DEVELOPMENT OF BINARY, TERNARY, AND HIGH ENTROPY Ti ALLOYS FOR BIOMEDICAL IMPLANT APPLICATIONS

Thesis submitted in partial fulfillment for the

Award of Degree

Doctor of Philosophy

By

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RUPESH KUMAR

LIST OF FIGURES

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LIST OF ABBREVIATIONS & SYMBOLS

SS 316	:	Low carbon stainless steel
Co-Cr	:	Cobalt-Chromium
Ni	:	Nickel
cpTi	:	Commercially pure titanium
HCP	:	Hexagonal closed packed
BCC	:	Body centered cubic
mm	:	Millimeter
XRD	:	X-Ray Diffraction
HR-SEM	:	High- resolution scanning electron microscopy
EDAX	:	Energy Dispersive X-Ray Analysis
XPS	:	X-ray photoelectron spectroscopy
N	:	Newton
OCP	:	Open-circuit potential
EIS	:	Electrochemical impedance spectroscopy
SBF	:	Simulated body fluid
SEM	:	Scanning electron microscopy
SPM	:	Scanning probe microscopy
GPa	:	Giga Pascal
°C	:	Degree centigrade
Ti	:	Titanium
Nb	:	Niobium
Cu	:	Copper
PM	:	Powder metallurgy
µm	:	Micrometer
BT-XRD	:	Bench top X-Ray Diffraction
RPM	:	Revolution per minute
H	:	Hour
s	:	Second
min	:	Minute
Å	:	Angstrom

○	:	Degree
Kgf	:	Kilogram force
kN	:	Kilo newton
mL	:	Milliliter
g	:	Gram
cm	:	Centimeter
Hz	:	Hertz
mV	:	Millivolt
FBS	:	Foetal bovine serum
PBS	:	Phosphate buffer saline
pH	:	Potential of Hydrogen
Ω	:	Ohm
µA	:	Micro Ampere
eV	:	Electron volt
nm	:	Nanometer
R_a	:	Average roughness
R_q	:	Root-mean-square roughness
S_a	:	arithmetic mean height
S_q	:	squared mean height
%	:	Percentage