9. Acronyms and Abbreviations

°C	Degrees Celsius
µ DIC	Microscopic level DIC
µL	Microliter
0-D	Zero-dimensional
100LL	100 low lead
12Cr	12% chromium by weight
1-D	One-dimensional
21CTP	21st Century Truck Partnership
2-D	Two-dimensional
3-D	Three-dimensional
4X	4X Technologies
A/F	Air-fuel ratio
A/F	Amplitude-frequency
A356	356 aluminum
ABL	Acrylonitrile butadiene lignin
AC	alternating current
ACC	Adaptive cruise control
ACE	Advanced Combustion Engine
ACEC	Advanced Combustion and Emissions Control
ACES	Automated, connected, electric and/or shared
ACI	Advanced compression ignition
ACM	American Center for Mobility
ACP	Advanced Carbon Products
ADOPT	Automotive Deployment Options Projects Tool
AEC	Advanced Engine Combustion
AEO	Annual Energy Outlook
AEV	Autonomous electric vehicle

AFA	Alumina-forming austenitic
AFC	Alternative Fuel Corridor
AFDC	Alternative Fuels Data Center
AFI	Advanced Fueling Infrastructure
AFI	Alternative fuel infrastructure
AFIDA	Advanced fuel ignition delay analyzer
AFM	Atomic force microscopy
AFV	Alternative fuel vehicle
AGC	Aluminum graphene composite
Ah	Ampere-hour (amp-hour)
AI	Artificial intelligence
AIMSUN	Advanced Interactive Microscopic Simulator for Urban and Non-Urban Networks
AKI	Anti-knock index
Al	Aluminum
$Al_{10}SiMg$	Aluminum-silicon-magnesium
Al_2Cu	Aluminum-copper
Al_2O_3	Aluminum oxide (alumina)
ALD	Atomic-layer deposition
ALS	Advanced Light Source
AM	Additive manufacturing
AMBER	Advanced Model Based Engineering Resource
AMC	Aluminum matrix composite
AMD	Automated Mobility District
AMFI	Additive-mixing fuel injection
AMR	Annual Merit Review
ANL	Argonne National Laboratory
API	Application programming interface
APR	Annual Progress Report

APS	Atmospheric Plasma Solutions
APS	Advanced Photon Source
APT	Atom probe tomography
AR	Augmented reality
ARB	Air Resources Board
ARPA-E	Advanced Research Projects Agency - Energy
ASM	American Society for Metals
ATF	Automatic transmission fluid
ATHENA	Advanced Transportation Hub Efficiency using Novel Analysis
ATM	Active traffic management
AV	Autonomous vehicle; Automated vehicle
AZ31B	Aluminum and zinc magnesium alloy
B	Magnetic flux density
$BaTiO_2$	Barium titanate
BAU	Business as usual
BEA	Zeolite beta
BEAM	Behavior, Energy, Autonomy, and Mobility
BETO	Bioenergy Technologies Office
BEV	Battery electric vehicle
Bi	Bismuth
Bio-ACN	Bio-acrylonitrile
BMEP	Brake-mean effective pressure
BMR	Battery Materials Research Program
BNL	Brookhaven National Laboratory
BOB	Blendstocks for oxygenate blending
BOMA	Building Owners and Managers Association
BP	Budget period
BRT	Bus rapid transit

BSFC	Brake-specific fuel consumption
C	Carbon
C2G	Cradle-to-grave
Ca	Calcium
CA50	Crank angle at 50% mass fraction burned
CACC	Cooperative adaptive cruise control; coordinated adaptive cruise control
CAD	Computer aided design
CADES	Compute and Data Environment for Science
CADS	Cyber anomaly detection system
CAE	Computer-aided engineering
CaF_2	Calcium fluoride
CALPH	CALculation of PHAse Diagrams
CAM	Cathode active material
CARB	California Air Resources Board
CARLA	Computer-Assisted Related Language Adaptation
CAV	Connected and autonomous vehicle
CB	Cell build
CB	Custom blend
CC	Constant current
CC	Cruise control
CC	Clean Cities
CCE	Closed-cycle efficiency
CCV	Closed-crankcase ventilation
Cd	Coefficient of drag
CDC	Change-data capture
CDC	Conventional diesel combustion
CDTI	Clean Diesel Technology, Inc.
Ce	Cerium

CE	Coulombic efficiency
CEI	Cathode-electrolyte interphase
CeO_2	Cerium oxide (ceria)
CF	Carbon fiber
CFD	Computational fluid dynamics
CFM	Composite framework materials
CFR	Cooperative fuel research
CFRC	Carbon fiber reinforced composites
CFRP	Carbon fiber-reinforced polymer
CFTF	Carbon Fiber Technology Facility
CH_4	Methane
CHT	Conjugate heat transfer
CI	Compression ignition
CLEERS	Crosscut Lean Exhaust Emissions Reduction Simulations
CLi-P-SCP	Conjugated Li-polymer S- containing polymer
cm	Centimeter
CMOS	Complementary-symmetry metal
CN	Cetane number
CNG	Compressed natural gas
CNT	Carbon nanotube
Co	Cobalt
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2-AP	CO_2-atmospheric plasma
COTS	Commercial off-the-shelf
COV	Coefficient of variation
CPEC	Close proximity electromagnetic carbonization
CPU	Central processing unit

CR	Compression ratio
Cr_2O_3	Chromium (III) oxide
CRADA	Cooperative research and development agreement
CRC	Coordinating Research Council
CRM	Coordinated ramp metering
C_{rr}	Coefficient of rolling resistance
CRS	Cold-rolled steel
CT	Computerized tomography
CTA	Chicago Transit Authority
CTE	Coefficient of thermal expansion
CTI	Cleaner Truck Initiative
CTP	Coal tar pitch
Cu	Copper
CV	Connected vehicle
DARPA	Defense Advanced Research Projects Agency
DBC	Direct bonded copper
DC	Direct current
DCFC	Direct-current fast charging
DCIR	Direct current internal resistance
DCR	Discharge capacity rate
DEF	Diesel exhaust fluid
DEMS	Differential electrochemical mass spectroscopy
DER	Distributed energy resources
DFI	Ducted fuel injection
DFT	Density functional theory
DFW	Dallas-Fort Worth International Airport
DIC	Digital image correlation
DISI	Direct-injection spark ignition

DNS	Direct numerical simulations
DOC	Diesel oxidation catalyst
DoD	Department of Defense
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DPF	Diesel particulate filter
DPWT	Dynamic wireless power transfer
DRIFTS	Diffuse reflectance infrared Fourier-transform spectroscopy
DRX	Cation-disordered rock salt
DSS	Distribution System Simulator
DST	Dynamic stress test
DTG	data.transportation.gov
DTNA	Daimler Trucks North America LLC
DWPT	Dynamic Wireless Power Transfer
Dy	Dysprosium
E10	10% ethanol content gasoline
E15	Gasoline blended with 10.5%-15% ethanol
EAD	Eco-approach and departure
EAM	Electrochemically active monolayer
EC	Electrochemical (electronic) conducting
ECFM	Extended coherent flame model
ECN	Engine Combustion Network
eco-CAC	Eco-cooperated automated control
e-commerce	Electronic commerce
ECU	Engine control unit
EDS	Energy-dispersive X-ray spectroscopy
EDX	Energy-dispersive X-ray
EELS	Electron energy loss spectroscopy

EEMS	Energy Efficient Mobility Systems
EERE	Energy Efficiency and Renewable Energy
EETT	Electrical and Electronics Technical Team
EG	Electrogalvanized
EGR	Exhaust gas recirculation
EHN	2-ethylhexyl nitrate
EIA	Energy Information Administration
EIS	Electrochemical impedance spectroscopy
ELT	Electrification Technologies
EM	Electron microscopy
EMG	E-Mobility Group
EMI	Electromagnetic interference
EMS	Energy management system
EMSL	Environmental Molecular Science Laboratory
EOL	End of life
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
e-scooter	Electric scooter
ESS	Energy storage system
ETEM	Environmental transmission electron microscopy
EV	Electric vehicle
EVSE	Electric vehicle service equipment
FAF	Freight Analysis Framework
FC	Fast charge
FCA	Fiat-Chrysler Automobiles
FCE	First-cycle efficiency
FCML	Flying Capacitor Multilevel
FE	Fuel economy

FE	Fuel efficiency
Fe	Iron
FE	Finite element
Fe_4N	Iron nitride
FEA	Finite element analysis
FEAD	Front-end accessory drive
FEC	Fluoroethylene carbonate
FeCo	Iron-cobalt
FedEx	Federal Express
FHWA	Federal Highway Administration
F-MEP	Freight mobility energy productivity
FMLM	First-mile and last-mile
FOA	Funding Opportunity Announcement
FOTW	Fact of the Week
FSE	Friction stir extrusion
FSP	Flame-spray pyrolysis
FSP	Friction stir processing
FSW	Friction stir welding
FTIR	Fourier-transform infrared
FTP	Federal Test Procedure
FWC	Four-way catalyst
FY	Fiscal year
g	Gram
GaN	Gallium nitride
GAO	Genetic algorithm optimization
GCI	Gasoline compression ignition
GCMS	Gas chromatography mass spectroscopy
GDCI	Gasoline direct injection compression ignition

GDI	Gasoline direct injection
GEM	Greenhouse gas Emissions Model
Georgia Tech	Georgia Institute of Technology
GHG	Greenhouse gas
GISAXS	Grazing incidence small-angle X-ray scattering
GITT	Grid integration technical team
GM	General Motors
Go	Graphene oxide
GPF	Gasoline particulate filter
GPS	Global positioning system
GPU	Graphics processing unit
GREET®	Greenhouse gas, Regulated Emissions, and Energy use in Transportation
GUI	Graphical user interface
GVW	Gross vehicle weight
GVWR	Gross vehicle weight rating
H	Hydrogen
H	Magnetic field strength
H_2	Hydrogen
H2D2	Heavy-duty hybrid diesel
H_2O	Water
HAADF-STEM	High annular dark field scanning transmission electron microscopy
HALT	Highly accelerated lifetime test
HATCI	Hyundai Kia America Test Center
HC	Hydrocarbon
HCCI	Homogeneous charge compression ignition
HCEs	High consequence events
HCF	High-cycle fatigue
HCT	Hydrocarbon trap

HD	Heavy-duty
HDD	Heavy duty diesel
HEDM	High-energy diffraction microscopy
HELICS	Hierarchical Engine for Large-scale Infrastructure Co-Simulation
HEMT	High-electron-mobility transistor
HEV	Hybrid electric vehicle
HF	Hydrofluoric acid
HFTO	Hydrogen and Fuel Cells Technologies Office
HIL	Hardware-in-the-loop
HNCO	Isocyanic acid
HOLE	Highly ordered laser-patterned electrode
HOMO	Highest occupied molecular orbit
HOV	Heat of vaporization
HP	Horsepower
HPC	High performance computing
HPF	High-performance fuels
HP-RTM	High-pressure resin transfer molding
HRE	Heavy rare earth
HRM	Homogeneous relaxation model
HSFW	High-speed flywheel
HSS	High-strength steel
HT	High temperature
HTA	Hydrothermally aged
HVAC	Heating, ventilating, and air conditioning
Hz	Hertz
IACMI	Institute for Advanced Composites Manufacturing Innovation
IACS	International Annealed Copper Standard
IC	Internal combustion

ICE	Internal combustion engine
ICL	Irreversible capacity loss
ICME	Integrated computational materials engineering
ID	Ignition delay
IDOT	Illinois Department of Transportation
IDZ	Interdiffusion zone
IEEE	Institute of Electrical and Electronics Engineers
iHOV	Instantaneous heat of vaporization
IIC	Indiana Integrated Circuits
ILSS	Interlaminar shear strength
IMEP	Indicated mean effective pressure
IMS	Insulated metal substrate
INL	Idaho National Laboratory
IP	Intellectual property
IPM	Interior permanent magnet
ISFC	Indicated specific fuel consumption
IT	Information technology
JBS	Junction barrier Schottky
JES	*Journal of the Electrochemical Society*
JM	Johnson Matthey
JRC	Joint Research Center
K	Potassium
K	Empirical factor (or constant)
kg	Kilogram
kp	Parabolic rate constant
ksi	Kilopound per square inch
kW	Kilowatt
kWh	Kilowatt hours

KWN	Kampmann-Wagner
L	Liter
L2	Level 2
LANL	Los Alamos National Laboratory
LATP	Lithium aluminum titanium phosphate
lb	Pound
LBNL	Lawrence Berkeley National Laboratory
LCA	Life-cycle analysis
LCO	Lithium cobalt oxide ($LiCoO_2$)
LD	Light-duty
LDP	LiveWire Data Platform
LDV	Light-duty vehicle
LES	Large eddy simulation
LEV	Low-emission vehicle
LEV III	Low-emission vehicle level III
LFP	Lithium-ion phosphate
LHCE	Localized high-concentration electrolyte
Li	Lithium
Li_2S	Lithium sulfide
LIB	Lithium-ion battery
$LiBO_2$	Lithium borate
LIC	Lithium-ion conducting
LiDFOB	Lithium diofluoro(oxalate) borate
LiEDC	Lithium ethylene dicarbonate
LiF	Lithium fluoride
LiFSI	Lithium bis(fluorosulfonyl)imide
LiPAA	Lithium polyacrylate
$LiPF_6$	Lithium hexafluorophosphate

LiTFSI	Lithium bis(trifluoromethanesulfonyl)imide
LLNL	Lawrence Livermore National Laboratory
LLS	Layered-layered spinel
LLZO	Lithium lanthanum zirconate
LMB	Lithium-metal battery
LMNO	Lithium manganese nickel oxide
LMNOF	Li-Mn-Ni-O-F
LMP	Larson-Miller Parameter
LMR	Lithium-manganese rich
LNCO	Lithium nickel cobalt oxide
LNMO	$LiNi_{0.5}Mn_{1.5}O_2$
LNO	Lithium-nickel dioxide ($LiNiO_2$)
LPBF	Laser powder bed fusion
LRRM	Local responsive ramp metering
LSPI	Low-speed pre-ignition
LT	Low temperature
LTC	Low-temperature combustion
LTGC	Low-temperature gasoline combustion
LTMO	Lithium transition metal oxide
LTNA	Low-temperature NO_x adsorber
LTO	Lithium titanate
LTP	Low-temperature plasma
LUMO	Lowest unoccupied molecular orbit
LW	Livengood-Wu
m	Meter
M	Molarity
M/HDV	Medium- and heavy-duty vehicle
MA	Methyl acetate

mAh	Milliamp-hour
MAS	Micro alloyed steel
MCCI	Mixing-controlled compression ignition
MCE	Multi-cylinder engine
MD	Molecular dynamics
MD	Medium-duty
MDF	Manufacturing Demonstration Facility
MDOT	Michigan Department of Transportation
MENNDL	Multi-node Evolutionary Neural Networks for Deep Learning
MEP	Mobility Energy Productivity
MERF	Materials Engineering Research Facility
Mg	Magnesium
Mg_2SiO_4	Forsterite
$MgCO_3$	Magnesium carbonate
MgO	Magnesium oxide
MGU	Motor-generator unit
MHDV	Medium- and heavy-duty vehicle
Micro-CT	Micro-computed tomography
MIMO	Multi-input and multi-output
min.	Minute
MIT	Massachusetts Institute of Technology
ML	Machine learning
MLPC	Multi-layer pouch cell
mm	Millimeter
MM	Multi-mode
MMC	Metal-matrix composites
MMIFE	Multi-modal intercity freight energy
Mn	Manganese

MnBi	Manganese bismuth
$MnCO_3$	Manganese carbonate
MOD	Mobility-on-demand
MON	Motor octane number
MOSFET	Metal oxide semiconductor field effect transistor
MOTIVE	Mobility and Technology Insight Validation Evidence
MOU	Memorandum of understanding
MPa	Megapascals
MPGe	Miles per gallon equivalent
mph	Miles per hour
MPO	Metropolitan Planning Organization
Msi	Million pounds per square inch
MTC	Metropolitan Transportation Commission
MUD	Multi-unit dwelling
mV	Millivolt
MV	Medium Voltage
MW+	Megawatt plus
MY	Model year
MYPP	Multi-Year Program Plan
N/P	Negative-positive ratio
N_2O	Nitrous oxide
NA	North America
NACFE	North American Council for Freight Efficiency
Nb	Niobium
NCA	Nickel cobalt aluminum oxide
NCE	No-cost extension
NCM	Nickel cobalt manganese oxide
NDA	Non-disclosure agreement

NdFeB	Neodymium iron boron
NEAT	Non-light duty Energy and greenhouse gas emissions Accounting Tool
NEMS	National Energy Modeling System
NERVE	Networked Elements for Resin Visualization and Evaluation
NEXTCAR	Next-Generation Energy Technologies for Connected and Automated On-Road Vehicles
NFA	Nanostructured ferritic alloy
NG	Natural gas
NGO	Non-governmental organizations
NGV	Natural gas vehicle
NH_3	Ammonia
NHTSA	National Highway Traffic Safety Administration
Ni	Nickel
NIC	Network interface card
NiCr	Nichrome
NMA	Nickel manganese aluminum
NMC	Nickel manganese cobalt oxide
NMCA	Nickel manganese cobalt aluminum
NMFTA	National Motor Freight Traffic Association, Inc.
NMP	N-methyl-2-pyrrolidone
NMR	Nuclear magnetic resonance
NN	Neural network
NO	Nitric oxide (nitrogen monoxide)
NO_2	Nitrogen dioxide
NO_x	Oxides of nitrogen
NP	Nano-palladium
NREL	National Renewable Energy Laboratory
NREL80	80-mile work day duty cycle developed by NREL
NTC	Negative-temperature coefficient

O_2	Oxygen
OBD	On-board diagnostics
OC	Oxidation catalyst
OCE	Open-cycle efficiency
ODBC	Organic film based direct bonded copper
OEM	Original equipment manufacturer
OEMS	Online electrochemical mass spectroscopy
OI	Octane index
OIM	Organic insertion material
ORNL	Oak Ridge National Laboratory
OS	Octane sensitivity
OSC	Oxygen storage capacity/component
OSU	Ohio State University
P	Phosphorous
PACE	Partnership for Advanced Combustion Engines
PAH	Polycyclic aromatic hydrocarbon
PAN	Polyacrylonitrile
PC	Pre-chamber
PCC	Predictive cruise control
Pd	Palladium
PDF	Pair-distribution function
PEO	Polyethylene oxide
PEV	Plug-in electric vehicle
PF	Phase field
PFI	Port fuel injection
PFS	Partial fuel stratification
PG&E	Pacific Gas & Electric
PGM	Platinum group metals

PHEV	Plug-in hybrid electric vehicle
PI	Principal Investigator
PIONA	Paraffins, iso-paraffins, olefins, naphthenes, and aromatics
PKI	Public key infrastructure
PM	Particulate matter
PM	Permanent magnet
PMCP	Powertrain Materials Core Program
PMI	Particulate matter index
PN	Particle number
PNA	Passive NO_x adsorber
PNNL	Pacific Northwest National Laboratory
POE	Power over ethernet
POLARIS	Planning and Operations Language for Agent-based Regional Integrated Simulation
POP	unknown acronym
PP	Polypropylene
PPCI	Partially pre-mixed compression ignition
ppm	Parts per million
PS	Polysulfide
PSD	Pore-size distribution
psi	Pounds per square inch
PSU	Penn State University
Pt	Platinum
P-T	Pressure-temperature
PTO	Pyrene-4,5,9,10-tetraone
PU	Per unit
PV	Photovoltaic
PVDF	Polyvinylidene difluoride
PWM	Pulse width modulation

PμSL	microstereolithography
Q	Quarter
Q&A	Question and answer
QDTA	Quasi-dynamic traffic assignment
R value	Resistance to heat flow
R&D	Research and development
R2R	Roll-to-roll
Ra	Roughness average
RANS	Reynolds-averaged Navier-Stokes
RCM	Rapid compression machine
RD&D	Research, development, and demonstration
RE	Rare earth
ReaxFF	Reactive force field
REE	Rare earth element
RFP	Request for proposals
Rh	Rhodium
RIM	Reaction Injection Molding
RM	Ramp metering
RMS	Root mean square
ROI	Return on investment
RON	Research octane number
RPC	Reactive-polymer composite
RST	Reactive-spray technology
RSW	Resistance spot weld
RT	Room temperature
RTM	Resin transfer molding
s	Second
S	Sulfur

SAC	Single-atom catalyst
SACI	Spark-assisted compression ignition
SAE	Society of Automotive Engineers
SAV	Shared and automated vehicles
SAW	Surface-acoustic wave
SBD	Schottky barrier diode
SBIR	Small Business Innovation Research
SCAQMD	South Coast Air Quality Management District
SCE	Single-cylinder engine
SCO	Selective catalytic oxidation
SCR	Selective catalytic reduction
SCRF	Selective catalytic reduction on filter
SDOs	Standards developing organizations
SECCM	Scanning electrochemical cell microscopy
SEED	Seeking Educational Equity and Diversity
SEI	Silicon electrolyte interface
SEI	Solid electrolyte interphase
SEISTA	Silicon electrolyte interface stability
SEM	Scanning electron microscope
SERS	Surface-enhanced Raman spectroscopy
SFCTA	San Francisco County Transportation Authority
ShAPE™	Shear Assisted Processing and Extrusion
Si	Silicon
SI	Spark ignition
SiC	Silicon carbide
SIL	Software-in-the-loop
SIMS	Secondary ion mass spectroscopy
SiO_x	Silicon Oxides

SLAC	Stanford Linear Accelerator Center
SMART	Systems and Modeling for Accelerated Research in Transportation
SMC	Soft magnetic composites
Sn	Tin
SNL	Sandia National Laboratories
SNS	Spallation Neutron Source
SOA	State of the art
SOC	State of charge
SOI	Start of injection
SON	Supercharged octane number
SOPO	Statement of Project Objectives
SOW	Statement of work
SP	Solution process
Spaci-MS	Spatially resolved capillary inlet - mass spectroscopy
SPAN	Sulfurized polyacrylonitrile
SPI	Stochastic pre-ignition
SPIN	Smart Power Integrated Node
SPM	Surface permanent magnet
SPR	Self-pierce rivet
SPS	Single-prolonged stress
SRI	Southern Research Institute
SSE	Solid-state electrolyte
SStAC	Stainless steel alloy corrosion
SSZ	Alumina silicate zeolite
ST2	SuperTruck 2
STEM	Scanning transmission electron microscopy
STRIDE	Spoofing, tampering, repudiation, information disclosure, denial of service, elevation of privilege
STTR	Small Business Technology Transfer

SULEV	Super ultra-low emissions vehicle
$SULEV_{30}$	Super ultra-low emissions vehicle with 0.030 grams/mile combined non-methane organic gases and NO_x
SUNY Poly	State University of New York Polytechnic
SuRF	Scale-up Research Facility
SwRI	Southwest Research Institute
T	Temperature
T6	Temper 6
T50	Temperature at which 50% of the distillate fuel is recovered in a distillation experiment
T90	Temperature at which 90% of the distillate fuel is recovered in a distillation experiment
TCO	Total cost of ownership
TCR	Temperature coefficient of resistance
TDC	Top dead center
TEAD	Transportation Energy Analysis Dashboard
TEBD	Transportation Energy Data Book
Tech	Technical
TEM	Transmission electron microscopy
Tg	Glass transition temperature
THD	Total harmonic distortion
Ti	Titanium
TiB_2	Titanium diboride
TiO_2	Titanium dioxide
TJI	Turbulent jet ignition
TL	Trifunctional linker
TLP	Transient liquid phase
TM	Transition metal
TNC	Transportation network company
TNO	Titanium niobium oxide

TPG	Thermal pyrolytic graphite
TPO	Transportation Planning Organizations
TRL	Technology readiness level
TTE	1,1,2,2-tetrafluoroethyl-2,2,3,3-tetrafluoropropyl ether
TuFF	Tailored universal Feedstock for Forming
TWC	Three-way catalyst
U.S.	United States
U.S. DRIVE	United States Driving Research and Innovation for Vehicle efficiency and Energy sustainability
UCLA	University of California, Los Angeles
UCSB	University of California at Santa Barbara
UD	University of Delaware
UHC	Unburned hydrocarbons
$ULNO_x$	Ultra-low NO_x
µm	Micrometer
UM	University of Michigan
UMEI	University of Michigan Energy Institute
UNCC	University of North Carolina at Charlotte
UPS	United Parcel Service
UrbanSim	Urban Simulation
URI	University of Rhode Island
USCAR	United States Council for Automotive Research
USPS	United States Postal Service
USW	Ultrasonic welding
UT-Austin	University of Texas at Austin
UTK	University of Tennessee, Knoxville
UTS	Ultimate tensile strength
UVA	University of Virginia
UW	University of Wyoming

V	Volt
V2G	Vehicle-to-Grid
V2V	Vehicle to vehicle
V2X	Vehicle-to-anything
VAN	VTO Analysis
VAR	Vacuum arc re-melting
VDC	Volts of direct current
VIL	Vehicle-in-the-loop
VIM	Vacuum induction molding
Virginia Tech	Virginia Polytechnic Institute
VIUS	Vehicle Inventory and Use Survey
VMT	Vehicle-miles traveled
VOTT	Value of travel time
VSA	Variable speed advisory
VT	Virginia Polytechnic and State University
VTO	Vehicle Technologies Office
WBG	Wide bandgap
WECC	Western Interconnection model
Wh/kg	Watt-hour per kilogram
WPI	Worcester Polytechnic Institute
WRI	Western Research Institute
wt. %	Weight percent
WTW	Well-to-wheels
WXFC	Wireless extreme fast charging
XFC	Extreme fast charging
XPS	X-ray photoelectron spectroscopy
XRD	X-ray diffraction
Y	Yield-sooting index

YS	Yield strength
ZANZEFF	Zero and Near-Zero Emissions Freight Facilities
ZECT II	Zero-Emission Cargo Transport II
Zero-RK	Zero-order Reaction Kinetics
Zn	Zinc
ZnPhos	Zinc phosphating
ZrO_x	Zirconium sub-oxide

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