

CERTIFICATE

This is to certify that the work contained in the thesis entitled: “**TO STUDY THE DEGRADATION BEHAVIOR IN MAGNESIUM BASED METAL MATRIX COMPOSITE**” by **POOJA RAI** has been carried out under our supervision and this work has not been submitted elsewhere for a degree.

It is further certified that the student has fulfilled all the requirements of Comprehensive Examination, Candidacy and SOTA for the award of Ph.D. Degree.

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I, **Ms. Pooja Rai**, certify that the work embodied in this Ph.D. thesis is my own bonafide work carried out by me under the supervision of **Prof. Vinay Kumar Singh** and co-supervision of **Dr. Raj Kumar Chaturvedi** from **December 2015 to October 2021** at **Department of Ceramic Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi**. The matter embodied in this Ph.D. thesis has not been submitted for the award of any other degree/diploma.

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DEDICATED
to
My Beloved Family

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Abbreviations

AAS	A tomic A bsorption S pectroscopy
ASTM	A merican S ociety for T esting and M aterials
BAG	B io A ctive G lass
BSE	B ack S cattered E lectron
EDS/EDX	E nergy D ispersive X -ray
FTIR	F ourier T ransform I nfrared S pectroscopy
HAp	H ydroxy A patite
JCPDS	J oint C ommittee on P owder D iffraction
MMCs	M etal M atrix C omposites
OCP	O pen C ircuit P otential
SBF	S imulated B ody F luid
SEM	S canning E lectron M icroscopy
TCP	T ricalcium P hosphate
XRD	X R ay D iffraction

Symbols

$^{\circ}\text{C}$	Degree Centigrade
α	Alpha
β	Beta
θ	Theta
λ	Lambda
Hv	Vickers Hardness
I_{corr}	Corrosion current
E_{corr}	Corrosion potential
C_r	Corrosion rate
%	Percentage
©	Copyright
μm	Micrometer
nm	Nanometer
cm	Centimeter
Kg	Kilogram
G	Gram
min	Minute
Sec	Second
\AA	Angstrom
ρ	Density