

LIST OF SYMBOLS AND ABBREVIATIONS

Al_2O_3	Aluminum oxide
ASTM	American Society for Testing and Materials
$\text{Ca}_3(\text{PO}_4)_2$	Tricalcium phosphate
$\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$	Hydroxyapatite
$\text{CaO-P}_2\text{O}_5\text{-SiO}_2$	Bioactive glass
CIP	Cold isostatic pressing
CO_2	Carbon dioxide
FESEM	Field emission scanning electron microscopy
H_2O	Water
HA	Hydroxyapatite
HIP	Hot isostatic pressing
Hv	Vickers hardness
i.e.	that is (id est)
JCPDS	Joint Committee of Powder Diffraction Standard
K_{Ic}	Fracture toughness
Mg	Magnesium
Mg^{2+}	Magnesium cation
MgCO_3	Magnesium carbonate
$\text{MgCO}_3 \cdot 5\text{H}_2\text{O}$	Carbonate pentahydrate
$(\text{Mg,Fe})_2\text{Al}_3(\text{Si}_5\text{AlO}_{18})$	Cordierite
$\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$	Magnesium nitrate hexahydrate
MgO	Magnesium oxide
$\text{Mg}(\text{OEt})_2$	Magnesium ethoxide
Mg-PSZ	Magnesia partially stabilized zirconia
MgSiO_3	Enstatite/protoenstatite
Mg_2SiO_4	Forsterite

$(\text{Mg,Fe}^{2+})_2\text{SiO}_4$	Wadsleyite
$(\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O})$	Magnesium nitrate hexahydrate
$\text{Mg}_3\text{SiO}_4\text{O}_{10}(\text{OH})_2$	Talc
$\text{Na}_2\text{OCaOP}_2\text{O}_3\text{-SiO}$	Bioglass
NH_4F	Ammonium fluoride
$(\text{NH}_4)_2\text{SiF}_6$	Ammonium hexafluorosilicate
pHEMA	Poly(2-hydroxyethyl methacrylate)
PVA	Polyvinyl alcohol polymer
Rpm	Revolution per minute
RSM	Response surface methodology
SEM	Scanning electron microscopy
Si	Silicon
SiC	Silicon carbide
SiCl_4	Silicon tetrachloride
Si_3N_4	Silicon nitride
SiO_2	Silicon oxide/quartz
SiO_4^{4-}	Silicate anion
SOFC	Solid Oxide Fuel Cells
TEOS	Tetra ethyl ortho silicate
THA	Total hip arthroplasty
THR	Total hip replacement
TiO_2	Titanium oxide
TKA	Total knee arthroplasty
UHMWPE	Ultra-high molecular-weight polyethylene
wt. %	Weight percentage
XRD	X-Ray diffraction
Y-TZP	Yttria-tetragonal zirconia polycrystals
ΔG	Free energy

ϵ

Epsilon (dielectric constant)