CURRICULUM VITAE

Dr. MANOJ KUMAR PATEL (M.Sc., Ph.D., Postdoc USA)
Assistant Professor & Principal Investigator
Nano-Biology Laboratory, School of Studies in Life Science
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Education:

Ph.D.	Biotechnology	2014	Jamia Millia Islamia & CSIR-NPL, New Delhi, India
M.Sc.	Biotechnology	2006	Guru Ghasidas Vishwavidyalaya, Bilaspur, India
B.Sc.	Microbiology	2004	Guru Ghasidas Vishwavidyalaya, Bilaspur, India

Professional Experience:

06/2016-Till Date	:	Assistant Professor at Pt. Ravishankar Shukla University, Raipur
06/2016-05/2017	:	Young Investigator at Regional Centre for Biotechnology, Faridabad
05/2015-05/2016	:	Postdoctoral Researcher at Oklahoma State University, USA
09/2014-05/2015	:	DSK-Postdoctoral Fellow at Jawaharlal Nehru University, New Delhi
07/2014-09/2014	:	Research Associate at IPFT, Gurgaon
05/2013-02/2014	:	Senior Researcher at CSIR-National Physical Laboratory, New Delhi
04/2010-03/2013	:	CSIR-SRF at CSIR-National Physical Laboratory, New Delhi
05/2009-03/2010	:	Senior Researcher at CSIR-National Physical Laboratory, New Delhi
03/2007-04/2009	:	Research Fellow at CSIR-IGIB, New Delhi

Awards and Acheivements:

YI Award (2016)	:	Awarded by Regional Centre for Biotechnology, Faridabad
Young Scientist (2014)	:	Awarded by Science & Engineering Research Board, New Delhi
DSK-Postdoc (2014)	:	Awarded by University Grant Commission, New Delhi
CSIR-SRF (2010)	:	Awarded by Council of Scientific & Industrial Research
Best Poster (2013)	:	CSIR-National Physical Laboratory, New Delhi
First Poster Prize (2012)	:	Indian Institute of Technology, Mandi
Dr. R.C.M. Prize (2013)	:	Jamia Millia Islamia, New Delhi

Research Interests:

- Nano-Biology & Nano-Technology
- Nano-Biosensor & Nano-Devices
- Molecular Biology & Molecular Diagnostics
- Medical Micro Biology & Infectious Diseases
- Biomaterials & Bio-Medical Applications
- Microfluidics and Lab-on-a-Chip Devices

Teaching Interests:

- Microbiology, Molecular Biology, and Nano-Biotechnology; specialized courses in Nanobiology, Biosensors, and Biomedical Instrumentation; with emphasis on research-oriented and experiential learning.

Research Publications:

- Riya Ritika Singh, Yashika Patel and Manoj Kumar Patel. Emerging Nano-Electrochemical Platforms for *Salmonella typhimurium* Detection. **Talanta** (2026) 298 (A): 128892 [I.F: 6.1].
- Riya Ritika Singh, Jeba Grace Tigga, Shivangi Kosma and Manoj Kumar Patel. Recent Advances in Nucleic Acid-Based Biosensors for Bacterial Pathogen Detection. **Microchemical Journal** (2025) 220,116435 [I.F: 5.10].
- Jeba Grace Tigga, Vinay Kumar Sahu and Manoj Kumar Patel. Next-Generation Metal-Based Tuberculosis Biosensing: From Conventional Methods to Nanoscale Innovations. **Microchemical Journal** (2025) 219:116134 [I.F: 5.10].
- Sujata Yadav, Riya Ritika Singh, Alok Kumar Sahu, Ashwini Kumar Gupta and Manoj Kumar Patel. Biosynthesis of Silver Nanoparticles from Streptomyces rochei and its Antibacterial Efficacy against Bacterial Pathogens. **Bioscience Biotechnology Research Communications** (2025) 18 (3) 151-157.
- Gayan Premaratne, Jinesh Niroula, Manoj K. Patel, W. Zhong, S. L. Suib, K. A. Kalkan and Sadagopan Krishnan. Electrochemical and Surface Plasmon Correlation of Serum Autoantibody Immunoassay with Binding Insights: Graphenyl *vs.* Mercapto-Monolayer Surface. **Analytical Chemistry** (2018) 90 (21): 12456-12463 [I.F: 6.70].
- Sandeep Kumar Verma, Ashok Kumar Das, Manoj K. Patel, Ashish Shah, Vinay Kumar, Saikat Gantait. Engineered Nanomaterials for Plant Growth and Development: A Perspective Analysis. **Science of the Total Environme**nt (2018) 630:1413-1435 [I.F: 8.00].
- Manoj K. Patel, Md. Azahar Ali, Sadagopan Krishnan, Ved Varun Agrawal, Al A. A. Kheraif, H. Fouad, Z. A. Ansari, S. G. Ansari and Bansi D. Malhotra. A Label-Free Photoluminescence Genosensor Using Nanostructure Magnesium Oxide for Cholera Detection. **Scientific Reports** (2015) 5:17384 [I.F: 3.90].
- Pratima R. Solanki, Manoj K. Patel, Md. Azahar Ali and Bansi D. Malhotra. Chitosan Modified Nickel Oxide Platform for Biosensing Applications. **Journal of Materials Chemistry B** (2015) 3: 6698-6708 [I.F: 5.70].
- Manoj K. Patel, Ved Varun Agrawal, Bansi D. Malhotra and S.G. Ansari. Nanostructured Magnesium Oxide: A Suitable Material for DNA Based Biosensors. **Materials Focus** (2014) 3:1-11.
- Manoj K. Patel, Md. Azahar Ali, Saurabh Srivastava, Ved Varun Agrawal, S. G. Ansari and Bansi D. Malhotra. Magnesium Oxide Grafted Carbon Nanotubes Based Impedimetric Genosensor for Biomedical Application. **Biosensors and Bioelectronics** (2013) 50: 406-413 [I.F: 10.50].

- Manoj K. Patel, Md. Azahar Ali, Md. Zafaryab, Ved Varun Agrawal, M. Moshahid Alam Rizvi, Z. A. Ansari, S. G. Ansari and Bansi D. Malhotra. Biocompatible Nanostructured Magnesium Oxide-Chitosan Platform for Genosensing Application. **Biosensors and Bioelectronics** (2013) 45: 181-188 [I.F: 10.50].
- Manoj K. Patel, Md. Azahar Ali, Ved Varun Agrawal, Z. A. Ansari, S. G. Ansari and Bansi D. Malhotra. Nanostructured Magnesium Oxide Biosensing Platform for Cholera Detection. **Applied Physics Letters** (2013) 102: 144106 [I.F: 3.60].
- Azahar Ali, P. R. Solanki, Manoj K. Patel, H. Dhayani, V. V. Agrawal, R. John and Bansi D. Malhotra. Highly Efficient Microfluidics Nano Biochip Based on Nanostructured Nickel Oxide. **Nanoscale** (2013) 5: 2883-2891 [I.F: 5.80].
- Manoj K. Patel, Jai Singh, Manish K. Singh, Ved V. Agrawal, S.G. Ansari and Bansi D. Malhotra. Tin Oxide Quantum Dot Based DNA Sensor for Pathogen Detection. Journal of **Nanoscience and Nanotechnology** (2013)13: 1671-1678 [I.F: 1.13].
- Manoj K. Patel, Md. Zafaryab, M. Moshed Alam Rizvi, Z. A. Ansari, Ved Varun Agrawal, Bansi D. Malhotra and S. G. Ansari. Antibacterial and Cytotoxic Effect of Magnesium Oxide Nanoparticles in Bacterial and Human Cells. **Journal of Nanoengineeing and Nanomanufacturing** (2013) 3: 162-166.
- Manoj K. Patel, P. R. Solanki, Sachin Khandelwal, Ved V. Agrawal, S.G. Ansari and Bansi D. Malhotra. Self-Assembled Monolayer Based Nucleic Acid Sensor for *Vibrio cholerae* Detection. **Journal of Physics Conference Series** (2012) 358: 012009.
- Pratima R. Solanki, Manoj K. Patel, Ajeet Kaushik, M.K. Pandey, R.K. Kotnala and Bansi D. Malhotra. Sol-gel Derived Nanostructured Metal Oxide Platform for Bacterial Detection. **Electroanalysis** (2011) 23: 2699-2708 [I.F: 2.30].
- Manoj K. Patel, P. R. Solanki, A. Kumar, S. Gupta, S. Khare and Bansi D. Malhotra. Electrochemical DNA Sensor for Neisseria Meningitidis Detection. **Biosensors and Bioelectronics** (2010) 25: 2586-2591 [I.F: 10.50].
- Manoj K. Patel, P. R. Solanki, S. Seth, S. Gupta, S. Khare, A. Kumar and Bansi D. Malhotra. *CtrA* Gene Based Electrochemical Sensor for Meningitis Detection. **Electrochemistry Communications** (2009) 11: 969-973 [I.F: 4.20].
- Manoj K. Patel, Suman and Ashok Kumar. Recent Laboratory Techniques for Diagnosis of Bacterial Meningitis. **Bioscience and Biotechnology Research Communications** (2008) 01:1-10.

Book Chapters:

- Jeba Grace Tigga, Riya Ritika Singh, Smriti Rakesh and **Manoj K. Patel**. Green Biotechnology for Sustainable Development. Engineered Nanoplatforms for Sustainable Disease Management: Advances in Detection, Drug Delivery and Therapeutics [Accepted].
- Riya Ritika Singh, Jeba Grace Tigga, Smriti Rakesh, Yashika Patel and **Manoj K. Patel**. Green Biotechnology for Sustainable Development. Eco-Intelligent Biosensors: Harnessing Green Biotechnology for Sustainable Healthcare Diagnostics [Accepted].

- Smriti Rakesh, Jeba Grace Tigga, Riya Ritika Singh, Vinay Kumar and **Manoj K. Patel**. Green Biotechnology for Sustainable Development. Green-Synthesised Metallic Nanoparticles: A Biotechnological Strategy for Sustainable Agriculture [Accepted].
- **Manoj K. Patel** and Pratima R. Solanki. Nanobiotechnology for Sensing Applications: From Lab to Field. Nanomaterials Based Immunosensors for Clinical Diagnostics Applications. ***Apple Academic Press***, Waretown, New Jersey 08758 USA (2015) [ISBN: 9781771883283].

Meeting Abstract Publications:

- Gayan Premaratne, **Manoj K.Patel** and Sadagopan Krishnan. A Novel Graphene Modified Electrochemical Sensor for Ultrasensitive Detection of T1D Serum Autoantibody. **ECS Meeting Abstracts** (2017) MA2017-01: 1747.
- Sadagopan Krishnan, Vini Singh, **Manoj K. Patel** and Jinesh Niroula. Surface Plasmon Immunoarrays for Non-Glucose Diabetes Biomarkers. **ECS Meeting Abstracts** (2017) MA2017-01: 1936.
- **Manoj K. Patel**, Ved V. Agrawal, B. D. Malhotra and S.G. Ansari. DNA Based Diagnosis of Vibrio cholerae Infection. **Journal of Proteins and Proteomics** (2012) 3: 39.
- **Manoj K. Patel**, Ved V. Agrawal, Z.A. Ansari, B. D. Malhotra and S.G. Ansari. Use of DNA Sequence in Nano-Biosensing Techniques. **Journal of Natural Science Biology and Medicine** (2011) 2: 134-135.
- **Manoj K. Patel**, Sunil Gupta, Shashi Khare, Ashok Kumar. DNA Based Diagnosis of Bacterial Meningitis. **Indian Journal of Clinical Biochemistry** (2007) 22: 215.

Research Highlights:

- Genosensor to Detect Cholera. **Nature India** (2016) **[DOI:10.1038/nindia.2015.176]**
- Patel et al. **Materials Focus** (2014) 3: 1-11 **[Journal Cover Page Article]**
- Patel et al. **J. Nanoeng. Nanomanuf**. (2013) 3: 162-166 **[Journal Cover Page Article]**
- Sensor to Detect Cholera Quickly. **Nature India** (2013) **[DOI:10.1038/nindia.2013.95]**
- Meningitis Sensor. **Nature India** (2010) **[DOI:10.1038/nindia.2010.66]**
- DNA Detectives for Meningitis. **Nature India** (2009) **[DOI:10.1038/nindia.2009.132]**

Research Projects/Grants:

- **Major:** Science & Engineering Research Board (SERB) Sponsored Start-up Research Grant (SRG) Project on "**Development of Nanomaterial Based Nanobiosensors for Clinical Diagnostics Applications**" (File No. SRG/2019/000754), Total Amount: **Rs. 23,70,000/-** (Tenure: 2020-2022).
- **Minor:** Pt. Ravishankar Shukla University Sponsored Seed Money Research Project on "**Nanomaterials Based Nanobiosensor for Quick Detection of Bacterial Pathogens.**" (Letter No. 2364/Acad./RGSM/2025) Total Amount: **Rs. 5,000,00/-** (Tenure: 2026-2028).

Academic/Administrative Responsibilities:

Member	**:**	Institutional **Biosafety Committee**, AIIMS Raipur, 2025-Present
Member	**:**	BoS in "**Microbiology**" ITM University, New Raipur, 2024-Present
Member	**:**	Board of Studies in "**Bioscience**" PRSU, Raipur, 2017-Present
Member	**:**	**Staff Council**, SoS in Life Science, 2017-Present
Member	**:**	**DRC**, SoS in Life Science, 2017-Present
Member Secretary	**:**	**DRC**, SoS in Life Science, 2023-2024.
Member	**:**	**DRC**, Govt. Nagarjuna Science College, Raipur, 2024-Present
Member Secretary	**:**	**Grievance Cell**, SoS in Life Science, 2017-Present
Member	**:**	**Anti Ragging** Committee, SoS in Life Science, 2022-Present
Member	**:**	Pt. Ravishankar Shukla University, Website Review Committee
Member	**:**	Pt. Ravishankar Shukla University, Edited Book Committee

Participation in UGC-MMTTC Training Programme:

- Participated in UGC Sponsored Refresher Programme in **"Interdisciplinary Refresher Course in Biological Science"** organized by UGC-Malaviya Mission Teacher Training Centre at Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India from September 15-27, 2025.
- Participated in UGC Sponsored Short Term Course in **"Capacity Building Programme (CBP) in Indian Knowledge System (IKS)"** organized by UGC-Human Resource Development Centre at Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India from 28^{h} February - 05th March 2025.
- Participated in UGC Sponsored Short Term Course in **"Innovation, Start-up, and Industry-Academia Linkage"** organized by UGC-Human Resource Development Centre at Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India from 10th-15th February 2025.
- Participated in UGC Sponsored Refresher Programme on **"Life Science (Interdisciplinary)**" under MM-TTP organized by UGC-Malaviya Mission Teacher Training Centre, Guru Ghasidas Vishvavidyalaya, Bilaspur, Chhattisgarh from 14th - 26th October 2024.
- Participated in UGC Sponsored Short Term Course in **"E-Content Development"** organized by UGC-Human Resource Development Centre at Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India from 01st - 08th August 2024.
- Participated in UGC Sponsored "**NEP 2020 Orientation and Sensitization Programme**" (NEP-04) under MM-TTP organized by UGC-Malaviya Mission Teacher Training Centre, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India from 16th - 24th January 2024.
- Participated in UGC Sponsored Refresher Programme on **"Bioscience (Interdisciplinary)**" under MM-TTP organized by UGC-Malaviya Mission Teacher Training Centre, Banaras Hindu University, Varanasi, Uttar Pradesh from 06th -19th December 2023.

- Participated in UGC Sponsored Online Workshop on **"MOOCs Online Courses and Open Educational Resources"** organized by UGC-Human Resource Development Centre at Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India from 14th - 19th February 2022.

- Participated in UGC Sponsored Refresher Programme on "**Life Science and Biotechnology: Recent Trends, Advances and Challenges**" organized by UGC-Centre for Professional Development in Higher Education (HRDC-Centre) at University of Delhi, Delhi, from 25th January 2021 to 08th February 2021.

- Participated in UGC Sponsored Orientation Programme (OP-02) on "**Quality of Higher Education**" organized by UGC-Human Resource Development Centre at Pt. Ravishankar Shukla University, Raipur, India from 09th September 2019 to 01st October 2019.

Workshops / Conferences / Seminars: Talk

- Presenter: **Manoj K. Patel**
  Title: Magnesium Oxide Based Nucleic Acid Sensor for Cholera Detection
  Symposium: Proceeding of International Symposium on Physics & Technology of Sensors (ISPTS-1, 2012) held on 08-10 March 2012. Jointly Organized by Centre for Materials for Electronics Technology (C-MET) and University of Pune, India.

- Presenter: **Manoj K. Patel**
  Title: Magnesium Oxide-Chitosan Nano-Biocomposite for *Vibrio cholerae* Detection
  Workshop: Proceeding of **India - Japan** Workshop on Biomolecular Electronics & Organic Nanotechnology for Environment Preservation (IJWBME-2011) held on **07-10 December 2011**. Organized by Department of Electrical Engineering and Computer Sciences University of Hyogo, Japan.

- Presenter: **Manoj K. Patel**
  Title: Nucleic Acid Sensor for Quick Detection of Cholera Caused by *Vibrio cholerae*
  Conference: Proceeding of International Interdisciplinary Science Conference on Nano-Biotechnology: An Interface between Physics and Biology (I-ISC, 2010) held on 02-04 December 2010. Organized by Centre for Interdisciplinary Research in Basic Science, Jamia Millia Islamia, Jamia Nagar, New Delhi, India

- Presenter: **Manoj K. Patel**
  Title: DNA Biosensor for the Diagnosis of *N. meningitidis*
  Workshop: **National** Workshop on the topic "Immobilized Enzyme Technology for Sensors (NWIETS-2007)" held on **24 August - 02 September 2007**. Organized by Faculty of Life Science, Maharishi Dayanand University, Rohtak, Haryana, India.

Workshops / Conferences / Seminars: Poster

- Presenter: **Manoj K. Patel**
  Title: Surface Plasmon Resonance Imaging of Onset of Type-1 Diabetes Based on Biomarkers other than Glucose
  Conference: Proceeding of **ACS Penta-sectional Regional Meeting** held on **09 April 2016** at Oklahoma Wesleyan University, Oklahoma, United States.

- Presenter: **Manoj K. Patel**
  Title: Nanostructured Magnesium Oxide Based Genosensor for Biomedical Application
  Conference: Proceeding of **National** Conference on Biomedical Science and Technology (NCBST-2013) held on **21-22 November 2013**. Organized by CSIR-National Physical Laboratory, New Delhi, India.

- Presenter: **Manoj K. Patel**
  Title: Biocompatible Nanostructured Magnesium Oxide for Genosensing Application
  Seminar: Proceeding of 17th **National** Seminar on Physics and Technology of Sensors (NSPTS-2013) held on **11-13 March 2013**. Organized by Centre for Interdisciplinary Research in Basic Science, Jamia Millia Islamia, New Delhi, India.

- Presenter: **Manoj K. Patel**
  Title: Magnesium Oxide Based Photoluminescence DNA Biosensor for Bacterial Detection
  Workshop: Proceeding of **India - Japan** Workshop on Biomolecular Electronics & Organic Nanotechnology for Environment Preservation (IJWBME-2013) held on **13-15 December 2013**. Organized by Delhi Technological University and Department of Electrical Engineering, Kyushu Institute of Technology, Japan.

- Presenter: **Manoj K. Patel**
  Title: Nanostructured Magnesium Oxide Based DNA Sensor
  Symposium: Proceeding of **National** Symposium on Nano-Biotechnology (NSNT-2012) held on **01-02 June 2012**. Organized by Indian Institute of Technology, Mandi, Himachal Pradesh, India.

- Presenter: **Manoj K. Patel**
  Title: DNA Based Diagnosis of *Vibrio cholerae* Infection
  Conference: Proceeding of **International** Interdisciplinary Science Conference on Protein Folding and Diseases (I-ISC, 2012) held on **08-10 December 2012**. Organized by Centre for Interdisciplinary Research in Basic Science, Jamia Millia Islamia, Jamia Nagar, New Delhi, India.

- Presenter: **Manoj K. Patel**
  Title: Nucleic Acid Sensor Based on SnO_2-QDs for Cholera Detection
  Conference: Proceeding of **International** Conference on Nanomaterials & Nanotechnology (ICNANO-2011) held on **18-21 December 2011**. Jointly Organized by International Association of Advanced Materials (IAAM), Advanced Materials Letters, VBRI Press and University of Delhi, India.

- Presenter: **Manoj K. Patel**
  Title: Use of DNA Sequence in Nano-Biosensing Techniques
  Conference: Proceeding of **International** Interdisciplinary Science Conference on Bioinformatics: An Interface between Computer Science and Biology (I-ISC, 2011) held on **15-17 November 2011**. Organized by CIRBSc, Jamia Millia Islamia, Jamia Nagar, New Delhi, India.

- Presenter: **Manoj K. Patel**
  Title: Nanostructured Magnesium Oxide Based Electrochemical DNA Sensor for Cholera Detection
  Conference: Proceeding of **International** Conference on Bio-Materials and Implants: Prospects & Possibilities in the New Millennium (BIO-2011) held on **21-23 July 2011**. Organized by Central Glass and Ceramic Research Institute (CGCRI), Kolkata, India.

- Presenter: **Manoj K. Patel**
  Title: Nanostructured Zirconium Oxide Based Genosensor for Cholera Detection
  Workshop: Proceeding of **India - Japan** Workshop on Biomolecular Electronics & Organic Nanotechnology for Environment Preservation (IJWBME-2009) held on **17-20 December 2009**. Organized by Department of Science and Technology Centre on Biomolecular Electronics, National Physical Laboratory, Dr. K. S. Krishnan Marg, New Delhi, India & Department of Biological Functions and Engineering, Graduate School of Life Science Systems Engineering, Kitakyushu, Kyushu Institute of Technology, Japan.

- Presenter: **Manoj K. Patel**
  Title: Sensor for Quick Molecular Diagnosis of Meningitis Caused by *Neisseria meningitidis*
  Symposium: Proceeding of **National** Symposium on New Trends on Biosensor Technology (NSNTBT-2009) held on **17-19 January 2009**, Organized by Department of Physics, Hindustan College of Science & Technology, Farah (Mathura), U.P, India.

- Presenter: **Manoj K. Patel**
  Title: Amperometric Molecular Biosensor for Diagnosis of Infectious Disease Meningitis
  Conference: Proceeding of 49th Annual Conference of Association of Microbiologists of India (AMI), entitled "**International** Symposium on Microbial Biotechnology: Diversity, Genomics and Metagenomics, held on **18-20 November 2008**, Organized by Department of Zoology, University of Delhi, India.

- Presenter: **Manoj K. Patel**
  Title: DNA Biosensor for Bacterial Meningitis in Humans
  Conference: Proceeding of 48th Annual Conference of Association of Microbiologists of India (AMI), entitled "Microbes: Bio-factories of the Future, held on **18 - 21 December 2007**, Organized by Indian Institute of Technology, Chennai, Tamilnadu Unit, Association of Microbiologists of India.

- Presenter: **Manoj K. Patel**
  Title: DNA Based Diagnosis of Bacterial Meningitis
  Conference: Proceeding of 34th **National** conference of Association of Clinical Biochemists of India (ACBI), held on **17-20 December 2007**, Organized by Escorts Heart Institute & Research Centre Limited, New Delhi, India.

- Authors: Sanjay Kumar Verma, Riya Ritika Singh, **Manoj K. Patel**
  Title: Recent Techniques for *M. tuberculosis* Detection
  Conference: International e-Conference on "Recent Advances in Biological Sciences & Opportunities in Entrepreneurship" held on **07- 08 January 2022**. Organized by School of Studies in Biotechnology, Ravishankar Shukla University, Raipur, India.

- Authors: Riya Ritika Singh, Sanjay Kumar Verma, **Manoj K. Patel**
  Title: Emerging Techniques for *Salmonella typhi* Detection
  Conference: International e-Conference on "Recent Advances in Biological Sciences & Opportunities in Entrepreneurship" held on **07- 08 January 2022**. Organized by School of Studies in Biotechnology, Ravishankar Shukla University, Raipur, India.

- Authors: P. Riya Ritika Singh, Sujata Yadav, Alok Sahu, Ashwini Kumar Gupta, **Manoj K. Patel**
  Title: Antibacterial Activity of Biosynthesized Silver Nanoparticles by endophytic *streptomyces rochei.*
  Conference: National Conference on "Multidisciplinary Trends and Innovation towards Health for All" held on **14- 15 April 2023**. Organized by Department of Rural Technology & Social Development, Guru Ghasidas Vishwavidyalaya, Bilaspur, India.

- Authors: Jeba Grace Tigga, P. Riya Ritika Singh, **Manoj K. Patel**
  Title: Recent Diagnostics Approach for the Detection of *Mycobacterium tuberculosis*
  Seminar: National Seminar on "Innovations and Entrepreneurship in Biotechnology (NSIEB-2023)" held on **08- 09 December 2023**. Organized by Department of Biotechnology, Guru Ghasidas Vishwavidyalaya, Bilaspur, India.

- Authors: P. Riya Ritika Singh and **Manoj K. Patel**
  Title: Emerging Electrochemical Platform for *Salmonella typhimurium* Detection
  Conference: International Conference on "Recent Advances in Biological Sciences (ICRABS-2025)" held on **08- 09 October 2025**. Organized by Department of Botany & Zoology, Rajeev Gandhi Govt. P.G. College, Ambikapur, Sarguja, Chhattisgarh.

- Authors: Jeba Grace Tigga, Vinay Kumar Sahu and **Manoj K. Patel**
  Title: Next Generation Tuberculosis Biosensing: From Conventional Methods to Nanoscale Innovations.
  Conference: International Conference on "Recent Advances in Biological Sciences (ICRABS-2025)" held on **08- 09 October 2025**. Organized by Department of Botany & Zoology, Rajeev Gandhi Govt. P.G. College, Ambikapur, Sarguja, Chhattisgarh.

- Authors: Smriti Rakesh and **Manoj K. Patel**
  Title: Impact of Nano-Green Magnets for Agri-Environmental Health.
  Conference: International Conference on "Recent Advances in Biological Sciences (ICRABS-2025)" held on **08- 09 October 2025**. Organized by Department of Botany & Zoology, Rajeev Gandhi Govt. P.G. College, Ambikapur, Sarguja, Chhattisgarh.

Workshops / Conferences / Seminars: Attended

- One Day Workshop on **"Electrochemistry and its Applications"** participated at SoS in Physics, Pt. Ravishankar Shukla University, Raipur held on 11th November 2025.
- One Day Webinar on **"From Idea to Patent: Understanding the Filling Process"** participated at Pt. Ravishankar Shukla University, Raipur held on 04th October 2024.
- National Webinar on "**Science and Technology for Innovations, Entrepreneurship and Jobs**" participated at Pt. Ravishankar Shukla University, Raipur held on 17 March 2021.
- International Seminar on **"Recent Advances in Sensors for Human Healthcare"** participated at Pt. Ravishankar Shukla University, Raipur held on 29 November 2019.
- Presented Poster entitled **"Nucleic Acid Biosensors for Clinical Diagnostics"** in Regional Centre for Biotechnology (RCB) colloquium held on 29th -30th September 2016.
- 22nd Annual Review Meet on **"DBT Network Project on Brucellosis"** participated at Jawaharlal Nehru University (JNU), New Delhi held on 21st - 22nd November 2014.
- National Symposium on "**New Horizon in Basic and Clinical Research**" participated at All India Institute of Medical Sciences (AIIMS), New Delhi held on 16th April 2012.
- National Symposium on "**Translational Research in Health Sciences**" participated at All India Institute of Medical Sciences (AIIMS), New Delhi held on 24th November 2009.
- National Workshop on "**Photonics**" participated at Dayal Singh College, University of Delhi, New Delhi held on 27th October 2009.
- 2nd National Conference on "**Innovations in Indian Science**, Engineering and Technology" participated at NPL, New Delhi held on 17 -19 July 2009.
- National Seminar on "**Environmental Lung Diseases**" participated at Vallabhbhai Patel Chest Institute, New Delhi held on 06 April 2009.
- International Symposium on "**Novel Strategies for Targeted Prevention and Treatment of Cancer**" participated at Jawaharlal Nehru University (JNU), New Delhi held on 19 -20 December 2008.
- National Workshop on "**Immobilized Enzyme Technology for Sensors (NWIETS - 2007)**" attended at Maharishi Dayanand University, Rohtak, Haryana held on 24 August - 02 September 2007.
- National Seminar on "**Emerging Horizons of Biotechnology**" attended at Guru Ghasidas Vishwavidyalaya, Bilaspur, held on 10 - 12 November 2006.

Reviewer of the Scientific Journals:

- **Nature:** Scientific Reports
- **Elsevier:** Sensor and Actuators B, Biosensors and Bioelectronics
- **Springer:** Applied Biochemistry & Biotechnology, 3-Biotech
- **Royal Society of Chemistry:** Journal of Materials Chemistry B
- **American Chemical Society:** ACS Sustainable Chemistry & Engineering
- **American Scientific Publishers:** Sensor Letters
- **Dove Press:** Reports in Electrochemistry, Nano-Biosensors in Disease Diagnosis Medical Devices: Evidence and Research, Nanotechnology, Science and Applications
- **Scietechnol:** Journals of Nanomaterials & Molecular Nanotechnology
- **MDPI:** Biosensors

Professional Skills:

- **Microbiology:** Culture and Identification of Microorganisms, Molecular and Biochemical Characterizations, Handling of Infectious Bacterial Pathogens in Biosafety Levels (BSL-1, BSL-2, BSL-3 and BSL-4).
- **Biotechnology:** DNA Isolation, Polymerase Chain Reaction (PCR), Agarose Gel Electrophoresis, SDS-PAGE, Microbial, Plant and Animal Tissue Culture, DNA Sequencing and Sequence Analysis.
- **Nanotechnology:** Synthesis of Nanomaterials (Metal Oxides, Nanocarbon Materials & Quantum Dots), Characterizations, Application of Nanomaterials for Biosensing and Clinical Diagnostics.
- **Biosensor and Nano-Devices:** Bio-Electrochemistry, Nanobiosensors, Microfluidics and Lab-on-a-Chip Devices.
- **Instrumentation:** Fourier Transform Infrared Spectroscopy (FT-IR), UV-Vis/NIR Spectrophotometer, X-Ray Diffraction (XRD), Photoluminescence (PL), Surface Plasmon Resonance Imaging (SPR-i), Cyclic Voltammetry (CV), Differential Pulse Voltammetry (DPV), Electrochemical Impedance (EIS), Contact Angle (CA), Atomic Force Microscopy (AFM), Scanning Electron Microscopy (SEM), Transmission Electron Microscopy, Zetasizer Measurement, Ellipsometry for Thin Film Deposition.
- **Scientific Software's Applications:** Primer and Probe Designing, NCBI, PubMed, PDB Database, Analytical Software's, Bioinformatics Software, Office Automation (M.S. Office), All Operating Systems and Operation of Research Oriented Software's.

Research / Teaching Summary:

Total Journals Publication	:	26	Total Impact Factor	:	**117**
Total Edited Book	:	01	Total Citations	:	**878**
Total Book Chapter	:	04	Total h-Index	:	14
Total National Conference	:	08	Total i10-Index	:	15
Total International Conference	:	11	Journals Cover Page Article	:	02
Total Research Experience	**:**	**18 Y**	**Total Teaching Experience**	**:**	**8.6 Y**

Research Supervision:

Ph.D. Scholar	:	**03**	Ongoing	2020-Till Date
Project Assistant	:	01	Completed	2020-2022
M.Sc. Dissertation	:	03	Completed	2024-2025
M.Sc. Internship	:	05	Completed	2025

Country Visited:

- **United States of America (USA) :** Postdoctoral Research Work

Postgraduate / Ph.D. Course Work Teaching:

M.Sc. Bioscience / M.Sc. Microbiology	:	Instrumentation and Techniques
M.Sc. Bioscience (Common Paper)	:	Biostatics and Computer Applications
	:	Microbiology
M.Sc. Microbiology	:	Medical Microbiology
	:	Fermentation Technology
	:	Environmental Microbiology
	:	Microbial Biotechnology
CBCS (Common Paper)	:	Nano-Biology
Value Added Course (Common Paper)	:	IPR, Biosafety and Bioethics
Ph.D. Course Work (Common Paper)	:	Research methodology

Web Research Profile:

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Research Gate	:	https://www.researchgate.net/profile/Manoj_Patel9
Publons	:	https://publons.com/researcher/1662642/manoj-kumar-patel
Google Scholar	:	https://scholar.google.co.in/citations?user=rsZApxoAAAAJ&hl=en
Nano-Biology Lab	:	https://manojkpatel24.wixsite.com/mysite

Media News:

Navbharat	:	https://8e6d893e-edfd-4b52-a173-4d810bc8df88.filesusr.com/ugd/25f3a5_fdc651cd2a9e427fa71ad840a47c270b.pdf
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