



Archana Yadav, Ph.D.

**Assistant Professor, Department of ECE, Faculty of Engineering,
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[Google Scholar Citation](#) | [Orcid id](#) | [Scopus](#) | [Web of Science](#) | [Research Gate](#) | [LinkedIn](#)

PROFILE

- Dr. Archana Yadav is currently working as an Assistant Professor in the Department of Electronic and Communication Engineering.
- Her research focuses on the theoretical design and computational analysis of optical sensors for biomedical and healthcare applications.
- She has an extensive understanding of instrumentation and control, measurements, surface plasmon resonance, fiber Bragg grating, photonic crystal fiber, and biosensing.
- She has published more than 20 articles in peer-reviewed journals and conferences.
- Dr. Yadav earned her Ph.D. in Photonics from Amity University, Uttar Pradesh, Lucknow Campus.
- She holds an M.Tech. degree in Digital Communication from Bundelkhand Institute of Engineering and Technology, Jhansi (G.B.T.U. Lucknow) and a B.Tech. in Electronics and Instrumentation Engineering from the Institute of Engineering and Technology, Lucknow (U.P.T.U. Lucknow).
- Previously, she worked at B.N. College of Engineering, Lucknow, as a Lecturer and at I.E.T Lucknow as a guest faculty.

RESEARCH INTEREST:

- Computational Analysis of Optical devices for Biomedical and healthcare applications.
- Performance analysis for enhancing the sensing parameters of sensors.
- Synthesis of 2D and TMDC nanomaterials.
- Non-invasive detection of sugar level concentrations in visible and infrared region.
- Label free detections of medical disorder in biomedical applications.
- Non- Invasive Continuous glucose monitoring (CGM) and wearable devices.
- Optical Fiber Sensors.

SUMMARY OF RESEARCH ACCOMPLISHMENT:

- Total Impact Factor :26
- Number of Publication in IEEE Transactions :03
- Number of publications in SCI indexed journals :09
- Number of publications in Scopus indexed journals :03
- Number of publications in Non-Sci/Scopus but Peer :10

Reviewed	
➤ Number of publications in International Conferences	:04
➤ Number of Patents (Published/ Grant)	:02
➤ Book Chapters	:05
➤ Number of Book Edited	:02
➤ Presentation in international conferences	:03
➤ The referee for various scientific journals	:13
➤ Citations	:350
➤ H index	:08
➤ I10 index	:08
➤ Invited Talk as a Resource Person	:01

PROFESSIONAL MEMBERSHIP:

- Member of IEEE, Photonic Society, Young Professionals, Women in Engineering.
- Life Member of Solar Energy Society of India (SESI).

COURSE TAUGHT:

- Measurement and Instrumentation,
- Analog and Digital communication,
- Computer Organization and Architecture,
- Communication Engineering,
- Biomedical instrumentation and Sensors,
- Applied Electronics and Instrumentation,
- Automatic Control System,
- Basic Electronics,
- Electronics Instruments,
- Introduction to Artificial Intelligence and its applications

ADMINISTRATIVE/DEPARTMENTAL RESPONSIBILITY

- Departmental Mentor-Coordinator for Deeksharambh/orientation since July 2024.
- Departmental Examination Coordinator since July 2023.
- NAAC Criteria 3 Departmental in-Charge since, August 2023
- Designed Course Structure for the newly added B.Tech. programmed Communication and Computer Engineering.
- Undergraduate Final Year Project Coordinator, since July 2019-July 2023.
- NAAC Criteria 5 Departmental in-Charge from, July 2016 - July 2023.
- Member of proctorial board since July 2017.
- Member of departmental FDP organization committee.
- Departmental Website Coordinator since August 01, 2017 to till date.
- Departmental Examination Coordinator from January 2017 to June 2019.
- Member of syllabus Design Committee for B.Tech. (SPV).
- Member of syllabus Design/ Review Committee for B.Tech. (ECE), M.Tech. and dual degree.
- Member of Proctorial Board, Anti-ragging Committee, and Discipline Committee at the university level since July 2017.
- Advisor of Fiesta Help-desk committee since July 2017.

STUDENTS SUPERVISION

- B.Tech.: 12 groups
- M.Tech.: 06 Students

PUBLISHED/GRANT PATENTS

- Wearable health monitoring and curing device (IN 202111025557 A). Official Journal of Patent Journal no 25/ 2021. **(Published)**
- A System and Method for Performing Secure Transaction in Atm Using Remote Pin Login (2021104120 IP Australia). **(Grant)**

PUBLISHED/ACCEPTED SCI/SCOPUS RESEARCH PAPERS

- M. Mishra, S. Senapati, **Archana Yadav**, S.K. Tripathy, BaTiO₃ Boosted Silver-based SPR Sensor for Efficient Urine-glucose Detection in Pre-diabetic and Early Diabetic Stages, *Sensors and Actuators A: Physical*, 2024, 115895, ISSN 0924-4247, doi. 10.1016/j.sna.2024.115895. **(SCI Indexed, IF-4.1)**
- Ankita Kumari, **Archana Yadav**, O.P.Singh, Preeta Sharan, “A review of surface plasmon resonance (SPR) technology in biosensing: innovations, applications, and future trends” in *Journal of Optics*, Springer Nature, doi. 10.1007/s12596-024-02265-3. **(Scopus)**
- Shatrughna Kumar, **Archana Yadav**, Santosh Kumar, Boris A. Malomed, “Design and Simulation of SPR Sensors by Employing Silicon & Silicon-Nitride with Mono and Bimetal layers for Sensitivity Enhancement”, in *IEEE Sensors Journal*, doi: 10.1109/JSEN.2024.3355766. **(SCI Indexed, IF-4.3)**
- Shatrughna Kumar, **Archana Yadav**, Boris A. Malomed, “Bimetal Thin Film, Semiconductors, and 2D Nanomaterials in SPR Biosensors: An Approach to Enhanced Urine Glucose Sensing”, in *IEEE Transactions on NanoBioscience*, doi: 10.1109/TNB.2024.3354571. **(SCI Indexed, IF-3.9)**
- **Archana Yadav**, Madhusudan Mishra, Sukanta K.Tripathy, Anil Kumar, O.P.Singh, Preeta Sharan, “Improved Surface Plasmon Effect in Ag-based SPR Biosensor with Graphene and WS₂: An approach towards Low cost Urine-Glucose Detection”, in *Plasmonics Journal (Springer Nature)*, doi: 10.1007/s11468-023-01945-3. **(SCI Indexed, IF-3.0)**
- **Archana Yadav**, Anil Kumar, Preeta Sharan, Madhusudan Mishra, “Highly Sensitive Bimetallic-Metal Nitride SPR Biosensor for Urine Glucose Detection” in *IEEE Transactions on NanoBioscience*, doi: 10.1109/TNB.2023.3246535. **(SCI Indexed, Q1, IF-3.9)**

- **Archana Yadav**, Shatrughna Kumar, Anil Kumar, Preeta Sharan, “Effect of 2-D nanomaterials on sensitivity of plasmonic biosensor for efficient urine glucose detection” in **Frontiers in Materials**, vol.9, doi: 10.3389/fmats.2022.1106251. **(SCI Indexed, IF-3.2)**
- Shatrughna Kumar, **Archana Yadav**, Boris A. Malomed, “High performance surface plasmon resonance-based sensor using black phosphorus and magnesium oxide adhesion layer” in **Frontiers in Materials**, vol.10, doi: <https://doi.org/10.3389/fmats.2023.1131412>. **(SCI Indexed, IF-3.985)**
- **Archana Yadav**, Anil Kumar, Preeta Sharan, “Sensitivity Enhancement of Plasmonic Biosensor for urine Glucose Detection by employing Black Phosphorous”, in **OPTICA (Formerly known as Optical society of America)** Vol. 39, Issue 1, pp. 200-206 (2022) <https://doi.org/10.1364/JOSAB.444838>. **(SCI Indexed, IF-2.058)**
- **Archana Yadav**, Anil Kumar, Preeta Sharan, “Modeling, simulation and computational analysis of plasmonic optical sensor using BaTiO₃ in diabetes mellitus”, in **International Journal of Information Technology**, Springer Singapore, Vol 13, Issue 6, pp. 2163-2168 (2021). <https://doi.org/10.1007/s41870-021-0793-w>. **(SCOPUS Indexed)**
- **Archana Yadav**, Anil Kumar, Preeta Sharan, “Surface plasmonic resonance based five layered structure-biosensor for sugar level measurement in human”, in **Results in Optics Elsevier** (2020),1 100002. <https://doi.org/10.1016/j.rio.2020.100002>. **(SCOPUS Indexed)**
- Y.K.Prajapati, **Archana Yadav**, A.Verma, V.Sing, J.P.Saini, “Effect of metamaterial layer on optical surface plasmon resonance sensor”, in **Optik - International Journal for Light and Electron Optics**, Volume 124, Issue 18, September 2013, Pages 3607-3610, <https://doi.org/10.1016/j.ijleo.2012.12.021> . **(SCI Indexed, IF-2.84)**

PAPER PUBLISHED IN INTERNATIONAL CONFERENCES

- “Sensitivity Enhancement of Bi-metallic SPR Biosensor using BaTiO₃ for Non-Invasive Glucose Detection via Urine Sample” in **Sixth IEEE International Workshop on Recent Advances in Photonics (WRAP)**, December 7-9, 2023 at IIIT Allahabad, Prayagraj, U.P. India. **(Presented)**
- “Nano Photonic Crystal based Sensor for Diabetes Mellitus Detection” in **Sixth IEEE International Workshop on Recent Advances in Photonics (WRAP)**, December 7-9, 2023 at IIIT Allahabad, Prayagraj, U.P. India. **(Attended)**
- “2-D Transition Metal Dichalcogenides assisted SPR Biosensor for Rapid Detection of Urine Glucose” in **SPIE Advanced Biophonic Conference 2021** (Optical Society of Korea), Vol 12159, pp.5-14, SPIE. Event: SPIE Advanced Biophotonics Conference (SPIE ABC 2021), 2021, Busan, Republic of Korea, 4-6 November, 2021, Busan, Republic of Korea. **(Presented)**

- “Mono-Layer Graphene-Based Plasmonic Biosensor for Urine Glucose Detection” in International Conference on **Trends in Electronics and health Informatics (TEHI)**, Volume 376, pp.459-468 Springer .2021, 16th-17th, December, 2021 at PSIT Kanpur. **(Presented)**

PUBLISHED NON-SCI-SCOPUS BUT PEER REVIEWED RESEARCH PAPERS

- Pushpa Kumari, **Archana Yadav**, “Performance Analysis Of Energy Efficient Heterogeneous Cellular Networks” in International Journal for Science and Advance Research in Technology, Volume 8 Issue 5 – MAY 2022.
- Dharmendra, Qazi Saeed Ahmad, **Archana Yadav**, “Performance Analysis of Dual Hop Amplify and Forward Relaying Over Time Varying Fading Channel” in International Journal for Science and Advance Research in Technology, Volume 7 Issue 5 – MAY 2021.
- Mohd Javed Khan, **Archana Yadav**, Saif Ahmad, S. Hasan Saeed, “Comparative Analysis of Proportional Integral Derivative Controller Using CCII and DVCC”, in International Journal for Science and Advance Research in Technology, Volume 3 Issue 5 – MAY 2017.
- Saif Ahmad, Mohd Javed Khan, **Archana Yadav**, S. Hasan Saeed, “Review Of Discrete Cosine Transform, Accordion Discrete Cosine Transform, Discrete Wavelet Transform And Accordion Wavelet Transformation For Video Compression”, in International Journal for Science and Advance Research in Technology, Volume 3 Issue 5 – MAY 2017.
- **Archana Yadav**, Saif Ahmad, Mohd. Javed Khan, S. Hasan Saeed, “Sensitivity Enhancement of Metamaterial Based Five Layered SPR Sensor”, in International Journal for Science and Advance Research in Technology, Volume 3 Issue 5 – MAY 2017.
- Supriya Awasthi, Priya Singh, **Archana Yadav**, “Applications Of Optical Fiber Sensors In Wild Life: A Review, in International Journal for Science and Advance Research in Technology, Volume: 2, Issue: JULY 2016.
- Alka Pandey, **Archana Yadav**, “Image Processing Technique for The Enhancement of Brain Tumor Pattern”, in Journal of Research and Development in Applied Science and Engineering, Vol 9 , Issue 2, pp 1-4, 2016.
- Nudrat Sufiyan, **Archana Yadav**, “A Review Study of Advances in the Science and Technology of Carbon Nanotubes”, in Research and Reviews: Journal of Physics, Vol 5, issue 3, 2016.
- Amita Singh, **Archana Yadav**, S. Hasan Saeed, “A Comprehensive Study and Review on Wireless Sensor Networks, Based on Heterogeneous Energy Distribution & Multizone Algorithm”, in

International Journal of Advanced Research in Computer and Communication Engineering, Vol. 5, Issue 4, April 2016.

- Samar Siddiqui, **Archana Yadav**, “Optical Fiber Sensors Applications Analysis and Future Trends”, in International Journal for Science and Advance Research in Technology Volume: 1, Issue: 5, JANUARY 2015.

BOOK EDITED

- **Archana Yadav**, “Futuristic Trends in Electronics & Instrumentation Engineering”, Volume 3, Book 1, 2024, IIP Series, E-ISBN: 978-93-6252-491-1. Selfypage Developers Pvt. Ltd., Pushpagiri Complex, Beside SBI Housing Board, K.M. Road Chikkamagaluru, Karnataka.
- Imran Ullah Khan, Piyush Charan, **Archana Yadav**, “Telecommunication and Electronic Technology”, published by Aargon Press, New Delhi, India. ISBN:978-93-94070-25-7.

PUBLISHED BOOK CHAPTERS

- **Archana Yadav**, Anil Kumar, “Surface Plasmon Resonance (SPR) Based Biosensor for Sugar Monitoring via Urine Samples” in “Photonic Sensors for Biomedical Applications”, CRC Press, Taylor and Francis Group, Apple Academic Press.
 - **Archana Yadav**, Mohd. Ahmer, “Design of CORDIC Hardware Efficient shift-And-Add Algorithm for DSP Processors on FPGA Device using VHDL”, in “Circuit Design & Signal Processing”, Aargon Press, New Delhi 110012, India. ISBN:978-93-94070-53-0, 2021.
 - **Archana Yadav**, Mohd. Amir Rauf Khan, “Implementation of Wide band Frequency Synthesizer Base on DFS (Digital Frequency Synthesizer) controller using VHDL”, in “Circuit Design & Signal Processing”, Aargon Press, New Delhi 110012, India. ISBN:978-93-94070-53-0, 2021.
 - Vandana Mishra, **Archana Yadav**, “Analysis of Indian New Education Policy 2020 towards Achieving its Objectives in Rural Areas” in “Nep-2020: A Way to Towards Building New India”, World Publication lab Ghaziabad U.P. 201012 ISBN:978-93-90734-24-5, 2021 Chapter 11, pp121-134.
 - Amro Sadul, **Archana Yadav**, “Nano-Engineered materials for solar panels”, in “Emerging trends in non-conventional energy resources”, Aargon Press, New Delhi 110012. ISBN NO: 978-81-95188-45-1, 2021.
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