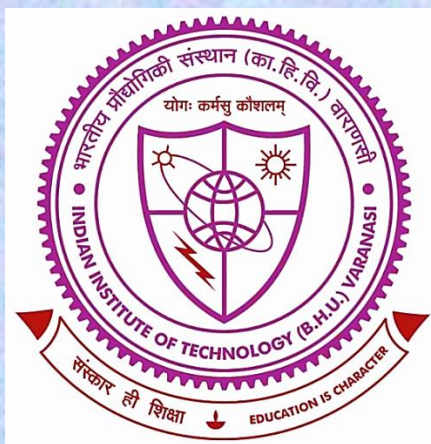


Functional nanomaterial based composites and their biomedical applications



*Thesis submitted in partial fulfillment for the
Award of Degree*

DOCTOR OF PHILOSOPHY

By

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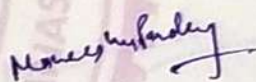

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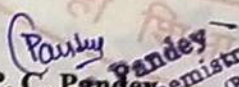
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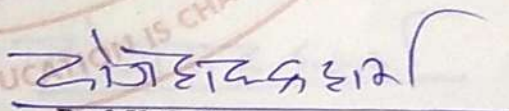
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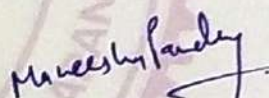
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.....

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List of Symbols/Abbreviations

3-APTMS	:3-Aminopropyltrimethoxysilane
PEI	: Polyethyleneimine
AgNO₃	: Silver nitrate
AuNPs	: Gold nanoparticles
AgNPs	: Silver nanoparticles
BMNPs	: Bimetallic nanoparticles
HA	: Hydroxyapatite
NMNPs	: Noble Metal nanoparticles
EDX	: Energy-dispersive X-ray spectroscopy
TEM	: Transmission electron microscopy
HRSEM	: High Resolution Scanning Electron Microscope
XRD	:X-ray Diffraction
FTIR	: Fourier transform infrared
TGA	: Thermogravimetric analysis
DLS	: Dynamic light scattering
SAED	: Selected area electron diffraction pattern
UV-Vis	: Ultraviolet-Visible
CLSM	: Confocal laser scanning microscopy
BET	: Brunauer-emmett-teller surface sreasanalysis
λ	: Wavelength
θ	: Angle (degree)
μg	: micro gram
μl	: micro litre
μm	: micro meter
s	: Time (second)

List of Symbols/Abbreviations

PBS	Phosphate buffer solution
TBA	: Thiobarbituric acid
MTT	: 3-[4,5-dimethylthiazol-2-yl]-2,5 diphenyl tetrazolium bromide
ROS	: Reactive oxygen species
NBT	: Nitroblue tetrazolium
LPO	: Lipid peroxidation
MDA	: Malondialdehyde
Cur-AuNPs	: Curcumin functionalized gold nanoparticles
CEO-fAuNP	: Clove essential oil functionalized gold nanoparticles
DMSO	: Dimethyl sulfoxide
BSA	: Bovine Serum Albumin
FBS	: fetal bovine serum
DMEM	: Dulbecco's modified Eagle's medium
DPH	: 1,6-Diphenyl-1,3,5-hexatriene
DPPH	: 2,2-Diphenyl-1-picrylhydrazyl
DCFH-DA	: 2',7'-dichlorodihydrofluorescein diacetate
MIC	: Minimum Inhibitory Concentration
MDR	: Multi drug resistance