

## LIST OF SYMBOLS & ABBREVIATIONS

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$M_f$	Martensitic Finish
$M_s$	Martensitic Start
$A_s$	Austenitic Start
$A_f$	Austenitic Finish
$\sigma_s$	Starting stress of Austenite and Martensite phases
$\sigma_f$	Final stress of Austenite and Martensite phases
$M_f^{SM}$	Martensite final temperature
$\zeta_d$	Temperature induced or twinned Martensite
$\zeta_s$	Stress induced Martensite
$S$	Piola-Kirchoff stress
$\theta$	Coefficient of thermal expansion
$D$	Modulus of SMA material
$D_a$	Modulus of fully Austenitic SMA material
$D_m$	Modulus of fully Martensitic SMA material
$\Omega$	Transformation coefficient
$\varepsilon_L$	Maximum residual strain
$E$	Green-Lagrange strain tensor
$\sigma$	Cauchy stress tensor
$\varepsilon$	Deformation strain tensor
CAD	Computer Aided Design

FEA	Finite Element Analysis
MI-THA	Minimally invasive total hip arthroplasty
CT	Computed Tomography
HU	Hounsfield Unit
DICOM	Digital Imaging and Communication in Medicine
2D	Two-Dimensional
3D	Three-Dimensional
PEEK	Polyether-ether-ketone
SCP	Screw configuration profiles
ASIS	Anterosuperior iliac spine
SD	Standard Deviation
SMA	Shape memory alloy
SME	Shape memory effect
NiTi	Nitinol
SE	Superelasticity
NiTi	Nickel titanium
M	Martensite
A	Austenite
PE	Pseudoelasticity
MR	Magnetic resonance imaging
THR	Total hip replacement
THA	Total hip arthroplasty

THS	Total hip surgery
CoCr	Cobalt Chromium
UHMWPE	Ultra high molecular weight polyethylene
PMMA	Polymethyl methacrylate
HA	Hydroxy apatite
PFAC	Press-fit acetabular cup
FE	Finite Element