# Targeting Antimicrobial Drug Resistance by Amine Functionalized Metal Nanoparticles


**Thesis submitted for the**
**Award of Degree**

**DOCTOR OF PHILOSOPHY**

**BY**

**ATUL KUMAR TIWARI**

**Under the Supervision**

**Prof. P.C. Pandey**

**"Department of Chemistry"**
**Indian Institute of Technology**
**(Banaras Hindu University)**
**Varanasi-221005**
**India**

**Roll No. 19051502** **2023**

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**Prof. P. C. Pandey**
**(Supervisor)**
**Department of Chemistry,**
**Indian Institute of Technology**
**(Banaras Hindu University),**
**Varanasi–221005**

Prof. P. C. Pandey
Department of Chemistry
Indian Institute of Technology (BHU)
Varanasi-221005

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Pandey
Prof. P. C. Pandey
Department of Chemistry
Indian Institute of Technology (BHU)
Varanasi-221005

**Prof. P. C. Pandey**
**(Supervisor)**
**Department of Chemistry**
**Indian Institute of Technology**
**(Banaras Hindu University)**
**Varanasi- 221005**

**Prof. Y. C. Sharma**
**Head of Department**
**Department of Chemistry,**
**Indian Institute of Technology**
**(Banaras Hindu University),**
**Varanasi- 221005**

विभागाध्यक्ष / HEAD
रसायन विज्ञान विभाग
Department of Chemistry
भारतीय प्रौद्योगिकी संस्थान (का.हि.वि.वि.)
Indian Institute of Technology (B.H.U.)
वाराणसी-२२१००५ / Varanasi-221005

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DEDICATED TO MY LOVING FAMILY...

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**Date: 29/08/2023**

Atul kumar tiwari

**Place: Varanasi**

**(Atul Kumar Tiwari)**

# List of Symbols

| | |
|---|---|
| **3-APTMS** | 3-Aminopropyltrimethoxysilane |
| **3-GPTMS** | 3-Glycidoxypropyltrimethoxysilane |
| **PEI** | Polyethyleneimine |
| **HCl** | Hydrogen Chloride |
| **MDR** | Multi-drug resistance |
| **AgNPs** | Silver nanoparticles |
| **AuNPs** | Gold nanoparticles |
| **PdNPs** | Palladium nanoparticles |
| **MIC** | Minimum Inhibitory concentration |
| **MBC** | Minimum bactericidal concentration |
| **TEM** | Transmission electron microscopy |
| **HRSEM** | High Resolution Scanning Electron Microscope |
| **XPS** | X-ray photoelectron spectroscopy |
| **XRD** | X-ray Diffraction |
| **DLS** | Dynamic light scattering |
| **SAED** | Selected area electron diffraction pattern |
| **UV-Vis** | Ultraviolet-Visible |
| **FL Spectroscopy** | Fluorescence Spectroscopy |
| **Λ** | Wavelength |
| **Θ** | Angle (degree) |
| **Mw** | Molecular weight |
| **Mg** | Milli gram |

| | |
|---|---|
| **mM** | Micro molar |
| **nM** | Nanomolar |
| **Nm** | Nanometer |
| **mM** | Millimolar |
| **S** | Time (second) |
| **M** | Minute |
| **LOD** | Limit of detection |
| **OD** | Optical density |
| **PEI-AuNP@Van** | Vancomycin Polyethyleneimine stabilized gold nanoparticle |
| **FACS** | Fluorescence-activated cell sorting |
| **CLSM** | Confocal laser scanning microscopy |
| **BSA** | Bovine Serum Albumin |
| **Tyr** | Tyrosine |
| **Trp** | Tryptophan |
| | |

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