electrochemical Society (ECS) Student Membership

2) InSc Membership- Professional member of InSc International Publishers, Life Time Valid (LIFE MEMBER OF INSC).

(G) ADMINISTRATIVE RESPONSIBILITY

1) Secretary - ECS-Jawaharlal Nehru University Student Chapter, New Delhi

15^{th} Jan 2023 – Present

2) President – ECS-Jawaharlal Nehru University Student Chapter, New Delhi

13^{th} Jan 2022 – 14^{th} Jan 203

(H) SUPERVISION OF RESEARCH FELLOWS

PG - 07; PhD - 05

(I) ACADEMIC LINKS

Google Scholar: https://scholar.google.com/citations?user=iF0vvJgAAAAJ&hl=en

Research Gate: https://www.researchgate.net/profile/Amit-Yadav-49

Linkedin: https://www.linkedin.com/in/amit-k-yadav-33056113b/

Scopus ID: https://www.scopus.com/authid/detail.uri?authorId=57215092388

(J) RESEARCH GRANT FELLOWSHIP: -

Project Title	Principal Investigator	Research Budget	Funding Status	Recent Status
"Design and validation of cost-effective aptasensor for the detection of *H. pylori* as gastric cancer biomarker"	Amit K. Yadav	46,20,000/-	Ministry of Education, Govt. of India, INDIA	Proposal accepted (2021-2025))
"Development of screen-printed aptamer based affordable biosensing platform for detection of Colorectal cancer (CRC)"	Amit K. Yadav	15,98,400/-	Indian Council of Medical Research (ICMR), New Delhi, Govt. of India, INDIA	Proposal accepted (2020-2023)

TECHNICAL SKILLS

- **Hands on experience** in Peptide Synthesizer, High Performance Liquid Chromatography (HPLC), Flash Column Chromatography, Thin Layer Chromatography (TLC), UV-Vis-NIR Spectroscopy, Circular Dichoism spectroscopy (CD), Fluorescence spectrophotometer, Nanodrop spectrophotometer, Electrochemical Analyzer [Cyclic Voltammetry (CV), Differential Pulse Voltammetry (DPV), Frequency Response Analysis (FRA)], Multichannel Analyzer, Lyophilizer, Rotatory Evaporator, Ultracentrifugation, Probe Sonicator, Inverted microscope, ELISA Reader, Gel-Doc, Muffle furnace, Raman Spectroscopy, X-ray powder diffraction (XRD), Fourier Transform Infrared Spectroscopy (FT-IR), Dip Coater, Milli-Q water purification system, UV-spectroscopy, Photoluminescence (PL) spectroscopy, Zeta Potential, Contact angle, Scanning electron microscopy (SEM) etc.

- **Working knowledge** in Field Emission-Scanning electron microscopy (FE-SEM), Transmission electron microscopy (TEM), Flow Cytometry, Nuclear Magnetic Resonance (NMR), Mass spectrometry, Immunohistochemistry (IHC) Assay, Chromatin immunoprecipitation (ChIP) Assay.

- **Fabrication of Electrochemical and Optical Biosensors for Healthcare:** Chemical and green synthesis of nanoparticles by hydrothermal and co-precipitation methods, Functionalization of nanoparticles, Electrophoretic deposition of functionalized nanoparticles ITO electrode, Immobilization of antibodies on ITO electrode, Characterization of nanoparticles through scanning electron microscope (SEM), Transmission electron microscope (TEM), X-ray powder diffraction (XRD), Fourier Transform Infrared Spectroscopy (FT-IR), Raman Spectroscopy & UV-Vis spectroscopy, Electrochemical analyzer (CV, DPV & FRA) for different studies like effect of pH, electrode study, effect of scan rate study, electrochemical response study, interference study, shelf-life study and real sample analysis.

- **Aptamer selection** (against *Helicobacter pylori*) through Systematic evolution of ligands by exponential enrichment **(SELEX)** technology and Fabrication of aptamer based electrochemical aptasensors.

- Fabrication of **paper based disposable screen-printed electrodes**, Collection and processing of cancer patient samples (serum, saliva and biopsy), Validation of real samples with ELISA.

- **Molecular Biology & RDT techniques** like Polymerase Chain Reaction (PCR), SDS-PAGE, Western Blotting, Agarose Gel electrophoresis (AGE), Protein Estimation, RNA & DNA isolation, Plasmid

isolation, Restriction Digestion, Transformation, Primer Designing, Cell Viability Assay (MTT Assay).

- **Mammalian cell culture techniques** like Thawing of cells, Culturing of cell line; Trypsinization of cells; Making freezes of cell line; Making resistance cell line against temozolamide (TMZ) drug; Transfection with siRNA and plasmid for knockdown and overexpression of a gene, Cell viability studies (MTT assay).
  Cancer cell lines handled: Glioma cell line (U87, A172, U373); A549; L929;
  Mice handling: Sub-cutaneous injection of cancer cell line in swiss albino mice.

- **Drug discovery techniques like** Chemical synthesis of sugar compounds and characterization through Mass and NMR spectroscopy, non-glycosylated and glycosylated peptide synthesis and purification through HPLC, Secondary structure determination of peptides through CD spectroscopy, Minimum inhibitory concentration [MIC] assay, Outer and Inner membrane permeabilization assay against bacterial cells.

- **Basic Microbiology Biology techniques** like sterilization, plating, spreading, streaking, serial dilution techniques and storage, Gram staining and viable cell count, Bacterial inhibition assay, viability assay and antibiotic resistance assay, Bacteriological water analysis (BOD), Minimum inhibitory concentration [MIC] assay, anti-bacterial assay, Outer and Inner membrane permeabilization assay against bacterial cells.
  Microorganisms handled- *Escherichia coli* ATCC 25922, *E. coli* ML35p, *E. coli* DH5α, *Staphylococcus aureus, Candida albicans, Pseudomonas aeruginosa, Klebsiella pneumoniae.*

PROJECTS AND TRAININGS

1) Did six months M. Sc. project work on "**Investigating the effect of sugars on anti- microbial peptide Halictine-2**" under supervision of **Dr. Kanwaljeet kaur**, Staff Scientist-VII, Structural Biology Unit Laboratory, **National Institute of Immunology**, New Delhi-110067.
2) Did two months' summer training on "**A Rare Earth Metal Oxide Based Biosensor for Food Toxin Detection**" under supervision of **Prof. (Dr.) Bansi D. Malhotra**, Nanobioelectronics Laboratory, Department of Biotechnology, **Delhi Technological University**, Delhi-110042.
3) Did five months B.Sc. project work on "**Tissue Culture of *Embllica officinalis*, its phytochemical analysis and antimicrobial activity**" at Plant Tissue Culture Laboratory, Department of Biotechnology, St. Columba's College Campus, under supervision of **Prof. (Dr.) Anwar Mallick**, Director, Advanced Science & Technology Research Center, **Vinoba Bhave University**, Hazaribag, Jharkhand-825301.
4) Did 15 days training at Department of Pathology, **Patliputra Medical College and Hospital**, Dhanbad, Jharkhand.
5) Did 15 days training at Department of Institute of Animal Health & Production (IAHP), **Birsa Agricultural University** (BAU), Ranchi, Jharkhand.

CONFERENCE/WORKSHOP/SYMPOSIUM ATTENDED

Conferences/symposium:

Oral Presentation

6. Oral talk on "Highly Efficient Nanostructured MoS2 Based Biosensor for Detection of Ampicillin Antibiotics in Food Samples" in the **International Conference on Nanotechnology: Opportunities & Challenges (ICNOC-2022)** in online mode, organized by Department of Applied Sciences & Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi, India on November 28-30, 2022.
5. Oral talk on "Fabrication of disposable and sensitive electrochemical biosensor based on (3-Aminopropyl)trimethoxysilane for new cancer biomarker detection, sperm protein 17" in the **27th ISCB International Conference (ISCBC-2022)**, Organized by **Indian Society of Chemists & Biologists (ISCB)** and Department of Chemistry, Birla Institute of Technology, Mesra, Ranchi,

Jharkhand, India, from 16th-19th Nov, 2022.

4. Oral talk on "Amine functionalized transition metal dichalcogenides based nanoparticles towards label-free immunosensing platform for antibiotics detection in food samples" in **Third International Conference on Entrepreneurship, Research and Innovations for Environmental Sustainability and Planetary Health**, Organized by Research Cell, Bhagini Nivedita College, University of Delhi, from 7th -8th April, 2022.

3. Oral talk on "Silane modified disposable ITO Electrode-based Biosensor for Sperm protein 17 detection as a Novel Cancer Biomarker" in **First International Conference on Technologies for Smart Green Connected Society 2021**, online globally on 29th - 30th November 2021 organized by Yamagata University, Japan.

2. Oral presentation on "Fabrication of MIP-based sensor for detection of trimethylamine N-oxide as health-care biomarker" on **Two-Day International Conference via Virtual Platform on Nanomedicine: Biomolecules for Human Health (NBHH-2021) Small Molecules, Big Opportunities!!** Organized by Kirori Mal College, University of Delhi, under the aegis of DBT Star College Scheme, from 27th-28th September, 2021.

1. Oral presentation on "A highly sensitive, label free and non-invasive molecularly imprinted polymer based electrochemical sensor for the detection of Gut microbiota derived trimethylamine N-oxide (TMAO)" on **7th Edition of International Conference on Nanotechnology for Better Living 2021 (NBL 2021)** jointly organized by NIT Srinagar and IIT Delhi, India from September 7-11, 2021.

Poster Presentation

11. Poster presentation on "*Advanced Nanocomposite Platform for Label-Free Gentamicin Detection: Leveraging Electrophoretically Deposited L-Cysteine Functionalized MoS2 @MWCNT*" in ***International Conference & Workshop on "Addressing Antibiotics Abuse in Community Using Biosensing Technologies***" from 25th -27th August 2023 at ILLL, University of Delhi**,** organized Bhagini Nivedita College in collaboration with Ulster University, Northern Ireland, UK.

10. Poster presentation on "*Decorating MoS2 nanosheet on reduced graphene oxide to fabricate a disposable Electrochemical biosensor for affordable sensing of SP17 cancer biomarker*" on **33rd Anniversary World Congress on Biosensors (BIOSENSORS 2023)** organized/sponsored by Elsevier/Biosensors & Bioelectronics at BEXCO, Busan, Republic of Korea from June 4-8, 2023.

9. Poster presentation on "*Electrochemical biosensing approach for SP17 cancer biomarker detection based on MoS2 nanosheet@reduced graphene oxide interface*" on **14th Annual International Workshop on Advanced Materials (IWAM) 2023**, organized and sponsored by the Ras Al Khaimah Center for Advanced Materials (RAK CAM) at Ras Al Khaimah, United Arab Emirates from the 19th to 21st of February 2023.

8. Poster presentation on "Electrochemical detection of SP17 cancer biomarker in human serum using self-assembled monolayers of biocompatible polymer modified disposable ITO electrode" on **3rd World Congress on Translational Cancer Research and Immunotherapy, 2023** organized by Mahatma Gandhi university of Medical Sciences and Technology, Jaipur, India from February 3-5, 2023.

7. Poster presentation on "A highly sensitive, label free and non-invasive molecularly imprinted polymer based electrochemical sensor for the detection of gut microbiome's metabolite as cancer biomarker" on **2nd World Congress on Cancer, 2020** organized by Mahatma Gandhi university of Medical Sciences and Technology, Jaipur, India from February 3-5, 2020.

6. Poster presentation on "A novel MoS2 nanosheet based electrochemical immunosensor sensing platform for a label free detection of Ampicillin" on **National Conference on Nano/Bio-Technology, 2019** organized by Special Centre for Nanoscience, Jawaharlal Nehru University and National Institute of Immunology, New Delhi from December 19-21, 2019.

5. Poster presentation on "Electrochemical detection of Antibiotic utilizing metal oxide nanostructure as sensing platform" on **National Science Day 2019** organized by Department of

Science and Technology, Govt. of India and Jawaharlal Nehru University, New Delhi.

4. Participated in the **102nd Indian Science Congress Association** held at University of Mumbai, Mumbai from January 3 to 7, 2015.

3. Participated in a BIOIGNITION PROGRAMME "Exploring the Emerging Paradigms of Biotechnology & Applied Microbiology" Organized by School of Biotechnology, **KIIT University**, Bhubaneswar.

2. Participated in an International Seminar on "Effects of Pollution on Human Health", jointly organized by Department of Chemistry, **University of Delhi** & **Indian Academy of Biomedical Sciences (IABS)**.

1. Participated in the 11th Symposium on Frontiers in Biomedical Research "Challenges In Human Health: Prevention, Diagnosis and Cure" organized by Dr B R Ambedkar Centre for Biomedical Research (ACBR), **University of Delhi,** from 19-21st February, 2018.

Workshops:

1) Participated in the workshop on **"Advanced spectroscopy Techniques for FTIR and FTNIR"** organized jointly by AIRF-JNU & PerkinElmer on 25th-26th July, 2019 at AIRF, Jawaharlal Nehru University, New Delhi.

2) Participated in UGC sponsored National Workshop on **"Hands on workshop on techniques in Biotechnology, Emerging application and the way forward"** Organized by Post Graduate Department of Biotechnology, VBU & Department of Biotechnology, St. Columba's College, Hazaribag (Jharkhand) In Association with **niTza Biologicals**, Hyderabad.

3) Participated in UGC sponsored National workshop on "**Hands on workshop in Bioinformatics & the way forward"** Organized by Annada College, Hazaribag (Jharkhand) In Association with **niTza Biolopgicals**, Hyderabad.

4) Participated in the Instructional Workshop on "Proteomics and Proteogenomics: Hands-on Protein Identification and Gene Discovery from Mass Spectrometry Data" organized at Acharya Narendra Dev College by **NNMCB (Delhi Node)** and **ANDC (DU)** from October 10-12, 2015.

PERSONAL INFORMATION

Nationality: Indian
Religion: Hindu
Sex: Male
Blood Group: B+
DOB: 1st November 1994
Age: 28 Years
Aadhaar Card No.- 2727 4715 4138
Passport issued by Republic of India:
Passport Number: S7481517
Date of Issue- 11/09/2018 & Date of Expiry- 10/09/2028
Indian Driving Licence: D02923549R
DL No. JH02 20220001 159
Type of Vehicle – LMV; MCGW
S/O – Mr. Mahendra Yadav & Mrs. Fulmati Devi
Residential Address
111, AT+PO+PS- Tatijharia, Hazaribagh, Jharkhand, INDIA - 825313
Contact No. +919934350780; +919773845937
Official Address
Nano-Bio Laboratory, Special Center for Nanoscience, Jawaharlal Nehru University
New Delhi-110067, INDIA

HOBBIES

- Rescue & take care of sick, helpless wild lives; Gardening; Cycling.
- Help mainly aged and physically challenged persons on road & railway station.
- Visiting new places & interacting with new people as well as situations.

REFEREES

1. Dr. Pratima R. Solanki
Assistant Professor,
Nano-Bio Laboratory,
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New Delhi- 110067
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2. Prof. (Dr.) Bansi D Malhotra
Professor, FNA, FNASc
Nanobioelectronics Laboratory
Department of Biotechnology
Delhi Technological University,
Delhi-110042
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3. Dr. Anil Kumar
Staff Scientist
Gene Regulation Laboratory
National Institute of Immunology
New Delhi-110067
Email: anilk@nii.ac.in

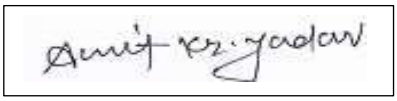
4. Dr. Saurabh Kumar
Assistant Professor
Department of Medical Devices
NIPER, Guwahati
Assam 781101
Email: saurabh@niperguwahati.in

DECLARATION

I declare that the foregoing information is correct and complete to the best of my knowledge and belief and nothing has been concealed.

Place: New Delhi

Date: 31/08/2023



(Amit Kumar Yadav)