

APPENDIX A. ACRONYMS AND ABBREVIATIONS

°C	degrees centigrade (Celsius)
°F	degrees Fahrenheit
µm	micrometer(s)/micron(s)
µs	microsecond(s)
1D, 1-D	one-dimensional
2D	two-dimensional
2DTBC	two-dimensional triaxially-braided composite
2T	two-thickness
3D, 3-D	three-dimensional
3DAP	three-dimensional atom probe
3-DEP	Three Dimensional Engineered Preform
3T	three-thickness
A/SP	Auto/Steel Partnership
ABS	acrylonitrile-butadiene-styrene
ac	alternating current
ACC	Automotive Composites Consortium
ACC-PD	American Chemistry Council, Plastics Division
ACCU	ACC Underbody
ADI	austempered ductile cast iron
AEL/ALE	Arbitrary Eulerian Lagrangian/Arbitrary Lagrangian Eulerian
AFM	atomic-force microscope/microscopy
AFM1	single-layer antiferromagnetic
AFMD	double-layer antiferromagnetic
AFR	amplified frequency ratio
AFS	American Foundry Society
AGT	Atmospheric Glow Technologies
AHSS	advanced high-strength steel
AISI	American Iron and Steel Institute
AJAX	Asynchronous JavaScript and XML
Al	aluminum
AKDQ	aluminum-killed draw quality
ALMR	arbitrary local mesh replacement
AMD	Automotive Metals Division (of USAMP)
ANL	Argonne National Laboratory
ANOVA	analysis of variance
ANSI	American National Standard Institute
AP	acidification potential
APC	American Plastics Council
API	application program interface
APS	Advanced Photon Source
ARA	Automotive Recycling Association
ARC	(International) Automobile Recycling Congress
ARD	anisotropic rotary diffusion
ARL	Army Research Laboratory
A/SP	Auto/Steel Partnership
ASB	adiabatic shear band
ASTM	American Society for Testing and Materials

at	atomic
ATR-FTIR	attenuated total reflectance Fourier transform infrared (spectroscopy)
AWS	American Welding Society
B	boron
bcc	body-centered cubic
BCJ	Bammann-Chiesa-Johnson
BDE	brominated diphenyl ethers
BE	blended element/elemental
BEM	boundary element method
BET	Brunauer-Emmett-Teller
BFI	body-frame-integral
BH	bake hardenable
BIF	barrier improvement factor
BIW	body-in-white
BL	black liquor
BLRT	bond-line read-through
BLS	Brillouin light scattering
BME	ballistic mass efficiency
BOF	body-on-frame
BPEL	Business Process Execution Language
BR2	Bead-Rod
BS	British Standard
BSEF	Bromine Science and Environmental Forum
C	carbon
C	compression
CA	cooperative agreement
CAD	computer-aided design/drafting
CAE	computer-aided engineering
CAFE	corporate average fuel economy
CANMET	Canada Centre for Mineral & Energy Technology
CAVS	Center for Advanced Vehicular Systems
CB	cylinder block
cc	cubic centimeter
CC	continuous cast/casting
CCT	continuous cooling transformation
CD	compact disc
CDC	channel die compression
CDF	cumulative distribution function
CF	carbon fiber
CFM	continuous-filament mats
CG	conjugate gradient
CLM	confocal laser microscopy
CLTE	coefficient of linear thermal expansion
cm	centimeter
CNC	computerized numerical control
CNF	carbon nanofiber
CO ₂	carbon dioxide
COD	crack opening displacement
COE	coefficient of expansion

COF	coefficient of friction
COM	Conference of Metallurgists
COV	coefficient of variance/variation
CP	commercial purity/complex phase
CPMT	Center for Powder Metallurgy Technology
CPU	central processing unit
cr	cold rolling
Cr	chromium
CRADA	Cooperative Research and Development Agreement
CSM	Composite Spray Molding/Colorado School of Mines
CSP	Continental Structural Plastics
CT	computed tomography/cross-tension
C/T	compression/tension
CTE	coefficient of thermal expansion
Cu	copper
CVDM	Center for Virtual Design and Manufacturing
CWL	cell-wall loading
CWT	Changing World Technologies
DACE	design and analysis of computer experiments
DAIS	direct-access interface system
DAS	data-acquisition system
DAW	drawn-arc welding
DBF	draw bend formability
DBMS	Database Management System
DBS	draw-bend springback
DBU	diaza(1,3)bicycloundecane
dc	direct current
DC	direct chill/die cast
DFL	dry-film lubricant
DFT	density functional theory/discrete Fourier transform
DIC	digital imaging correlation
DICTRA	Diffusion Controlled TRAnsformations
DLFT	direct long-fiber thermoplastic
DMA	dynamic mechanical analysis/analyzer
DOE	U.S. Department of Energy
DoE	design of experiment
DoF	degree(s) of freedom
DoD	Department of Defense
DP	dual phase (steel)
DRV	dynamic recovery
DRX	dynamic recrystallization
DQ	drawing quality
DQSK	drawing-quality special-killed/draw-quality, semi-killed (steel)
DR	dimension reduction
DS	driver seat
DSA	dynamic strain aging
DRIFT	Direct Reinforced/Reinforcement Fabrication Technology
DRIFTS	diffuse reflectance infrared Fourier transform spectroscopy
DRX	dynamic recrystallization
DSA	dynamic strain aging

DSC	differential scanning calorimeter/calorimetry
DTA	differential thermal (thermogravimetric) analysis/analyzer
DTS	Deep Thermal Shock Test
DTUL	deflection temperature under load
DWT	die wear test
E	Young's modulus (of elasticity)
EAM	embedded-atom method
EB, E-beam	electron beam
EBSD	electron backscatter diffraction
ECAE	equal channel angular extrusion
ECAP	equal channel angular extrusion
ECD	electron capture detector
EDS	energy dispersive X-ray spectra
EDX	energy-dispersive X-ray
EEM	Element Exchange Method
EERE	Energy Efficiency and Renewable Energy
EG	electro-galvanized
EGLD	extended generalized lambda distribution
EH&S	environmental, health, and safety
EHF	electrohydraulic forming
EIFS	equivalent initial flaw size
EIS	electrochemical impedance spectroscopy
ELV	end-of-life vehicle
EMF	electromagnetic forming
EMT	Eshelby-Mori-Tanaka
EMTA	Eshelby-Mori-Tanaka approach
EP	eutrophication potential
EPA	Environmental Protection Agency
EPFL	Ecole Polytechnique Fédérale de Lausanne (Swiss Federal Institute of Technology)
EPOC	Engineering Project Oversight Committee
EPR	endpoint reference
ERW	electric resistance welding
ESB	enterprise service bus
ESR	electron spin resonance
eV	electron volt(s)
EVO	engineering virtual organization
EWI	Edison Welding Institute
FAME	Flexible Advanced Metamodeling Estimator
FAR	fiber aspect ratio
F_b	normalized back force
fcc	face-centered cubic
FCVT	FreedomCAR Vehicle Technologies
Fe	iron
FE	finite element
FEA	finite-element analysis
FEC	front-engine cover
FEFRAC	finite-element fracture
FEG-SEM	field-emission gun scanning electron microscope (microscopy)

FEM	finite-element modeling
FESEM	field-emission scanning electron microscope (microscopy)
FFNN	feed-forward neural network
FFI	full-frontal impact
FGPC	Future Generation Passenger Compartment
FHWA	Federal Highway Administration
FLAPW	full-potential linearized augmented plane wave
FLC	forming limit curves
FLCA	front-left control arm
FLD	fiber length distribution/forming-limit diagram
FM	ferromagnetic
FMEAM	force-matching embedded-atom method
FMVSS	Federal Motor Vehicle Safety Standard
FOD	fiber-orientation distribution
FORM	first order reliability method
FOTS	first-order Taylor series
FP	Focal Project (ACC)
FRP	fiber-reinforced plastic
FRPMC	fiber-reinforced polymer-matrix composite
FS	failure sampling
FSP	fiber saturation point
FSW	friction-stir welded/welding
FSSW	friction-stir spot weld/welding
FTC	Federal Trade Commission
FTIR	Fourier transform infrared
FVF	fiber volume fraction
FWHM	full-width at half maximum
FY	fiscal year
g	gram(s)
GA	genetic algorithm/galvannealed (steel)
gal.	gallon(s)
GaBi	Ganzheitliche Bilanzierung software
GBD	generalized beta distribution
GC	gas chromatography
GC-ECD	gas chromatography–electron-capture detector
GC-MS	gas chromatograph(y)-mass spectrometer(ry)
Gen	Generation (as in Generation I, II, or III AHSSs)
GE	General Electric
GDIS	Great Designs in Steel
GGA	generalized gradient approximation
GHG	greenhouse gas
GJ	gigajoule(s)
GLD	generalized lambda distribution
GM	General Motors Corporation
GMAB	gas metal arc brazing
GMAS	Group Membership Authorization Service
GMAW	gas metal arc welding
GMSE	generalized mean square error
GMT	governing metal thickness
GND	geometrically necessary dislocation

GOS	grain orientation spread
GP	Guinier-Preston/Gaussian process
GPEC	Global Plastics Environmental Conference
gpm	gallon(s) per minute
GRAM	grid resource allocation management
gridFTP	grid file transfer protocol
GT4	Global Toolkit 4
GUI	graphical user interface
GWP	global-warning potential
h, hr	hour
H	hydrogen
HAZ	heat-affected zone
HBA	hydroxybenzoic acid
HCF	high-cycle fatigue
HCl	hydrochloric acid
hcp	hexagonal close-packed
HDG	heavy duty galvanized/hot-dip galvanized (galvanized)
HDH	hydride-dehydride
HDPE	high-density polyethylene
HDPE	high-density polyethylene
HEC	high elongation core
HEEDS	Hierarchical Evolutionary Engineering Design System
Hz	hertz
HEXRD	high-energy X-ray diffraction
HFVFSI	High Fiber Volume Fraction Sequential Inclusion
HIMAC	high-integrity magnesium automotive castings
HiMECC	Hierarchical, Micro-Experimental and Computational Characterization
HIPing	hot isostatic pressing
HIPS	high-impact polystyrene
HMPP	high-modulus polypropylene
HNA	hydroxynaphthoic acid.
HPDC	high-pressure die casting
HPLC	high-performance liquid chromatography
hr	hot rolling
HS	high-spin
HSB	hot-stamped boron
HSBS	hot-stamped boron steel
HSLA	high-strength, low-alloy
HSS	high-strength steel
HTML	High-Temperature Materials Laboratory
HTTP	hypertext transfer protocol
H/V	Holloman/Voce
HWL	hardwood lignin
IA	indentation area
IABC	International Automotive Body Congress
IAFR	integrated amplified-frequency ratio
ICME	Integrated Computational Materials Engineering
ICP/MS	induction-coupled plasma/mass spectroscopy
ID	indentation depth/inner diameter

IDDRG	International Deep Drawing Research Group
IF	interstitial-free
IHS	Insurance Institute for Highway Safety
IISI	International Iron & Steel Institute
IMR	Institute for Metal Research
in	inch(es)
I/O	input/output
IP	integration points/intellectual property
IPT	in-plane transverse
IQ+T	isothermal quench and tempering
IR	infrared
IS	importance sampling
ISO	International Standards Organization
ISRI	Institute of Scrap Recycling Industries
ISV	internal state variable
IT	information technologies
ITC	independent technical consultant
ITP	International Titanium Powder
J2EE	Java 2 Platform, Enterprise Edition
JB	Java Business Integration
JCI	Johnson Controls, Inc.
JD	Job Descriptor
JMS	Java Message Service/Job Metadata Service/job monitoring service
jpm	jobs per minute
JSDL	Job Submission Description Language
JSS	job status service/Job Submission Service
K	hydraulic permeability
kA	kiloampere(s)
KBFB	kenaf-bast-fiber bundle
Kg, kg	kilogram(s)
kHz	kilohertz
Kip, kip	kilopound(s) (1 kilopound = 1,000 pounds)
kJ	kilojoule(s)
km	kilometer(s)
kN	kiloNewton(s) (force unit)
KR	Kriging
Ksi	kips per square inch
lb(s).	pound(s)
LBNL	Lawrence Berkeley National Laboratory
LC	long crack
LCA	life-cycle analysis
LCF	low-cycle fatigue
LCCF	low-cost carbon fiber/Low Cost Carbon Fiber (initiative)
LCI	life-cycle inventory
LCM	liquid composite molding
LDA	local-density approximation
LDH	limited dome height
LDPE	low-density polyethylene

LEAP	local-electrode atom probe
LFI	long fiber injection
LFI-PUR	Long Fiber Injection - Polyurethane
LFT	long fiber thermoplastic
LHS	Latin Hypercube Sampling
LIBS	laser-induced breakdown spectroscopy
LM	Lightweighting Materials
LPPM	low-pressure permanent mold
LPS	liquid phase sintering
LRDV	large rear-drive vehicle
LS	lap-shear/low-spin
LSF	laser shock forming
LSEM	large-strain extrusion machining
LSF	laser shock forming
LSMC	laminated sheet molding compound
LSTC	Livermore Software Technology Corporation
LTC	large thin casting
LU	laser ultrasonics
LW	laser-welded
LWFS	Lightweight Front Structure
m	meter(s)
M	million (used with dollar sign and numeral)
M&P	material and process
MA	methyl acetate
MAG	microwave-assisted gasification
MAP	microwave-assisted plasma
MBC	main bearing cap
MC	Monte Carlo/moisture content
MCS	Monte-Carlo simulation
MD	molecular dynamics
MDS	Multi-scale Design System
MEAM	modified embedded-atom method
MEARS	Mass Efficient Architecture for Roof Strength
MEKP	methyl ethyl ketone peroxide
MENA	Magnesium Elektron of North America
meV	millielectron volt(s)
MFE	magnesium front end
MFEDD	Magnesium Front End Design and Development (AMD603—USAMP project)
MFERD	Magnesium Front End Research and Development (AMD604—USAMP project)
MFG	molded fiberglass
MFR	melt flow rate
Mg	magnesium
MHz	megahertz
MI	melt index
MIG	metal inert gas
MIT	Massachusetts Institute of Technology
min	minute(s)
MIST	Metal Infusion Surface Treatment

M-K	Marciniak-Kuczynski
ml	milliliter(s)
mm	millimeter(s)
MMI	Michigan Molecular Institute
MMV	multi-material(s) vehicle
MOE	modulus of elasticity
MOO	multi-objective optimization
MOR	modulus of rupture
Mn	manganese
MnS	manganese sulfide (sulphide)
Mo	molybdenum
MPa	megapascal(s)
MPCC	Magnesium Powertrain Cast Components
MPIE	Manufacturing Process Induced Effects
MPIF	Metal Powder Industries Federation
MPP	most probable point of failure
MPS	material and process system
MPT	multipurpose Test Ware
MR&TD	Magnesium Research and Technology Development
MRI	Magnesium Research Institute
ms	millisecond(s)
MS	mass spectroscopy/mass spectra/characterized length scale of interaction with Microstructural Features/martensitic steel/Master of Science
MSC	microstructurally small crack
MSF	multistage fatigue
MSST	Mississippi State University
MS&T	Materials Science and Technology
MTL	Materials Technology Laboratory
MTT	Materials Technical Team (FreedomCAR)
MWS	minimum weld size
MWV	MeadWestvaco Corporation
N	Newton
N/D or N.D.	not detected
NA	numerical aperture/North America(n)
NADCA	North American Die Casting Association
NASA	National Aeronautics and Space Administration
NC	numerical control/neighborhood compliance
NCAP	New Car Assessment Program
NCC	National Composite Center
ND	normal direction
NDE	nondestructive evaluation
NDI	nondestructive inspection
NDT	nondestructive testing
NEXAFS	near-edge X-ray absorption fine structure (spectroscopy)
NFC	natural-fiber composite
NHTSA	National Highway Transportation Safety Administration
Ni	nickel
NiMH	nickel-metal hydride
NIOSH	National Institute for Occupational Health and Safety
NIST	National Institute for Standards and Technology

NIT	nanoindentation test
NIR	near infrared
nm	nanometer(s)
Nm	Newton meter(s) (measure of force/torque)
NM	nonmagnetic
NMR	nuclear magnetic resonance
NOx	nitrogen oxides
NPC	natural-fiber polymer (polyolefin) composite
NPSS	nano-precipitate-strengthened steel
NRT	National Recovery Technologies, Inc.
NSF	National Science Foundation
NTRC	National Transportation Research Center
NUCAPT	Northwestern University Center for Atom Probe Tomography
NVH	noise, vibration, and harshness
NVT	number-volume-temperature
NWU	Northwestern University
O	oxygen
OD	outside diameter
ODB	oven-dry-basis/Offset Deformable Barrier
OEM	original equipment manufacturer
OFAT	one-factor-at-a-time
OFHC	oxygen-free high-conductivity
OFI	offset frontal impact
OGSA	Open Grid Services Architecture
OGSA-DAI	Open Grid Services Architecture Data Access and Integration
OM	optical microscope/microscopy; optimum microstructure
ORNL	Oak Ridge National Laboratory
OSU	Ohio State University
P	phosphorous
P4	programmable powdered preform process
PA	phased-array/prealloyed
PAH	polycyclic aromatic hydrocarbon
PAN	polyacrylonitrile
PAPRICAN	Pulp and Paper Research Institute of Canada
PAW	projector augmented wave
PBDE	polybrominated diphenyl ether
PBS	portable batch system
PBT	polybutylene terephthalate
PC	polycarbonate
PCB	polychlorinated biphenyl
PCBN	polycrystalline cubic boron nitride
PDF	probability distribution function/probability density function
PE	polyethylene
PET	polyethylene terephthalate
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonates
phr	parts per hundred resin
PI	principal investigator
PIM	powder injection molding/powder impression molding

PIV	particle image velocimetry
PLC	Portevin-Le Châtelier (effect)
PM	permanent mold; powder metal/metallurgy
PMC	polymer-matrix composite
P/M	powder metal/powder metallurgy
PMCT	probabilistic microstructural continuum theory
PNGV	Partnership for a New Generation of Vehicles
PNNL	Pacific Northwest National Laboratory
POCP	photochemical ozone creation potential
PP	polypropylene
PP/PE	polypropylene/polyethylene
PPF	pulse pressure forming
PPM, ppm	part(s) per million
PPO	polyphenylene oxide
PR	polynomial regression
ps	picosecond(s)
PS	polystyrene
PSC	Project Steering Committee (MFERD)/physically small crack
psi	pounds (force) per square inch
PSIA	pounds per square inch absolute
PSN	particle stabilized nucleation
PSO	particle swarm optimization
PSP	processing-structure-property
PTC	Project Technical Committee (MFERD)/project technical coordinator
PTFE	polytetrafluoroethylene
PU	polyurethane
PURCC	Polyurethanes Recycle and Recovery Council
PVC	polyvinyl chloride
PW	plain weave
Py-GC/MS	pyrolysis-gas chromatography/mass spectra
Q&P	quenching and partitioning
Q-P-T	quenching, partitioning, and tempering
QA	quality assurance
QRM	quarterly review meeting
QT	quench temperature
R	stress ratio/bend radius
R&D	research and development
R&R	repeatability and reproducibility
RA	relative accuracy
RaFC	random-fiber composite
RBDO	reliability-based design optimization
RBF	radial basis function
RD	rolling direction
RFQ	request for quote/quotation)
RH	relative humidity
RI	resonance inspection
RLS	Raman light scattering
RMS	root mean square
RMSE	root mean square error

ROS	reactive oxidative species
RPM, rpm	revolutions/rotations per minute
RS	response surface
RSA	Random Sequential Adsorption
RSC	rear-seal carrier/reduced strain closure
RSL	RAISE specification language
RSM	response service methodology/response surface methodology
RSW	resistance spot weld/welding
RT	room temperature
RTOS	real-time operating system
RUC	representative unit cell
RVE	representative volume element
RWD	rear-wheel drive
s, sec	second(s)
S	sulfur
SAE	Society of Automotive Engineers
SAML	Security Assertion Markup Language
SBC	single-board computer
SBIR	Small Business Innovation Research
sc	simple cubic
SCC	stress-corrosion cracking
SCMD	Structural Cast Magnesium Development
SD	standard deviation
SDAS	secondary dendrite-arm spacing
SE	strain energy
SEA	specific energy absorption
Seagull	a trademark of Herrick Scientific Products, Inc.
SEL	solvent extracted lignin
SEM	scanning electron microscope/microscopy
SES	Society of Engineering Science
SF ₆	sulfur hexafluoride
SFC	single fiber composite
SG	specific gravity
Sh	rolled sheet per plate
SHB	split Hopkinson bar
SHPB	split-Hopkinson pressure bar
Si	silicon
Si ₃ N ₄	silicon nitride
SIMP	solid isotropic material with penalization
SIMS	secondary ion mass spectrometry
SIR	seat with integrated restraint
SLC	Sub-Liquidus Casting
SLI	starting, lighting, ignition
SLS	super lap shear
SMC	sheet molding compound
Sn	tin
SO ₂	sulfur dioxide
SOA	service-oriented architecture
SOAP	simple object access protocol
SOC	substance of concern

SOP	structural oil pan/standard operating procedure
SOPO	Statement of Program Objectives
SORM	second order reliability method
SORPAS	Simulation and Optimization of Resistance, Projection, and Spot Welding Processes
SOW	statement of work
SP	single phase
SPARC	Strategic Planning and Review Committee
SPBK	support bracket
SPD	severe plastic deformation
SPE	Society of Plastics Engineers
SPF	superplastic forming
SPR	self-piercing rivet/riveting
SQL	structured query language
SRB	Storage Resource Broker
SRCLID	Southern Regional Center for Lightweight Innovative Design
SRIM	structural reaction injection molding
STD	standard seat (without integrated restraint, cf “SIR” above)
STL	sound transmission loss
STTR	Small Business Technology Transfer
SUV	sport-utility vehicle
SVDC	super vacuum die casting
SVE	statistical volume element
SVR	support vector regression
SWE	spot weld element
SWL	softwood lignin
SWSG	Structural Weld Sub-Group
t	ton/thickness
T	temperature/ton(s)
T	tension
T ³	time-temperature-tension
TA	transmission area
TAPPI	(previously “the Technical Association of the Pulp and Paper Industry, now just “TAPPI”)
TBF	TRIP aided bainitic ferrite
T/C	tension/compression
T-CAM	Tuskegee Center for Advanced Materials
TC	transcrystalline region
TD	transverse to rolling direction/transverse direction
TE	thermoelectric
TEM	transmission electron microscope/microscopy
T _g	glass transition temperature
TGA	thermogravimetric analysis/analyzer
ThD	thermal drilling
Ti	titanium
TiB ₂	titanium diboride
TiCl ₄	titanium tetrachloride
TIG	tungsten inert gas
TLCP	thermotropic liquid-crystal polymer
TMAC	Test Machine for Automotive Crashworthiness

TMCP	thermomechanically controlled processing
TMP	thermomechanical pump/thermomechanical processing
TMS	The Minerals, Metals & Materials Society
TPI	Troy Polymers, Inc.
TPO	thermoplastic olefins
TRC	textile reinforced composites
TRC-NCMS	Technologies Research Corporation of the National Center for Manufacturing Sciences
TRIP	transformation-induced plasticity
TRS	transverse rupture strength
TS	tensile strength/thick swelling
TT	through thickness
TTT	time-temperature-transformation
TTU	through-transmission ultrasonics
TWB	taylor-welded blank
TWI	thin-twill-weave/thermal-wave imaging
TWII	thick-twill-weave
TWIP	twinning-induced plasticity
TWT	taylor-welded tube
TYE	tensile, yield, and elongation
U.S.	United States
UAB	University of Alabama-Birmingham
UCF	University of Central Florida
UD	unidirectional
UDRDF	uncertainty analysis using dimension reduction and distribution fitting
UDRI	University of Dayton Research Institute
UFG	ultrafine grain
UHMW	ultra-high molecular weight
UHSS	ultra high-strength steel
UI	user interface
UK	United Kingdom
ULC	ultra-large casting
UMF	uncertainty magnification factor
UPC	uncertainty percentage contribution
UPE	Unsaturated Polyester
URI	uniform resource identifier
URL	uniform resource locator
USAMP	United States Automotive Materials Partnership
USCAR	United States Council for Automotive Research
USPTO	United States Patent Office
USW	ultrasonic welding
UT	University of Tennessee
UT-PE	ultrasonic testing using pulse/echo
UTS	ultimate tensile strength
UT-TT	ultrasonic testing using through-transmission
UV	ultraviolet
UV-Vis	ultraviolet-visible
UVA	University of Virginia

V	volt(s)
VA	vinyl acetate
V&V	verification and validation
VARTM	vacuum-assisted resin-transfer molding
VPB	viscous pressure bulge
VE	vinylester
VGCNF	vapor grown carbon nanofiber
VOMS	Virtual Organization Membership Service
VPA	volume per annum
VRP	Vehicle Recycling Partnership
VT	Vehicle Technologies
VTP	Vehicle Technologies Program
VW	Volkswagen
W	watt(s)
WA	water absorption
W/L	ratio of specimen width to length
WPC	wood-fiber-reinforced polymer composite
WRC	woodfiber-reinforced composites
WSDL	Web Service Definition/ Description Language
wt	weight
wt %	weight percent
WY	Weyerhaeuser Company
X-EDS	X-ray-electron diffraction spectroscopy/spectrometry/spectrometer
XML	eXtensible Markup Language
XPS	X-ray photoelectron spectroscopy/spectrometer/spectrometry
XRD	X-ray diffraction
XRS	X-ray photoelectron spectroscopy
YAG	yttrium-aluminum-garnet
YE	year-end
YS	yield strength
Zn	zinc
Zr	zirconium