

Appendix A. ACRONYMS AND ABBREVIATIONS

ADFG	advanced drive file generation
A/SP	Auto/Steel Partnership
ABP	acrylobenzophenone
ACC	Automotive Composites Consortium
AES	auger electron spectroscopy
AFS	American Foundry Society
AHSS	advanced high-strength steel
AKDQ	aluminum killed draw-quality
Al	aluminum
ALCOA	Aluminum Company of America
ALM	Automotive Lightweighting Materials
ALTC	Automotive and Light Truck Committee
AMD	Automotive Metals Division
AN	acrylonitrile
ANL	Argonne National Laboratory
APAW	aluminum plasma arc welding
APC	American Plastics Council
AS	adaptive simulation
ASTM	American Society for Testing and Materials
BCC	body-centered cubic
BCF	Bead Correction Factor
BH	Bake Hardening
BHF	blank holder force
BIW	body-in-white
CAD	computer-aided design
CAE	computer-aided engineering
CAFE	corporate average fuel economy
CGR	circle grid analysis
CD	compact disk
CFC	carbon-fiber composite
CHIP	CIP/sinter/HIP
CIP	cold isostatic pressing
CLM	cast light metals
COV	coefficient of variability
CP	cold pressed
CRADA	cooperative research and development agreement
CWRU	Case Western Reserve University
DAQ	data acquisition
DCB	double cantilever beam
DNS	double notch shear
DOE	U.S. Department of Energy
DOE	design of experiment
DP	dual phase

DPF	direct powder forging
DSC	dispersion strengthened copper
DQSK	drawing quality special-killed
E	experimental
EDS	energy-dispersive spectroscopy
EDX	energy dispersive x-ray
EFLC	enhanced forming limit curve
EDS	electron dispersive x-ray spectroscopy
EFLD	enhanced forming limit diagram
EGN	exfoliated graphite nanostructure
ELV	end-of-life vehicle
ENF	end-notch flexure
EMF	electromagnetic forming
FBL	feedback linearization
FCVT	FreedomCAR and Vehicle Technologies
FE	finite element
FEA	finite-element analysis
FEM	finite-element method
FLC	forming-limit curve
FLD	forming-limit diagram
FP2	Focal Project 2
FP3	Focal Project 3
FY	fiscal year
GASP	grazing angle surface polarimeter
GM	General Motors
HDG	hot dip galvanized
HDPE	high-density polyethylene
HIP	hot isostatic pressing
HSLA	high-strength low-alloy
HSS	high-strength steel
HTML	High Temperature Materials Laboratory
HVSC	Huron Valley Steel Corporation
ICS	Industrial Ceramic Solutions
IF	interstitial free
IFU	University of Stuttgart
IIW	International Institute of Welding
IR	infrared
IRDI	Industrial Research and Development Institute
ISRM	intermediate strain rate machine
ITP	International Titanium Powders, Inc.
ITP	Industrial Technologies Program
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory

LCCF	low-cost carbon fiber
LFI	long fiber injection
LIBS	laser-induced breakdown spectroscopy
LLDPE	linear low-density polyethylene
LLNL	Lawrence Livermore National Laboratory
MA	methylacrylate
MAP	microwave-assisted plasma
MIG	metal inert gas
MIT	Massachusetts Institute of Technology
MMB	mixed-mode bending
MMC	metal matrix composite
MMCC	metal matrix cast composites
MPCC	magnesium powertrain cast components
NAT	N. A. Technologies
NCC	National Composites Center
NCF	noncrimped fabric
NDE	nondestructive evaluation
NDT	nondestructive test
NWR	nuclear magnetic imaging
NRCAN	Natural Resources of Canada
NTRC	National Transportation Research Center
ODS	oxygen dispersion strengthened
OEM	original equipment manufacturer
OFC	oxygen-free copper
OPT	optimization
ORNL	Oak Ridge National Laboratory
P4	programmable powder preform process
P&S	press and sintering
PAN	polyacrylonitrile
PC	personal computer
PE	polyethylene
PID	proportional integral derivative
PM	powder metallurgy
PMC	polymer matrix composite
PMPRA	powder metallurgy particle-reinforced aluminum
PNNL	Pacific Northwest National Laboratory
PP	polypropylene
PPS	poly (phenylene sulfide)
PRA	particle-reinforced aluminum
PVB	polyvinyl butyral
PVC	polyvinyl chloride
R&D	research and development
RH	relative humidity
ROI	return on investment

ROM	read-only memory
RSW	resistance spot welding
RT	room temperature
RUC	representative unit cell
RVE	representative volume element
SA/RD	sales and administrative/research and development
SAE	Society of Automotive Engineers
SAMPE	Society for the Advancement of Material and Process Engineering
SCMD	structural cast magnesium development
SEA	specific energy absorption
SEM	scanning electron microscope
SHT	solution heat treatment
SIF	stress-intensity factor
SIMS	secondary-ion mass spectroscopy
SLS	single-lap shear
SMC	sheet molding compound
SNL	Sandia National Laboratories
SOM	solid-oxygen-conducting membrane
SPR	self-piercing rivet
SRIM	structural reaction injection molding
STL	sound transmission loss
TCM	technical cost model
TDM	Troy Design and Manufacturing
TEM	transmission electron spectroscopy
TGA	thermo-gravimetric
TMAC	Test Machine for Automotive Crashworthiness
TRIP	transformation-induced plasticity
TWB	tailor welded blank
ULSAB	ultralight steel auto body
UM	University of Michigan
USAMP	U.S. Automotive Materials Partnership
USCAR	U.S. Council for Automotive Research
UT	University of Tennessee
UTS	ultimate tensile strength
UV	ultraviolet
XPS	x-ray photoelectron spectroscopy
YSZ	yttria-stabilized zirconia